

# Stanford

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## Elizabeth Burgener

Instructor, Pediatrics - Pulmonary Medicine

### CLINICAL OFFICES

- **Pediatric Pulmonary and Cystic Fibrosis Clinic**

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### Bio

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### CLINICAL FOCUS

- Cystic Fibrosis
- Pediatric Pulmonary

### ACADEMIC APPOINTMENTS

- Instructor, Pediatrics - Pulmonary Medicine

### PROFESSIONAL EDUCATION

- Residency: Stanford Health Care at Lucile Packard Children's Hospital (2015) CA
- Board Certification: Pediatric Pulmonary, American Board of Pediatrics (2018)
- Fellowship: Stanford University Pediatric Pulmonary Fellowship (2018) CA
- Board Certification: Pediatrics, American Board of Pediatrics (2014)
- Medical Education: Joe and Teresa Lozano Long School of Medicine at UT San Antonio (2011) TX

### Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Patients with cystic fibrosis suffer from chronic infection in their airways. *Pseudomonas aeruginosa* is the most common bacteria found in their lungs and is associated with faster decline in lung function and earlier death. We recently discovered a bacteriophage (virus) that infects *Pseudomonas*, Pf bacteriophage. This virus turns sputum into a thick goop of molecules called a biofilm that makes infection very difficult to treat. In the laboratory we know that Pf phage makes biofilms more viscous, more adherent, and it helps protect *Pseudomonas* from both antibiotics and immune cells. I am currently studying the role of Pf phage in patients with cystic fibrosis. Pf phage is associated with chronic infection, older age and increased antibiotic resistance in patients with cystic fibrosis.

## Publications

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### PUBLICATIONS

- **Dynamic light scattering microrheology for soft and living materials.** *Soft matter*  
Cai, P. C., Krajina, B. A., Kratochvil, M. J., Zou, L., Zhu, A., Burgener, E. B., Bollyky, P. L., Milla, C. E., Webber, M. J., Spakowitz, A. J., Heilshorn, S. C.  
2021
- **The Safety and Toxicity of Phage Therapy: A Review of Animal and Clinical Studies.** *Viruses*  
Liu, D., Van Belleghem, J. D., de Vries, C. R., Burgener, E., Chen, Q., Manasherob, R., Aronson, J. R., Amanatullah, D. F., Tamma, P. D., Suh, G. A.  
2021; 13 (7)
- **Filamentous Bacteriophages and the Competitive Interaction between Pseudomonas aeruginosa Strains under Antibiotic Treatment: a Modeling Study.** *mSystems*  
Pourtois, J. D., Kratochvil, M. J., Chen, Q., Haddock, N. L., Burgener, E. B., De Leo, G. A., Bollyky, P. L.  
2021: e0019321
- **Area Under the Curve Achievement of Once Daily Tobramycin in Children with Cystic Fibrosis during Clinical Care.** *Pediatric pulmonology*  
Brockmeyer, J. M., Wise, R. T., Burgener, E. B., Milla, C., Frymoyer, A.  
2020
- **Methods for Extraction and Detection of Pf Bacteriophage DNA from the Sputum of Patients with Cystic Fibrosis.** *PHAGE (New Rochelle, N.Y.)*  
Burgener, E. B., Secor, P. R., Tracy, M. C., Sweere, J. M., Bik, E. M., Milla, C. E., Bollyky, P. L.  
2020; 1 (2): 100–108
- **Pf Bacteriophage and Their Impact on Pseudomonas Virulence, Mammalian Immunity, and Chronic Infections.** *Frontiers in immunology*  
Secor, P. R., Burgener, E. B., Kinnersley, M. n., Jennings, L. K., Roman-Cruz, V. n., Popescu, M. n., Van Belleghem, J. D., Haddock, N. n., Copeland, C. n., Michaels, L. A., de Vries, C. R., Chen, Q. n., Pourtois, et al  
2020; 11: 244
- **Filamentous bacteriophages are associated with chronic Pseudomonas lung infections and antibiotic resistance in cystic fibrosis** *SCIENCE TRANSLATIONAL MEDICINE*  
Burgener, E. B., Sweere, J. M., Bach, M. S., Secor, P. R., Haddock, N., Jennings, L. K., Marvig, R. L., Johansen, H., Rossi, E., Cao, X., Tian, L., Nedelec, L., Molin, et al  
2019; 11 (488)
- **Cystic fibrosis transmembrane conductance regulator modulators: precision medicine in cystic fibrosis** *CURRENT OPINION IN PEDIATRICS*  
Burgener, E. B., Moss, R. B.  
2018; 30 (3): 372–77
- **Pf Phage in Chronic Pseudomonas aeruginosa Wound Infections**  
Bach, M. S., Sweere, J., Burgener, E. B., Bollyky, P. L., Suh, G. A.  
WILEY.2018: A5
- **PF BACTERIOPHAGE IN PATIENTS WITH CYSTIC FIBROSIS (CF) IS ASSOCIATED WITH INCREASED SPUTUM ELASTASE AND PSEUDOMONAS AERUGINOSA LOAD**  
Burgener, E. B., Sweere, J. M., Bollyky, P. L., Milla, C.  
WILEY.2017: S350
- **Clinical characteristics and outcomes of pediatric patients with CMV DNA detection in bronchoalveolar lavage fluid.** *Pediatric pulmonology*  
Burgener, E. B., Waggoner, J., Pinsky, B. A., Chen, S. F.  
2017; 52 (1): 112-118
- **Molecular and Culture-Based Bronchoalveolar Lavage Fluid Testing for the Diagnosis of Cytomegalovirus Pneumonitis.** *Open forum infectious diseases*  
Tan, S. K., Burgener, E. B., Waggoner, J. J., Gajurel, K., Gonzalez, S., Chen, S. F., Pinsky, B. A.  
2016; 3 (1): ofv212-?
- **Eosinophilic Pneumonitis As Initial Presentation Of Acute Lymphoblastic Leukemia**  
Burgener, E. B., Milla, C. E.  
AMER THORACIC SOC.2016

- **Index of suspicion.** *Pediatrics in review*  
Todd, S., Arora, R., Kannikeswaran, N., Allarakhia, I., Sivaswamy, L., Wallenstein, M. B., Burgener, E. B., Klotz, J., Kerner, J. A.  
2014; 35 (10): 439-446
- **Case 3 Lactic Acidosis and Cardiovascular Collapse in a Teen With Ulcerative Colitis** *PEDIATRICS IN REVIEW*  
Wallenstein, M. B., Burgener, E. B., Klotz, J., Kerner, J. A.  
2014; 35 (10): 444-46
- **The impact of the central venous catheter on the diagnosis of infectious endocarditis using Duke criteria in children with Staphylococcus aureus bacteremia** *PEDIATRIC INFECTIOUS DISEASE JOURNAL*  
Bendig, E. A., Singh, J., Butler, T. J., Arrieta, A. C.  
2008; 27 (7): 636-639