

CURRICULUM VITAE



Michael P. Boyle, MD, FCCP

September 11, 2015

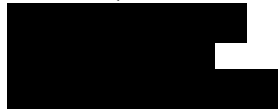
DEMOGRAPHIC INFORMATION

Current Appointments

2015-current Vice-President of Therapeutics Development, Cystic Fibrosis Foundation
2015-current Adjunct Professor of Medicine, Johns Hopkins University School of Medicine

Personal Data

The Cystic Fibrosis Foundation
6931 Arlington Road, Suite 200
Bethesda, MD 20814



The Johns Hopkins Division of Pulmonary and Critical Care Medicine
1830 East Monument Street, 5th floor
Baltimore, MD 21287



Hospital Address:

The Johns Hopkins Hospital
1800 Orleans Street
Baltimore, MD 21287

Education and Training

Undergraduate

1982-1986: B.S. (Biochemistry and Honors Program), University of Maryland

Doctoral/graduate

1986 to 1991: M.D. Johns Hopkins University School of Medicine

Post-doctoral

1990-1991: Dean's Research Year, Johns Hopkins School of Medicine
1991-1992: Intern, Internal Medicine, Johns Hopkins Hospital
1992-1994: Resident, Internal Medicine, Johns Hopkins Hospital
1996-1999: Fellow, Pulmonary and Critical Care Medicine, Johns Hopkins Hospital
1997: Johns Hopkins School of Public Health Summer Institute: Conduct of Clinical Trials
2004-2005: Johns Hopkins School of Public Health: Biostatistics I-III

Professional Experience

1994-1996	Faculty, Greater Baltimore Medical Center, Department of Medicine
1999-2002	Instructor of Medicine, Johns Hopkins University School of Medicine
2002-2006	Assistant Professor of Medicine, Johns Hopkins University School of Medicine
2006-2014	Associate Professor of Medicine, Johns Hopkins University School of Medicine
2014-2015	Professor of Medicine, Johns Hopkins University School of Medicine
2015-current	Adjunct Professor of Medicine

RESEARCH ACTIVITY: (H-index 33)

Peer-reviewed Original Science Publications

1. Weisman HF, Bartow T, Leppo MK, Marsh HC, Carson GR, Concino MF, **Boyle MP**, Roux KH, Weisfeldt ML, Fearon DT. Soluble Human Complement Receptor Type 1: In Vivo Inhibitor of Complement Suppressing Post-Ischemic Myocardial Inflammation and Necrosis. *Science* 249:146-151, 1990.
2. Weisman HF, Bartow T, Leppo MK, **Boyle MP**, Marsh HC, Carson GR, Roux KH, Weisfeldt ML, Fearon DT. Recombinant soluble CR1 suppressed complement activation, inflammation, and necrosis associated with reperfusion of ischemic myocardium. *Trans Assoc Am Physicians* 103:64-72, 1990.
3. **Boyle MP**, Weisman HF. Limitation of Infarct Expansion and Ventricular Remodeling by Late Reperfusion: Study of Time Course and Mechanism in a Rat Model. *Circulation* 88:2872-2883, 1993.
4. Zeitlin PL, Rubenstein RC, **Boyle MP**, Chu SC. Phenylbutyrate Therapy for Cystic Fibrosis: Basic Mechanisms and Clinical Applications. *Pediatric Pulmonology* 26:164-166, 1998.
5. **Boyle MP**. Minocycline Induced Pancreatitis in Cystic Fibrosis. *Chest* 119:1283-1285, 2001.
6. **Boyle MP**, Enke RA, Adams RJ, Guggino WB, Zeitlin PL. *In-Utero* AAV-Mediated Gene Transfer to Rabbit Pulmonary Epithelium. *Molecular Therapy* 4: 115-121, 2001.
7. Noone PG, Hamblett N, Accurso F, Aitken ML, **Boyle MP**, Dovey M, Gibson R, Johnson C, Kellerman D, Konstan MW, Milgram L, Mundahl J, Retsch-Bogort G, Rodman D, Williams-Warren J, Wilmott RW, Zeitlin P, Ramsey B. Safety of aerosolized INS 365 in patients with mild to moderate cystic fibrosis: Results of a phase I multi-center study. *Pediatric Pulmonology* 32: 122-8, 2001.
8. **Boyle MP**, Farukhi Z, Nosky ML. Strategies for Improving Transition to Adult Cystic Fibrosis Care Based on Patient and Parent Views. *Pediatric Pulmonology* 32:428-436, 2001.
9. Zeitlin PL, Diener-West M, Rubenstein R, **Boyle MP**, Lee C, Brass-Ernst L. Evidence of CFTR function in cystic fibrosis after systemic administration of 4-phenylbutyrate. *Molecular Therapy* 6: 119-126, 2002.
10. **Boyle MP**, Enke RA, Mogayzel PJ, Guggino WB, Martin DB, Agarwal S, Zeitlin PL. Effect of Adeno-associated virus-specific Immunoglobulin G in Human Amniotic Fluid on Gene Transfer. *Human Gene Therapy* 14:365-373, 2003.
11. **Boyle MP**, Diener-West M, Milgram LJ, Knowles MR, Foy C, Zeitlin PL, Standaert TA and the CFTDN Nasal PD Study Group. A Multi-Center Study of the Effect of Solution Temperature on Nasal Potential Difference Measurements. *Chest* 124:482-489, 2003.
12. Merlo CA, **Boyle MP**. Modifier Genes in Cystic Fibrosis Lung Disease. *J Lab Clin Med* 141: 237-241, 2003.
13. Zeitlin PL, **Boyle MP**, Guggino WB, Molina L. A Phase I Trial of Moli1901 for Cystic Fibrosis. *Chest* 125:143-149, 2004.
14. Aris RM, Merkel PA, Bachrach LK, Borowitz DS, **Boyle MP**, Elkin SL, Guise TA, Hardin DS, Haworth CS, Holick MF, Joseph PM, O'Brien K, Tullis E, Watts NB, White TB. Guide to Bone Health and Disease in Cystic Fibrosis. *J Clin Endocrinol Metab* 90:1888-1896, 2005.
15. **Boyle MP**, Noschese ML, Watts SL, Davis ME, Stenner S, Lechtzin N. Failure of High-Dose Ergocalciferol to Correct Vitamin D Deficiency in Adults with Cystic Fibrosis. *Am J Respir Crit Care Med* 172:212-7, 2005.
16. Lechtzin N, Manju J, Irizarry R, Merlo C, Diette GB, **Boyle MP**. Outcomes of Adults with Cystic Fibrosis Infected With Multiple Antibiotic Resistant Pseudomonas Aeruginosa. *Respiration* 73:27-33, 2006.
17. **Boyle MP**, Enke RA, Reynolds JB, Mogayzel PJ, Guggino WB, and Zeitlin PL. Membrane-associated heparin sulfate is not required for rAAV-2 infection of human respiratory epithelia. *Virology J* 3:29, 2006.
18. Wright JL, Merlo CA, Reynolds JB, Zeitlin PL, Garcia JGN, Guggino WB, **Boyle MP**. Microarray Analysis of Human Nasal Respiratory Epithelial Cells from Cystic Fibrosis Δ F508 Homozygotes with Mild and Severe Lung Disease *Am J Respir Crit Mol Bio* 35:327-36, 2006. PMID: 16614352.
19. Lee CKK, **Boyle MP**, Diener-West M, Brass-Ernst L, Noschese M, Zeitlin PL. Levofloxacin Pharmacokinetics in Adult Cystic Fibrosis. *Chest* 131: 796-802, 2007.
20. **Boyle MP**. Strategies for Identifying Novel Modifier Genes in Cystic Fibrosis. *Proceedings of American Thoracic Society*, 4:52-57, 2007. PMID: 17202292.

21. Buranawuti K, **Boyle MP**, Cheng S, McDougal K, Fallin MD, Merlo C, Zeitlin PL, Rosenstein BJ, Mogayzel PJ, Wang X, Cutting GR. Variants in Mannose-Binding Lectin and Tumor Necrosis Factor Affect Survival in Cystic Fibrosis. *Journal of Human Genetics* 44:209-214, 2007. PMID: 17158822.
22. Riekert KA, Bartlett SJ, **Boyle MP**, Krishnan JA, Rand CS. The Association between Depression, Lung Function and Health Related Quality of Life among Adults with Cystic Fibrosis. *Chest* 132:231-237, 2007.
23. Hsu SC, Groman J, Merlo C, Naughton K, Zeitlin P, Germain-Lee E, **Boyle MP** and Cutting GR. Mutations in Gsx cause reduced activation of downstream targets in epithelial tissues due to haplo-insufficiency. *J Clin Endocrinol Metab* 92:3941-8, 2007. PMID: 17652219.
24. Merlo CA, **Boyle MP**, Diener-West M, Marshall B, Goss CH, Lechtzin N. Incidence and Risk Factors for Multiple Antibiotic Resistant Pseudomonas aeruginosa in Cystic Fibrosis. *Chest* 132:562-568, 2007.
25. **Boyle MP**, Singh C, Sabadosa K, Haase J, Hollon K, Lester MK, Quinton H. The Adult CF Benchmarking Project: What Have We Learned? *Pediatric Pulmonology* 30:165-167, 2007.
26. McLaughlin SE, Diener-West M, Indurkha A, Rubin H, Heckmann R, **Boyle MP**. Improving Transition from Pediatric to Adult Cystic Fibrosis Care: Lessons from a National Survey of Current Practices. *Pediatrics*. 1212:1160-1166, 2008.
27. Dasenbrook EC, Merlo CA, Diener-West M, Lechtzin N, **Boyle MP**. Persistent Methicillin-resistant Staphylococcus Aureus and Rate of FEV1 Decline in Cystic Fibrosis. *Am J Respir Crit Care Med* 178:814-821; 2008. PMID: 18669817.
28. Suk JS, Lai SK, Wang Y-Y, Ensign LM, Zeitlin PL, **Boyle MP**, Hanes J, The penetration of fresh undiluted sputum expectorated by cystic fibrosis patients by non-adhesive polymer nanoparticles, *Biomaterials* 30:2591-2597, 2009.
29. Tang BC, Dawson M, Lai SK, Wang Y, Suk JS, Yang M, Zeitlin P, **Boyle MP**, Fu J, Hanes J. Biodegradable polymer nanoparticles that rapidly penetrate the human mucus barrier, *Proc Natl Acad Sci USA* 106:19268-73, 2009.
30. Sudfeld CR, Dasenbrook EC, Merz WG, Carroll KC, **Boyle MP**. Prevalence and Risk Factors for Recovery of Filamentous Fungi in Individuals with Cystic Fibrosis. *Journal of Cystic Fibrosis*. 9:110-6, 2010. PMID: 20045384.
31. Dasenbrook EC, Checkley W, Merlo CA, Konstan MW, Lechtzin N, **Boyle MP**. Association of Respiratory Tract Methicillin-Resistant Staphylococcus Aureus and Survival in Cystic Fibrosis. *JAMA* 303:2386-92, 2010. PMID: 20551409
32. Cystic fibrosis pulmonary guidelines: pulmonary complications: hemoptysis and pneumothorax. Flume PA, Mogayzel PJ Jr, Robinson KA, Rosenblatt RL, Quittell L, Marshall BC; Clinical Practice Guidelines for Pulmonary Therapies Committee; Cystic Fibrosis Foundation Pulmonary Therapies Committee. *Am J Respir Crit Care Med*. 182:298-306, 2010. PMID: 20675678.
33. Modi AC, Quittner AL, **Boyle MP**. Disclosure of Chronic Disease in Adults with Cystic Fibrosis: the Adult Data for Understanding Lifestyle and Transitions (ADULT) Survey. *BMC Pulmonary* 10:46, 2010. PMID: 20831811.
34. Accurso FJ, Rowe SM, Clancy JP, **Boyle MP**, Dunitz J, Durie PR, Sagel SD, Hornick DB, Konstan MW, Donaldson SH, Moss RB, Pilewski JM, Rubenstein RC, Uluer AZ, Aitken ML, Freedman SD, Dong Q, Zha J, Stone AJ, Olson ER, Ordonez CL, Campbell PW, Ashlock MA, Ramsey BW. VX-770, a Novel CFTR Potentiator in Cystic Fibrosis Patients with the G551D Mutation. *NEJM* 363:1991-2003, 2010. PMID: 21083385.
35. Suk JS, Lai SK, Boylan NJ, Dawson MR, **Boyle MP**, Hanes J. Rapid transport of muco-inert nanoparticles in cystic fibrosis sputum treated with N-acetylcysteine. *Nanomedicine*. 6:365-75, 2011. PMID: 21385138.
36. Eakin MN, Bilderback MS, **Boyle MP**, Mogayzel PJ, Riekert KA. Longitudinal Association between Medication Adherence and Lung Function among People with Cystic Fibrosis. *Journal of Cystic Fibrosis*. 10:258-64, 2011. PMID:21458391
37. West NE, Lechtzin N, Merlo CA, Turowski JB, Davis ME, Ramsay MZ, Watts SL, Stenner SP, **Boyle MP**. Appropriate goal level for 25-hydroxyvitamin D in cystic fibrosis. *Chest*. 140:469-74, 2011. PMID: 21393390.
38. Hida K, Lai SK, Suk JS, Won SY, **Boyle MP**, Hanes J. Common gene therapy viral vectors do not efficiently penetrate sputum from cystic fibrosis patients. *PLoS One*. 2011;6(5):e19919. PMID: 21637751.
39. Boylan NJ, Suk JS, Lai SK, Jelinek R, **Boyle MP**, Cooper MJ, Hanes J. Highly compacted DNA nanoparticles with low MW PEG coatings: In vitro, ex vivo and in vivo evaluation. *J Control Release*. 2012 Jan 10;157(1):72-9. Epub 2011 Aug 31. PubMed PMID: 21903145
40. Suk JS, Boylan NJ, Trehan K, Tang BC, Schneider CS, Lin JM, **Boyle MP**, Zeitlin PL, Lai SK, Cooper MJ, Hanes J. N-acetylcysteine enhances cystic fibrosis sputum penetration and airway gene transfer by highly compacted DNA nanoparticles. *Mol Ther*. 19:1981-9, 2011. PPMID: 21829177
41. Clancy JP, Rowe SM, Accurso FJ, Aitken ML, Amin RS, Ashlock MA, Ballmann M, **Boyle MP**, Campbell PW, Bronsveld I, DeBoeck K, Donaldson SH, Dorkin HL, Dunitz JM, Durie PR, Jain M, Lebecque P, McCoy KS, Moss RB, Pilewski JM, Rosenbluth D, Rubenstein RC, Schechter MS, Botfield M, Cui Y, Ordoñez CL, Spencer-Green GT, Vernillet L, Wisseh S, Yen K, Konstan MW. Results of a Phase 2a study of VX-809, an investigational CFTR corrector compound, in cystic fibrosis subjects homozygous for the F508del-CFTR mutation. *Thorax* 67:12-18, 2012. PMID: 21825083

42. Lechtzin N, West N, Allgood S, Wilhelmz E, Khan U, Mayer-Hamblett N, Aitken ML, Ramsey BW, **Boyle MP**, Mogayzel PJ Jr, Goss CH. Rationale and design of a randomized trial of home electronic symptom and lung function monitoring to detect cystic fibrosis pulmonary exacerbations: The early intervention in cystic fibrosis exacerbation (eICE) trial. *Contemp Clin Trials*. 36:460-469, 2013 PMID: 24055998.
43. Rowe SM, Liu B, Hill A, Hathorne H, Cohen M, Beamer JR, Accurso FJ, Dong Q, Ordoñez CL, Stone AJ, Olson ER, Clancy JP; VX06-770-101 Study Group. Optimizing nasal potential difference analysis for CFTR modulator development: assessment of ivacaftor in CF subjects with the G551D-CFTR mutation. *PLoS One*. 26;8(7):e66955, 2013 PMID:23922647
44. Suk JS, Kim AJ, Trehan K, Schneider CS, Cebotaru L, Woodward OM, Boylan NJ, **Boyle MP**, Lai SK, Guggino WB, Hanes J. Lung gene therapy with highly compacted DNA nanoparticles that overcome the mucus barrier. *J Control Release*. 2014 Jan 14; 178C: 8-17 PMID: 24440664.
45. **Boyle MP**, Sabadosa KA, Quinton HB, Marshall BC, Schechter MS. Key Findings of the Cystic Fibrosis Foundation's U.S. Clinical Practice Benchmarking Project. *BMJ Quality and Safety*. 23:i15-i22, 2014. PMID: 24608546.
46. Jennings MT, **Boyle MP**, Weaver D, Callahan K, Dasenbrook EC. Eradication Strategy for Persistent Methicillin-Resistant Staphylococcus aureus Infection in Individuals with Cystic Fibrosis: Rationale and Design of the PMEP Randomized Clinical Trial. *Trials* 15:223, 2014. PMID: 24925006.
47. Hanes J, Schuster B, Kim A, Kays J, Kanzawa M, Guggino W, **Boyle MP**, Rowe S, Muzyczka N, and Suk JS. Overcoming the cystic fibrosis sputum barrier to leading adeno-associated virus gene therapy vectors. *Molecular Therapy*. 22:1484-93, 2014. PMID: 24869933.
48. **Boyle MP**, Bell SC, Konstan MW, McColley SA, Rowe SM, Rietschel E, Huang X, Waltz D, Patel NR, Rodman D. on behalf of the VX09-809-102 Study Group. Randomised Trial of Combined CFTR Corrector and Potentiator Therapy in F508del-CFTR Cystic Fibrosis. *The Lancet – Respiratory Medicine*. 2: 527-38, 2014. PMID: 24973281.
49. Wainwright CE, Elborn JS, Ramsey BW, Marigowda G, Huang X, Cipolli M, Colombo C, Davies JC, De Boeck K, Flume PA, Konstan MW, McColley SA, McCoy K, McKone EF, Munck A, Ratjen F, Rowe SM, Waltz D, **Boyle MP**; TRAFFIC Study Group; TRANSPORT Study Group. Lumacaftor-Ivacaftor in Patients with Cystic Fibrosis Homozygous for Phe508del CFTR. *N Engl J Med*. 2015 Jul 16;373(3):220-31.
50. Mastorakos P, da Silva AL, Chisholm J, Song E, Choi WK, Boyle MP, Morales MM, Hanes J, Suk JS. Highly compacted biodegradable DNA nanoparticles capable of overcoming the mucus barrier for inhaled lung gene therapy. *Proc Natl Acad Sci U S A*. 2015 Jul 14;112(28):8720-5. doi: 10.1073/pnas.1502281112. Epub 2015 Jun 29. PMID: 26124127.

Invited Reviews

1. **Boyle MP**. Unique Presentations and Chronic Complications in Adult Cystic Fibrosis: Do they teach us anything about CFTR? *Respiratory Research* 1:125-128, 2000.
2. **Boyle MP**. The Spectrum of CFTR-related disease. *Internal Medicine* 40(7): 522-525, 2001.
3. **Boyle MP**. Nonclassic Cystic Fibrosis and CFTR-related diseases. *Current Opinions in Pulmonary Med*. 9:498-503, 2003.
4. **Boyle MP**. So many drugs, so little time - the future challenge of cystic fibrosis care? *Chest* 123: 3-5, 2003.
5. **Boyle MP**. Update on Maintaining Bone Health in Cystic Fibrosis. *Current Opinions in Pulmonary Med*, 12:453-8. 2006.
6. **Boyle MP**. Adult Cystic Fibrosis: Medical Grand Rounds. *JAMA* 298:1787-93, 2007.
7. **Boyle MP**. Cystic Fibrosis: Year in Review. *Current Opinion in Pulmonary Medicine* 16:583, 2010. PMID: 20829695.
8. Rowe S, **Boyle MP**. Combination of Correctors & Potentiators for F508del CFTR. *Ped Pulmonol*. S34: 180-181, 2011.
9. **Boyle MP**, Jennings M, Dasenbrook ED. Clinical Trial Designs for Methicillin-Resistant Staph Aureus (MRSA) in CF. *Pediatric Pulmonology* S34: 141-143, 2011.
10. **Boyle MP** and De Boeck K. A New Era in Cystic Fibrosis Therapeutics: Correcting the Underlying CFTR Defect. *The Lancet - Respiratory Medicine* 1:158-163, 2013.
11. Jennings MT, Rieckert KA, and **Boyle MP**. *Medical Principles and Practice*. Update on Key Emerging Challenges in Cystic Fibrosis, 2014 Jan 10. [Epub ahead of print] PubMed PMID: 24434297.

Consensus Conference Statements

1. Cystic Fibrosis Adult Care Consensus Conference Report. Cystic Fibrosis Foundation Concepts in CF Care, Volume IX, Section 3, July 1999.
2. Guide to Bone Health and Disease in Cystic Fibrosis Consensus Conference Report. Cystic Fibrosis Foundation Concepts in CF Care, Volume X, Section 4, June 2002.

Inventions, Patents, Copyrights

2012 **Investigational New Drug (IND) from FDA – IND # 114966 Awarded April 16, 2012**
IND Holder: Michael Boyle, M.D.

Extramural Sponsorship

1/1/03 - 12/31/15 Annual CF Foundation Therapeutics Development Site Grant
Cystic Fibrosis Foundation
\$1,345,000
Co-PI: 3%; Provides funding for Johns Hopkins CF Foundation Therapeutic Development Network Site

1/1/12 - 12/31/15 Randomized Multi-Center Clinical Trial of Treatment of MRSA in Cystic Fibrosis
PMEP (Persistent MRSA Eradication Protocol)
Cystic Fibrosis Foundation
\$412,979
Role: PI, 15%

Previous

7/99 - 6/01 Cystic Fibrosis Gene Therapy
Bauernschmidt Fellowship
\$70,000
Role: PI, 75%

4/00 - 3/04 AAV-mediated in-utero gene therapy
Shwachman Award:
BOYLE00Q0
Cystic Fibrosis Foundation
\$245,000
Role: PI, 70%

9/00 - 9/04 Applied Genomics in Cardiopulmonary Disease (Clinical)
U01 HL66618
NIH/NHLBI
\$4,316,377
PI: Haponik, E/Garcia JGN
Role: Co-Investigator, 5%; Dr. Boyle was the director of the Cystic Fibrosis component of this program, one of the three clinical diseases featured in the grant.

9/00 - 9/04 Applied Genomics in Cardiopulmonary Disease (Genotyping)
U01 HL 66615
NIH/NHLBI
\$3,177,914
PI: A.F. Scott
Role: Co-Investigator, 5%; Dr. Boyle was a member of the genotyping and bioinformatics committees. This support was relinquished at the start of the K23 award.

9/01- 8/06 Twin and sibling study of heritable CF phenotypes
R01 HL68927
NIH/NHLBI
\$615,811
PI: Cutting, G
Role: Co-Investigator/Clinical Phenotyping Coordinator, No salary support

7/02 - 6/04 Treatment of Osteopenia in CF Adults with Zoledronic Acid

Cystic Fibrosis Foundation
 Clinical Research Award
 \$214,452
 Role: PI; 7%
 7/02 - 6/04 CF Foundation Research Development Program Grant
 CF Foundation
 \$2,000,000
 PI: Guggino WB
 Role: Co-Investigator, 10%; Boyle - Career Development Award; This grant provides lab funding for investigating the molecular basis of difference in CF phenotype

7/03 - 10/08 Genetic modifiers of cystic fibrosis
 K23 HL071847
 NIH/NHLBI
 \$657,450
 Role: PI, 70%

7/07 - 7/08 The National Adult Cystic Fibrosis Benchmarking Project
 CF Foundation
 \$22, 103
 Role: PI, 10%; This grant supports Dr. Boyle as leader of the Cystic Fibrosis Foundation's National Adult CF Quality Improvement and Benchmarking Effort.

7/07 - 6/09 A Phase 2a, Randomized, Double-Blind, Placebo-Controlled Study of VX-770 to Evaluate Safety, Pharmacokinetics, and Biomarkers of CFTR Activity in Cystic Fibrosis (CF) Subjects with Genotype G551D (VX06-770-101); Phase 2a study of VX-770
 VX06-770-101
 Vertex Pharmaceuticals
 \$112,510
 Role: PI, 4%

8/1/08 - 7/31/10 Molecular Phenotyping for Cystic Fibrosis Lung Disease
 R01 (Subcontract 5-51359)
 NIH/NHLBI
 \$99,858
 PI: Knowles,
 Role: Co-Investigator, 10%; This grant will support the collection and analysis of respiratory epithelium from CF patients with particularly mild and severe lung disease.

9/08 - 8/09 A Phase I/II Randomized, Double-Blind, Placebo-Controlled, Single-Dose, Dose Escalation Study of KB001 in Cystic Fibrosis Patients Infected with Pseudomonas aeruginosa.
 KaloBios Clinical Trials Contract
 KaloBios Pharmaceuticals
 \$51,378
 Role: PI, 4%

5/1/09 - 4/30/10 A Randomized, Double-Blind, Placebo-Controlled, Multiple Dose Study of VX-809 to Evaluate Safety, Pharmacokinetics, and Pharmacodynamics of VX-809 in Cystic Fibrosis Subjects Homozygous for the DF508-CFTR Gene Mutation; VX-809 Study
 VX08-809-101
 Vertex Pharmaceuticals
 \$132,281
 Role: PI, 6%

8/1/09 - 7/31/11 A Randomized, Double-Blind, Placebo-Controlled, Multiple Dose Study of VX-770 to Evaluate Efficacy and Safety of VX-770 in Cystic Fibrosis Subjects with the G551D CFTR Gene Mutation; VX-770 Study
 VX08-770-102

	Vertex Pharmaceuticals \$163,324 Role: PI, 15%
12/1/09 - 11/30/10	Identifying & Implementing Key Practices to Improve National Adult CF Outcomes BOYLE09QI0 Cystic Fibrosis Foundation \$54,000 Role: PI, 20%; Supported the conduct of a National Adult CF Quality Improvement Initiative
8/1/10 -07/31/12	An Open Label Study of VX-770 to Evaluate Efficacy and Safety of VX-770 in Cystic Fibrosis Subjects with the G551D CFTR Gene Mutation, VX-770 Study VX08-770-105 Vertex Pharmaceuticals \$123,000 Role: PI, 5%
9/20/08 - 7/31/14	A Phase II Study of Digitoxin in Individuals with Cystic Fibrosis R01FD003456 US FDA \$750,000 PI: Zeitlin, P Role: Co-investigator, 5%
7/1/10 - 12/30/14	A Phase 3, randomized, Double-Blind, Placebo-Controlled Study of ivacaftor in subjects 6 years of age and older with Cystic Fibrosis and a R117H CFTR mutation; Phase III Study VX-770-110 Vertex Pharmaceuticals \$127,000; Role: PI, 5%;
12/1/10 - 11/30/14	A Randomized, Double-Blind, Placebo-Controlled, Multiple Dose Study of VX-809 to evaluate safety, pharmacokinetics, and pharmacodynamics of VX-809 in Cystic Fibrosis subjects homozygous for the DF508-CFTR gene mutation Multi-dose Study of VX-809 VX08-809-102 Vertex Pharmaceuticals \$342,281, Role: PI, 10%
1/1/13 - 12/31/14	A Phase 3, Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study to evaluate the efficacy and safety of lumacaftor and Ivacaftor in subjects with Cystic Fibrosis who have the F508del CFTR mutation; Study of VX-809 VX08-809-103 Vertex Pharmaceuticals \$198,000 Role: PI, 10%
7/1/12 - 3/30/15	A Phase 3, two-arm, rollover study to evaluate the safety of long-term Ivacaftor treatment in subjects 6 years of age and older with Cystic Fibrosis and a R117H CFTR mutation, Phase III VX-770-112 Vertex Pharmaceuticals \$123,000 Role: PI, 5%
11/1/13 - 3/30/15	A Phase 3, Rollover Study to Evaluate the Safety and Efficacy of Long-term Treatment With Lumacaftor in Combination With Ivacaftor in Subjects Aged 12 Years and Older With Cystic Fibrosis, Homozygous or Heterozygous for the F508del-CFTR mutation; Study of VX-809

VX08-809-105
Vertex Pharmaceuticals
\$434,681
Role: PI, 15%

1/1/14 - 3/30/15 Therapeutic Development Network Grant, Chairman Award
Cystic Fibrosis Foundation
\$175,810
Role: PI, 30%

Research Program Building/Leadership

2000-2015 Co-Director: Johns Hopkins Site, National Cystic Fibrosis Therapeutic Development Network
2001-2004 Member, Cystic Fibrosis Foundation Therapeutic Development Network Publications Committee
2003-2015 Member, Cystic Fibrosis Foundation Therapeutic Development Network Steering Committee [2003-2006, 2010-2015]
2004-2010 Member, Cystic Fibrosis Foundation Therapeutic Development Network Protocol Review Committee
2012-2013 Vice-Chairman, Cystic Fibrosis Foundation Therapeutic Development Network Steering Committee
2013- 2015 Chairman, Cystic Fibrosis Foundation Therapeutic Development Network Steering Committee

EDUCATIONAL ACTIVITIES

Educational Publications

Case Reports

1. **Boyle MP.** Advanced Studies in Medicine, Vol 9, (1). Case Study: A Young Man with “Mild” Cystic Fibrosis, 2009.
2. Dezube R, Terry P, Akulian J, Mathai SC, **Boyle M**, Khasab T, Yarmus L. Chronic expanding hematoma of the lung. Am J Respir Crit Care Med. 188:e71, 2013.

Book Chapters

1. Merlo CA, **Boyle MP.** Adult Cystic Fibrosis. In *The Osler Handbook of Inpatient Medicine*. Mosby Inc. Philadelphia, PA. 2003.

Letters, Correspondence

1. **Boyle MP**, Orens JB. Distal Intestinal Obstruction Syndrome after Surgery in Cystic Fibrosis. *Chest* 124:2408-9, 2003.
2. Lechtzin N, Merlo CA, **Boyle MP.** Author's Reply. *Respiration*. 74:357, 2007.
3. **Boyle MP.** Joint Problems and Cystic Fibrosis—Reply. *JAMA* 299:408, 2008.

Other Media

1. **Boyle MP.** “Aerosolized Antibiotics: Case Studies in Optimizing Outcomes and Managing Compliance,” CME CD-ROM, Program Director, *Johns Hopkins University School of Medicine Continuing Education*, August 2000.
2. **Boyle MP.** “Aerosolized Antibiotics in Lung Transplantation: Case Studies” CME CD-ROM, Program Director, *Johns Hopkins University School of Medicine Continuing Education*, May 2002.
3. Merlo CA, **Boyle MP.** “Cystic Fibrosis.” On Johns Hopkins Genomics Program website at www.Hopkins-genomics.org, 2002.
4. **Boyle MP.** “Pregnancy and CF,” Article on MyCysticFibrosis.com website, 2005.
5. **Boyle MP.** “Highlights from NACFC 2005.” Article on MyCysticFibrosis.com website, 2005.
6. **Boyle MP.** “Considering Having Children?” Article on MyCysticFibrosis.com website, 2005.
7. **Boyle MP.** “The Changing Face of Cystic Fibrosis.” Newsweek’s Weekly National Radio Show. Sept 4, 2005.
8. **Boyle MP.** “Thinking about having Children?” Educational Booklet Published by the Cystic Fibrosis Foundation, Bethesda, MD. 2006
9. **Boyle MP.** “Transition from Pediatric to Adult Care: It’s a Transition for Parents As Well!” Article on MyCysticFibrosis.com website, 2007.
10. **Boyle MP**, Dasenbrook E. Emerging Pathogens in Cystic Fibrosis. *eCysticFibrosis Review* Vol 1:4, Nov 2008.
11. **Boyle MP**, Clancy JP, Riekert K. Optimizing Patient Outcomes: Clinical Use of the Cystic Fibrosis Pulmonary Guidelines. Johns Hopkins Advanced Studies in Medicine, 2009.

Other Media (Internet Educational Programs)

- 2008-2015 Program Director and Editor, eLiterature Review – bimonthly Cystic Fibrosis Literature review. <http://www.hopkinscme.net/ofp/eCysticFibrosisReview/newsletters.html>
- 2009 Ahead of the Curve: Emerging CF Therapies 2009. <http://www.hopkinscme.edu/ofp/eCysticFibrosisReview/nacfc/index.html>
- 2010 Ahead of the Curve: Cystic Fibrosis Genetics Revolution. http://www.hopkinsamd.org/AOTC_eCFS/index.html
- 2010 Ahead of the Curve: CF Summit. <http://aotc-cf.reg.meeting-stream.com/1202enduring/>
- 2011 Ahead of the Curve: Genetics Revolution for the CF Care Team. <https://dkb.edmeasures.com/modules/dkb/index.html.php>
- 2012 The Pulmonary Personalized Medicine Challenge. <http://pulmonarychallenge.org/>
- 2012 Ahead of the Curve: Inside CFTR – 3D Educational Experience. <http://aotc-insidecfr.org/>

Teaching

Classroom instruction

- 1999-2006 Small group leader, Pulmonary Anatomy Discussion Groups, Johns Hopkins School of Medicine
- 1999-2008 Small group leader, Pulmonary Pathophysiology Discussion Groups, Johns Hopkins School of Medicine
- 2011-present Lecturer, Genes to Society Medical School Course, Cystic Fibrosis Section

Clinical instruction

- 1994-1996 Clinical Skills: Instructor, Johns Hopkins School of Medicine
- 1999-present Adult Cystic Fibrosis: Epidemiology, Diagnosis and Management,” Ongoing monthly presentation to Osler housestaff rotating on pulmonary floor.
- 1999-present Instructor, Medicine Residents CASE rotation - Adult Cystic Fibrosis Clinic
- 1999-present Instructor, Pulmonary Fellow Clinic Rotation - Adult Cystic Fibrosis Clinic
- 2002-present Instructor, University of Maryland School of Genetic Counseling

CME instruction

- 7/21-25/07: Course Director, Johns Hopkins Update in Pulmonary and Critical Care Medicine, Williamsburg, VA, 2008
Course Director: “Optimizing Patient Outcomes: Clinical Use of the Cystic Fibrosis Pulmonary Guidelines,” Johns Hopkins Advanced Studies in Medicine.
- 8/1-5/08: Course Director, Johns Hopkins Update in Pulmonary and Critical Care Medicine, Washington, DC,
- 8/1-5/09: Course Director, Johns Hopkins Update in Pulmonary and Critical Care Medicine, Bar Harbor, ME,

Mentoring

Advisees

- 2000 Zareen Farukhi, M.D. Medical Student Research: “Strategies for Improving Transition to Adult Cystic Fibrosis Care. “ Currently Pediatrician, University of Washington
- 2000-2003 Raymond Enke, M.S. Research Assistant. Research Topic: Gene Therapy. Currently Ph.D Faculty Member at University of Virginia.
- 2001-2005 Christian Merlo, M.D. Pulmonary Fellowship Research Training: Outcomes of CF patients with Resistant Pseudomonas. Bauernschmidt Research Award Winner, Shwachman Award Winner. Currently Assistant Professor of Medicine, Johns Hopkins Division of Pulmonary and Critical Care Medicine. Recognized by ACCP as top 25 young investigator, 2005.
- 2002-2005 Kristin Riekert, PhD. (Co-sponsor of NRSA: “Adherence Behaviors in Adults with Cystic Fibrosis” as fellow, Currently Associate Professor of Medicine, Pulmonary and Critical Care Medicine, Johns Hopkins
- 2002-2004 Suzanne McClaughlin, M.D. Robert Wood Johnson Fellowship Awardee: “Transition of Care from Pediatric to Adult CF Care,” Received MPH. Currently Assistant Professor of Pediatrics, Boston University School of Medicine.
- 2003 Uzelia Louis-Jacque, Minority College Student Program. Currently Internist, Baltimore, MD.
- 2005 Vasthie Prudent, Minority College Student Program. Currently MD PhD Student at NYU.
- 2006-2009 Elliott Dasenbrook, M.D., M.H.S. Pulmonary Fellowship Research Training: Awarded CF Foundation Fellowship Training Grant 2007-2009. Awarded CF Shwachman Award 2011-2014. Currently Associate Professor, Case Western University School of Medicine.

- 2008-2012 Natalie West, M.D., M.H.S. Pulmonary Fellowship Research Training: Co-sponsor NRSA Award. Awarded CF Shwachman Award 2013-2015. Currently Assistant Professor, Johns Hopkins University School of Medicine.
- 2011-present Mark Jennings, M.D. Pulmonary Fellowship Research Training: Awarded CF Foundation Fellowship Training Grant 2012-2013., National Research Service Award (NRSA) 2012-2014.
- 2014-present Rebecca Dezube, M.D. Pulmonary Fellowship Research Training. National Research Service Award (NRSA) 2015-2017.

Thesis Committees

- 2009 Jung Soo Suk, Ph.D. Johns Hopkins School of Engineering. "The penetration of fresh, undiluted sputum expectorated by cystic fibrosis patients by non-adhesive polymer nanoparticles", Dissertation Committee Member.
- 2010 Lindsay Henderson, Ph.D. Johns Hopkins Genetics Program. "Genetic modifiers of cystic fibrosis pulmonary and intestinal phenotypes", Dissertation Committee Member.

Training Grant Participation

- 7/1/99 - 6/30/18 Multidisciplinary Training Program in Lung Diseases.
NIH/NHLBI
T32 HL 07534,
\$6,431,304
PI: Robert A. Wise, MD
Role: Member of Advisory Council, Director of Participant Recruiting

Educational Program Building/Leadership

- 2002-2004 Chairman, CF Foundation National Patient and Family Education Committee
- 2004- 2010 Member, Department of Medicine Intern Selection Committee
- 2005-2015 Director of Education, Johns Hopkins Division of Pulmonary & Critical Care Medicine.
- 2005-2011 Director, Pulmonary and Critical Care Fellowship Recruiting
- 2010-2013 Director, Carol Johns Service Medical Resident Pulmonary Rotation

Educational Extramural Funding None

CLINICAL ACTIVITIES

Certification

Medical, state

1994 -Present: Medical License, State of Maryland (D46141)

Boards, specialty certification

1994 - 2004: Certified, American Board of Internal Medicine (154820)

1999 - Present: Certified, Specialty Board of Pulmonary Medicine (154820)

Clinical Service Responsibilities

1999-2015 Staff the over 800 outpatient Adult CF visits and 120 inpatient admissions annually by conducting two weekly clinics and rounding on inpatients. Also manage three full-time cystic fibrosis clinical nurses and a social worker. In addition attend three months per year on pulmonary consultation and lung transplantation services.

2015 Attend in Adult Cystic Fibrosis Clinic Weekly, Mentor CF Clinical Team in Weekly Meetings. Cover the Johns Hopkins general pulmonary and critical care service 4 weekends per year.

Clinical Program Building/Leadership

- 1999 -2015: Director, Johns Hopkins Adult Cystic Fibrosis Program. Established, developed and now direct the Johns Hopkins Adult CF Program, one of the largest and best-known programs in the United States.
- 2010 -2013: Director, Carol Johns Pulmonary Service

Clinical Extramural Funding

- 7/1/05-3/30/15 C052: Adult CF Clinical Center Grant
Cystic Fibrosis Foundation
\$1,140,000
Co-PIs: Boyle MP, Mogayzel PJ; This grant supports the clinical activity of the Johns Hopkins Adult and Pediatric Cystic Fibrosis Programs
- 12/1/10 - 11/30/15 Improving Adult Cystic Fibrosis Social Work Support and Training at the Johns Hopkins Adult Cystic Fibrosis Program
BOYLEBEF1
Boomer Esiason Foundation:
\$358,057
Role: PI, no salary support; This grant pays for a full time social worker to aid in the clinical care of adults with Cystic Fibrosis cared for at the Johns Hopkins Adult CF Program

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation and Quality Improvement Publications

1. **Boyle MP**, Singh C, Sabadosa K, Haase J, Hollon K, Lester MK, Quinton H. The Adult CF Benchmarking Project: What Have We Learned? *Pediatric Pulmonology* 30:165-167, 2007.
2. **Boyle MP**. "Using the Tools We Have Now to Improve Cystic Fibrosis Outcomes", North American CF Conference Plenary Address, 2007, <http://www.cff.org/research/NACFC/2007NACFC/>.
3. **Boyle MP**, Sabadosa KA, Quinton HB, Marshall BC, Schechter MS. Key Findings of the Cystic Fibrosis Foundation's U.S. Clinical Practice Benchmarking Project. *BMJ Quality and Safety*. 23:i15-i22, 2014. PMID: 24608546.

System Innovation and Quality Improvement within JHMI:

- 2006-2009 Member, Nelson 4 Safety and Quality Improvement Team
2012 Co-chair, Environment Focus Group, Division of Pulmonary and Critical Care Medicine

System Innovation and Quality Improvement/ Leadership outside of JHMI:

- 2006-2008 **Chairman**, Cystic Fibrosis Foundation National Adult Cystic Fibrosis Benchmarking Project. Identified, visited and assessed clinical practice patterns in the top ten performing Cystic Fibrosis Clinical Care Centers Nationwide
- 2008-2010 **Member**, American Thoracic Society Task Force on Quality Improvement

System Innovation and Quality Improvement Extramural Funding:

- 7/1/07 - 6/30/08 The National Adult Cystic Fibrosis Benchmarking Project
CF Foundation Grant
BOYLE07QI0
\$22,103
Role: PI, 10%; This grant supported Dr. Boyle as leader of the Cystic Fibrosis Foundation's National Adult CF Quality Improvement and Benchmarking Effort.
- 12/1/09-11/30/10 Identifying & Implementing Key Practices to Improve National Adult CF Outcomes
Cystic Fibrosis Foundation
BOYLE09QI0
\$54,000

Role: PI, 10%; This grant supported the conduct of a National Adult CF Quality Improvement Initiative

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2002 - 2005 Johns Hopkins Pulmonary Division Clinical Practices Working Group
2002 - 2005 Johns Hopkins Pulmonary Division Committee for Academic Faculty Career Development; Leader: Gender and Diversity Sub-group.
2005 - present Director of Education, Pulmonary and Critical Care Medicine
2004 - 2010 Department of Medicine Intern Selection Committee
2005 - 2011 Director, Pulmonary and Critical Care Fellowship Recruitment
2010 - 2013 Director, Carol Johns Service Medical Resident Pulmonary Rotation

Editorial Activities

Editorial Board appointments

2003-2009 Member, CF Foundation Therapeutic Development Network Publications Committee
2008-2011 Editor, Current Opinions in Pulmonary Medicine – Cystic Fibrosis Section.
2008 to present Editor, eCysticFibrosis Review Newsletter. Bimonthly Cystic Fibrosis Literature Review

Journal Reviewer

2003-present *Chest*
2005-present *American Journal of Respiratory and Critical Care Medicine*
2006-present *Proceedings of American Thoracic Society*
2006-present *Molecular Therapy*
2009 *Expert Opinion in Pharmacotherapy*
2009 *BMC Genetics*
2009 *BMC Medicine*
2010 *Journal of Medical Case Reports*
2011 *BMC Pulmonary Medicine*
2011 *International Journal of Endocrinology*
2012 *Journal of Translational Medicine*

Advisory Committees/ Review Groups/Study Sections

1999: Member, Cystic Fibrosis Foundation Consensus Committee on Care of Adults with Cystic Fibrosis
2002 - 2003 Member, Cystic Fibrosis Foundation Consensus Committee on Bone Health in Cystic Fibrosis
2002 - 2004 Chairman, Cystic Fibrosis Foundation National Committee on Patient and Family Education. Was the inaugural chairman of this committee created by the CF Foundation to review and develop nationally standardized CF educational material
2002 - 2005 Member, Cystic Fibrosis Therapeutic Development Network Publications Committee
2003 - 2006 Member, Steering Committee, Cystic Fibrosis Therapeutic Development National Network. 60 center network responsible for performance of national CF phase I-III trials.
2004 FDA *ad hoc* Study Section for Review of Orphan Drug Grant Applications
2004 - present Abstract Reviewer, Annual North American Cystic Fibrosis Conference
2004 - present *Ad hoc* Reviewer, Cystic Fibrosis Foundation Therapeutics Grant Review
2005 FDA Ad-Hoc Study Section for Review of Orphan Drug Grant Applications
2005 - 2010 Member, Cystic Fibrosis Foundation's Therapeutic Development Network Protocol Review Committee
2006 National Osteoporosis Society – Grant Reviews
2006 - 2008 Chairman, Cystic Fibrosis Foundation National Adult Benchmarking Project. Led national multi-disciplinary team in identifying and visiting the ten Adult CF Programs with the best clinical outcomes with the goal of determining practice patterns that result in best Adult CF outcomes.
2007 Physician Advisor, Social Security Administration, National Hearings on Establishing Guidelines for Disability in Cystic Fibrosis
2008 - 2010 Member, American Thoracic Society Task Force on Quality Improvement
2009 Member, Cystic Fibrosis Foundation Expert Panel for Developing Treatment Guidelines for Hemoptysis and Pneumothorax in Cystic Fibrosis.

- 2009 Italian Cystic Fibrosis Foundation - Grant Review.
- 2009 - present Member, North American Cystic Fibrosis Foundation Conference Planning Committee
- 2010 NIH (NIDDK) Study Section – Review of R24 Applications PAR-08-0181 – “Seeding Collaborative Interdisciplinary Team Science in Diabetes, Endocrinology and Metabolic Diseases”
- 2010 - 2015 Member, Steering Committee, Cystic Fibrosis Therapeutic Development National Network. 60 center network responsible for performance of national CF phase I-III trials.
- 2012 German Federal Research Ministry, Deutsche Forschungsgemeinschaft, Study Section - Review of Cystic Fibrosis Grant Submissions.
- 2012 - 2013 Vice-Chairman, Steering Committee, Cystic Fibrosis Therapeutic Development National Network. 74 center network responsible for performance of national CF phase I-III trials.
- 2012 - 2014 Member, Joint CFF-European CF Society Consensus Care Committee on clinical care guidelines for assessment and treatment of Mental Health Issues in CF
- 2013 - 2015 Chairman, Steering Committee, Cystic Fibrosis Therapeutic Development National Network. 74 center network responsible for performance of national CF phase I-III trials.

Professional Societies

- 1994 - 1999 American College of Physicians
- 1999 - 2006 Maryland Thoracic Society: Member
- 1999 - present American Thoracic Society: Member
- 1999 - present American College of Chest Physicians: Member

Member, Board of Directors

- 2002 - 2012: Cystic Fibrosis Services, Inc. (Subsidiary of the Cystic Fibrosis Foundation)

Conference Organizer, Session Chair

- 10/02 Chairman, Clinical Consultation Session, 2002 North American CF Meetings, New Orleans, LA
- 10/03 Chairman, Complicated Management Issues in CF Consultation Clinic, 2003 North American Cystic Fibrosis Meetings, Anaheim, CA
- 10/04 Chairman, Genetic Modifiers Session, 2004 North American Cystic Fibrosis Meetings, St. Louis, MO
- 10/04 Faculty, “Building an Adult Cystic Fibrosis Program,” Educational Program, 2004 North American Cystic Fibrosis Meetings, St. Louis, MO
- 10/05 Chairman, Endocrine and Bone Disease Session, 2005 North American Cystic Fibrosis Meetings, Baltimore, MD
- 10/05 Faculty, “What the Adult Physician Needs to Know about CF” Educational Program, 2005 North American Cystic Fibrosis Meetings
- 5/06 Faculty, “Advances in the Understanding and Treatment of Cystic Fibrosis in Adults,” 2006 American Thoracic Society Conference
- 10/06 Leader, Morning Breakfast Session, “Strategies for Maintaining Bone Health,” 2006 North American Cystic Fibrosis Meetings
- 11/06 Chairman, Endocrine and Bone Disease Session, 2006 North American CF Meetings, Denver CO
- 10/07 Chairman, Quality Improvement in CF Symposium, 2007 North American Cystic Fibrosis Meetings, Anaheim, CA
- 10/08 Honorary Chairman, 2008 North American Cystic Fibrosis Meetings, Orlando, FL
- 10/08 Chairman, Adult Pulmonary Fellow Case Session, 2007 North American CF Meetings, Orlando, FL
- 10/09 Chairman, Adult Pulmonary Fellow Case Session, North American CF Meetings, Minneapolis, MN
- 10/09 Program Planning Committee, 2009 North American Cystic Fibrosis Meetings, Minneapolis, MN
- 10/10 Chairman, Adult Pulmonary Fellow Case Session, North American CF Meetings, Baltimore, MD
- 10/10 Program Planning Committee, 2010 North American Cystic Fibrosis Meetings, Baltimore, MD
- 10/11 Chairman, Adult Pulmonary Fellow Case Session, North American CF Meetings, Anaheim, CA
- 11/11 Program Planning Committee, 2011 North American Cystic Fibrosis Meetings, Anaheim, CA
- 5/12 Symposium Chairman, 2012 American Thoracic Society Meetings, “Adult Cystic Fibrosis: The Essentials,” San Francisco, CA
- 5/12 Poster Session Chairman, 2012 American Thoracic Society Meetings, “New Therapies in Cystic Fibrosis,” San Francisco, CA
- 6/12 Chairman, Emerging Therapies Symposium, 2012 European Cystic Fibrosis Meetings, Dublin, Ireland
- 10/12 Symposium Chairman, Hot CF Issues: Pro/Con Debates. North American CF Meetings, Orlando, FL
- 10/12 Chairman, Adult Pulmonary Fellow Case Session, 2012 North American CF Meetings, Orlando, FL

- 6/13 Symposium Chairman, 2013 European Cystic Fibrosis Meetings, “The Organization of the CF Unit,” Lisbon, Portugal
- 10/13 Program Planning Committee, 2013 North American Cystic Fibrosis Meetings, Salt Lake City, UT.
- 10/14 Program Planning Committee, 2014 North American Cystic Fibrosis Meetings, Atlanta, GA.
- 5/15 Poster Session Moderator, Advances in CF, 2015 American Thoracic Society Meetings, Denver, CO

Consultantships

- 2004-2009 MyCysticFibrosis.com
- 2005-2006 Corus Pharma, Inc. (Inhaled Aztreonam Development)
- 2009-2012 Novartis Inc. (Inhaled Dry Powder Tobramycin Development)
- 2010-2012 Pharmaxis Pharmaceuticals (Inhaled Mannitol Development)
- 2010-2013 Vertex (CFTR modulation therapy)
- 2011-2013 Savara Pharmaceuticals (Inhaled Vancomycin Development).

RECOGNITION

Awards and Honors

- 1982 National Merit Scholarship, University of Maryland
- 1982 Chancellor's Scholarship, University of Maryland
- 1982 Honors Program Scholarship, University of Maryland
- 1990 Dean’s Research Award. Johns Hopkins School of Medicine
- 1991 Harold Lamport Award for Best Medical Student Biomedical Research, Johns Hopkins School of Medicine
- 1991 American Federation for Clinical Research Award
- 1996 Resident Teaching Appreciation Award, Greater Baltimore Medical Center
- 1999 Bauernschmidt Research Award, Johns Hopkins School of Medicine
- 2000 Shwachman Research Award, Cystic Fibrosis Foundation
- 2006 Alpha Omega Alpha (AOA), Johns Hopkins School of Medicine Chapter
- 2008 “Best Doctors in America” Selection (and again annually since then)
- 2008 George Comstock Career Achievement Award – American Lung Association
- 2008 Chairman, North American Cystic Fibrosis Conference
- 2012 Patients’ Choice Award
- 2012 Compassionate Doctor Award
- 2012 Kit Taylor Memorial Lecture, University of Rochester
- 2012 Osler Medicine House staff Teaching Award for Best Full-Time Faculty Teacher
- 2013 Fellows Teaching Award, Johns Hopkins Pulmonary and Critical Care Medicine, New York

Invited Talks

International

- 6/08 Invited Speaker: “The National U.S. Adult Cystic Fibrosis Quality Improvement/Benchmarking Project,” 2008 European Cystic Fibrosis Meetings, Prague, Czech Republic
- 9/08 Plenary Speaker: “The Results of the National U.S. Adult Cystic Fibrosis Quality Improvement / Benchmarking Project”, 2008 United Kingdom Cystic Fibrosis Trust Meetings, Manchester, England
- 11/08 Plenary Speaker: “Designing Your Cystic Fibrosis Care Program to Result in Best Patient Outcomes: Why and How,” 2008 German Cystic Fibrosis Society Annual National Meeting (Deutsche Mukoviszidose-Tagung), Wurzburg, Germany
- 1/09 Keynote Speaker: 40th Anniversary Celebration of the Netherlands Cystic Fibrosis Society. “Delivering the Best CF Care by Learning from Your Own and Other Centers,” Amsterdam, Netherlands
- 9/09 Speaker, “Preparing Your Child with CF to Transition to Adult CF Care,” 2009 Australian CF Parents and Family Conference, Brisbane, Australia
- 10/09 Featured Plenary Speaker: “Lessons Learned for the U.S. National CF Benchmarking Study,” 2009 Biannual Australasian Cystic Fibrosis Meeting, Brisbane, Australia
- 8/10 Guest Faculty, “Adult CF Care and Lung Transplantation”. Cystic Fibrosis Foundation Live Webcast - one hour broadcast internationally
- 12/11 Conference Speaker: “Resistant Organisms in Cystic Fibrosis,” 2011 Israeli Cystic Fibrosis Meetings, Ein Gedi, Israel.
- 12/11 Conference Speaker: “Taking Care of Adults with Cystic Fibrosis,” 2011 Israeli CF Meetings, Ein Gedi, Israel.

- 12/11 Family Day Speaker: "Preparing Your Teen with CF to be a Successful Adult with CF" Hadassah Hospital Family Day, Jerusalem, Israel.
- 2/11 Symposium Speaker: "Use of the National CF Registry to Improve CF Clinical Care," Irish Cystic Fibrosis Meetings, Killarney, Ireland
- 6/11 Symposium Speaker: "Using Benchmarking to Encourage Continuous Quality Improvement at Cystic Fibrosis Centers," European CF Center Quality Improvement Symposium, 2011 European Cystic Fibrosis Society Meetings, Hamburg, Germany
- 6/12 Symposium Speaker: "Emerging Therapies Addressing CFTR Dysfunction," 2012 European Cystic Fibrosis Meetings. Dublin, Ireland
- 1/13 International Webcast Faculty Presentation: "Results from the Vertex VX-809-102 Trial," 2013 CF Unite Educational Day, London, UK
- 1/13 Boyle M, Bell S, Konstan M, McColley S, Flume P, Kang L, Wu Y, Waltz D, Patel N for the VX09-809-102 Study Group. Lumacaftor, an investigational CFTR corrector, in combination with Ivacaftor, a CFTR potentiator, in CF patients with the F508Del-CFTR mutation. *Journal of Cystic Fibrosis* 12;S1:S14. (Presented by Michael Boyle at European CF Meetings 2013)
- 6/13 Symposium Speaker: "Correcting and Potentiating CFTR," 2013 European Cystic Fibrosis Meetings. Lisbon, Portugal
- 6/13 Symposium Speaker: "Quality Control: The Role of Peer Review," 2013 European Cystic Fibrosis Meetings. Lisbon, Portugal
- 6/14 "Update on CFTR Correctors", European CF Conference Symposium Lecture, Gothenburg, Sweden

National

- 6/99 "Current Demographics of Adult Cystic Fibrosis" Presentation to Cystic Fibrosis Foundation Consensus Committee on Care of the Adult Cystic Fibrosis Patient, Washington, DC
- 3/00 "Caring for Adults with Cystic Fibrosis: A New Challenge for the New Millennium," Maryland Thoracic Society Address, Baltimore, MD
- 4/00 "Transitioning and Caring for the Adult Cystic Fibrosis Patient," Washington D.C. Symposium: Cystic Fibrosis in the Next Millennium
- 5/01 "Genomics and Cystic Fibrosis:" NIH Program for Genomic Applications (PGA) Lecture Series
- 11/01 "Evidence Based Approach to Treatment of COPD," VHA Southeast Pneumonia and COPD Forum, Orlando, FL
- 1/02 "Adult Cystic Fibrosis Clinical Research Update," New York State Thoracic Society Address, West Point, NY
- 3/03 "Pregnancy and Cystic Fibrosis," Children's National Medical Center Pulmonary Division Grand Rounds, Washington DC
- 4/03 "Update in Cystic Fibrosis Clinical Care and Research," NYU/ Bellevue Hospital Pulmonary Grand Rounds, New York, NY
- 12/03 "Genetics of Cystic Fibrosis: What have we learned since discovery of the gene?" A.I Dupont Hospital for Children Grand Rounds
- 3/04 "Adult Cystic Fibrosis," National Naval Medical Center Medical Grand Rounds, Washington, DC
- 4/04 "Meet the Professor: Practical Steps to Implementing Infection Control Measures at a Cystic Fibrosis Center." Society for Hospital Epidemiologists of America National Meeting
- 11/04 "Incorporating Clinical Research into an Adult CF Program" North American Cystic Fibrosis Meetings,
- 5/05 "Update in Cystic Fibrosis Clinical Care and Research," Mt. Sinai Medical Center Pulmonary and Critical Care Grand Rounds, New York, NY
- 7/05 Understanding the Basis of Variability in Severity of CF Lung Disease," Stanford University Division of Pulmonary and Critical Care Medicine Lectureship, Palo Alto, CA
- 10/05 "Correlation of Serum Vitamin 25-OHD Levels and PTH levels in CF," North American Cystic Fibrosis Meetings
- 10/05 "Cystic Fibrosis, TIVADs, and Hypercoagulability," Physician Grand Rounds, North American Cystic Fibrosis Meetings
- 10/05 "Cystic Fibrosis and Bone Health," North American Cystic Fibrosis Meetings
- 10/05 "Implementing Infection Control Measures at a Cystic Fibrosis Center." North American Cystic Fibrosis Meetings
- 11/05 "Making the Adult with CF Part of their own Care Team," North American Cystic Fibrosis Meetings
- 2/06 Update in Cystic Fibrosis," Pinnacle Health Annual Pulmonary Symposium

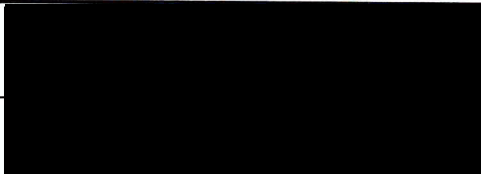
- 3/06 “When to Suspect and How to Diagnose Mild Cases of Cystic Fibrosis,” Maryland Thoracic Society Annual Scientific Session, Baltimore, MD
- 4/06 “CFTR Expression in CF Airway Epithelium: RNA and Protein Detection,” Cystic Fibrosis Foundation Therapeutic Development Network Annual Meetings, Seattle, WA
- 4/06 “The Johns Hopkins Adult CF Program Quality Improvement Initiative”, Learning and Leadership Collaborative IV, Cystic Fibrosis Foundation, Bethesda, MD
- 5/06 “Genotype and Phenotype Relationships in Cystic Fibrosis and How It Helps Us Recognize Mild Forms of Cystic Fibrosis,” American Thoracic Society Address, San Diego, CA
- 5/06 “Genotype/Phenotype Relationships and the Diagnosis of Atypical CF in Adults,” American Thoracic Society International Conference
- 6/06 “Effect of Resistant Pseudomonas on Clinical Outcomes in CF,” Cystic Fibrosis Foundation Annual Williamsburg Cystic Fibrosis Research Conference
- 6/06 “Multiple Antibiotic Resistant Pseudomonas Aeruginosa Infection: Risk Factors and Effect on CF Outcomes,” Cystic Fibrosis Foundation’s Annual National Williamsburg Scientific Meetings, Williamsburg, VA
- 10/07 Plenary Address: “Improving Outcomes Using the Tools that We Have Now,” North American Cystic Fibrosis Meetings, <http://www.cff.org/research/NACFC/2007NACFC/>
- 10/07 “The National Adult Benchmarking Initiative: What Have We Learned?” North American Cystic Fibrosis Meetings
- 4/08 What is the effect of Methicillin Resistant Staph Aureus on Cystic Fibrosis Lung Disease? Columbia University Adult Cystic Fibrosis National Symposium, New York, NY
- 4/09 “Cystic Fibrosis as a Model of Specialty Center Care,” National Ataxia-Telangiectasia Meetings, Baltimore, MD
- 5/09 “Results of the National Adult CF Benchmarking Project,” Annual Randall Ruprecht Lecture, University of California, San Francisco, San Francisco, CA
- 10/09 “Effect of VX-770 on Spirometry and Quality of Life,” 2009 North American Cystic Fibrosis Meetings, 2009 North American CF Meetings, Orlando, FL
- 11/09 “What’s New in Cystic Fibrosis?” Wake Forest University Medical Center Pulmonary Grand Rounds, Winston-Salem, NC
- 12/09 “Top 5 New Developments in Cystic Fibrosis,” Albany Medical Center Grand Rounds, Albany, NY
- 5/10 “Transition from Pediatric to Adult CF Care,” Cystic Fibrosis Learning Consortium, New York, NY
- 10/10 “Diagnosing Adults with Mild or Atypical CF,” 2010 North American Cystic Fibrosis Meetings, Baltimore MD
- 10/11 “Clinical Trial Design for MRSA in Cystic Fibrosis,” 2011 North American Cystic Fibrosis Meetings Anaheim, CA
- 10/11 “Results of Cohort 1 of the Phase II VX809-102 Trial,” 2011 North American Cystic Fibrosis Meetings, 2011 North American CF Meetings, Anaheim, CA
- 4/12 “Correlating Genotype and Phenotype in Cystic Fibrosis,” University of Florida Pediatric Pulmonary Symposium, University of Florida, Gainesville, FL
- 5/12 “The Future of Genotype Specific Therapy in Cystic Fibrosis,” Kit Taylor Memorial Lecture, University of Rochester Medical Center, Rochester, NY
- 5/12 “Recognizing and Diagnosing Late Manifestations of Cystic Fibrosis,” 2012 American Thoracic Society (ATS) Meetings, San Francisco, CA
- 7/12 Keynote Speaker: “CFTR Modulation Therapy: Who will Benefit?” Cystic Fibrosis Research Institute Annual Meetings, San Francisco, CA
- 10/12 “The Investigational CFTR Corrector, VX-809 (Lumacaftor) Co-Administered with the Oral Potentiator Ivacaftor Improved CFTR and Lung Function in F508DEL Homozygous Patients: Phase II Study Results.” Michael Boyle, Scott Bell, Michael Konstan, Susanna McColley, Lisa Kang, Naimish Patel, and David Rodman for the VX09-809-102 Study Group. *Pediatric Pulmonology* 47;S35:260, 2012, *Presented by Michael Boyle at North American CF Meetings 2012*
- 3/13 “The New Era of Cystic Fibrosis Therapeutics.” Albert Einstein/Beth Israel Hospital Medicine Grand Rounds: The Ann and Mort David Pulmonary Lecture. New York, NY.
- 4/13 University of Virginia Cystic Fibrosis Education Day: “The New Cystic Fibrosis Therapies – Who will benefit?” Charlottesville, VA.
- 12/13 “New Advances in Cystic Fibrosis Therapeutics.” Drexel University Pulmonary Grand Rounds. Philadelphia, PA.

- 2/14 “The Future of Cystic Fibrosis: Adult Care and Genotype Specific Therapy”, University of Arizona Winter Respiratory Lecture. Tucson, Arizona.
- 10/14 “Climbing the Mountain: The Journey to Delivering Transformational Cystic Fibrosis Therapeutics”. Opening Plenary Address, North American Cystic Fibrosis Conference, Atlanta, Georgia. Plenary available (starts at minute 36): https://www.nacfconference.org/art/2014_Plenary1.wmv
- 4/15 “The Future of Cystic Fibrosis: Genotype Specific Therapy”, VCU CF Family Education Day, Richmond, VA.
- 4/15 “The Journey to Delivering Transformational Cystic Fibrosis Therapeutics”, All Children’s Hospital, Tampa, FL.
- 5/15 “Managing Cystic Fibrosis to Prevent Lung Function Decline” , ATS 2015 Post-graduate Course, Denver Colorado.

Committee on Energy and Commerce
U.S. House of Representatives
Witness Disclosure Requirement - "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

1. Your Name: <u>MICHAEL P. BOYLE, M.D.</u>		
2. Your Title: <u>PROFESSOR OF MEDICINE, JOHNS HOPKINS VICE PRESIDENT THERAPEUTICS DEVELOPMENT, CYSTIC FIBROSIS FOUNDATION</u>		
3. The Entity(ies) You are Representing: <u>CYSTIC FIBROSIS FOUNDATION</u>		
4. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No <input checked="" type="checkbox"/>
5. Please list any Federal grants or contracts, or contracts or payments originating with a foreign government, that you or the entity(ies) you represent have received on or after January 1, 2013. Only grants, contracts, or payments related to the subject matter of the hearing must be listed. <u>None</u>		
6. Please attach your curriculum vitae to your completed disclosure form.		

Signature: _____



Date: _____

9/11/15