

CURRICULUM VITAE

Stephanie Duggins Davis, M.D.

EDUCATION:

- 1996-1999 James Whitcomb Riley Hospital for Children
Indiana University Medical Center
Director: Howard Eigen, M.D.
Fellowship: Pediatric Pulmonary
- 1993-1996 James Whitcomb Riley Hospital for Children
Indiana University Medical Center
Chairman: Richard Schreiner, M.D.
Residency: Pediatrics
- 1989-1993 Bowman Gray Medical School
Wake Forest University
Winston-Salem, North Carolina
Degree: Doctor of Medicine
May 17, 1993
- 1985-1989 University of North Carolina
Chapel Hill, North Carolina
Degree: Bachelor of Science in Biology
May 14, 1989

PROFESSIONAL EXPERIENCE:

- 2009-present Division Chief of Pediatric Pulmonology
University of North Carolina at Chapel Hill
Date of appointment: July 1, 2009
- 2007-present Fellowship Program Director
University of North Carolina at Chapel Hill
Date of appointment: July 1, 2007
- 2006-present Associate Professor of Pediatrics
University of North Carolina at Chapel Hill
Date of appointment: August 15, 2006
- 1999 - 2006 Assistant Professor of Pediatrics
University of North Carolina at Chapel Hill
Date of appointment: August 16, 1999

CERTIFICATION/LICENSURE:

Certification: Pediatric Pulmonology: certified: August 7, 2000 (#00610)
recertified: October 31, 2007

American Board of Pediatrics: certified, October 9, 1996 (#058486)
recertified: August 29, 2002

Diplomate, National Board of Medical Examiners: 1994, (#437274)

Licensure: North Carolina (#9900470) 1999- present
Indiana (#01044048) 1997-1999

HONORS AND AWARDS:

2009, 2010	Best Doctors University of North Carolina at Chapel Hill
2009	Academic Leadership Program University of North Carolina at Chapel Hill
2006	Society of Pediatric Research University of North Carolina at Chapel Hill
1998	Alpha Omega Alpha Indiana University School of Medicine
1997	Distinguished Residents and Fellows Asthma Education Scholarship Program London, England
1993	C.B. Deane Memorial Award Bowman Gray School of Medicine
1989	Phi Beta Kappa University of North Carolina at Chapel Hill
1987	Phi Eta Sigma (Freshman Honor Society) University of North Carolina at Chapel Hill

BIBLIOGRAPHY

Book Chapters:

1. Castile RG, **Davis, SD**. Pulmonary Function Testing in Children. In: Wilmott RW, Bush A, Ratjen F, Deterding R, Boat T, Chernick V, eds. *Kendig & Chernick's Disorders of the Respiratory Tract in Children*, 8th edition.
2. **Davis SD**, Pittman J. Lung Function Testing in Infants. In: Allen JA, Panitch HB, Rubenstein RC, eds. *Cystic Fibrosis*. New York: Informa Healthcare, 2010; 242: 123-147.
3. **Davis, SD**, Gappa, M, Rosenfeld, M. Respiratory Mechanics. Paediatric Pulmonary Function Testing. In: Hammer J, Eber E, eds. *Prog. Respir Res*, Basel, Karger, 2005; 33: 20-33.

Refereed Articles:

1. Pittman JE, Van Rie A, Davis SD. Spirometry in Biracial Children: How adequate are race-based reference equations? *Archives of Pediatric Adolescent Medicine*; 2011; in press.
2. Gillette CM, Loughlin CE, Sleath BL, Williams DM, **Davis SD**. Quality of Pulmonary Function Testing in Three Large Primary Care Pediatric Clinics in Rural North Carolina; *North Carolina Medical Journal*; 2011 in press

3. Rosenfeld M, **Davis S**, Brumback L, Daniel S, Rowbotham R, Johnson R, McNamara S, Jensen R, Ratjen F. Inhaled Hypertonic Saline in Infants and Toddlers with Cystic Fibrosis: Short-Term Tolerability, Adherence and Safety. *Pediatric Pulmonology*; 2011, in press
4. Sleath B, Ayala G, Gillette, C, Williams D, **Davis S**, Tudor G, Yeatts K, Washington D. Provider demonstration and assessment of child asthma device technique during pediatric asthma visits. *Pediatrics*; 2011; in press.
5. Olin JT, Burns K, Carson JL, Metjian H, Atkinson JJ, **Davis SD**, Dell, SD, Ferkol TW, Milla CE, Olivier KN, Rosenfeld M, Baker B, Leigh MW, Knowles MR, Sagel SD for the Genetic Disorders of Mucociliary Clearance Consortium. Diagnostic Yield of Nasal Scrape Biopsies in Primary Ciliary Dyskinesia: A Multicenter Experience. *Pediatric Pulmonol*; 2011 Jan 31; in press. [Epub ahead of print]
6. Sleath B, Ayala GX, Washington D, **Davis S**, Williams D, Tudor G, Yeatts K, Gillette C. Caregiver rating of provider participatory decision-making style and caregiver and child satisfaction with pediatric asthma visits. *Patient Educ Couns*. 2010 Oct 22. [Epub ahead of print]
7. Pittman J, Calloway E, Kiser M, Yeatts J, **Davis S**, Drumm ML, Schechter M, Leigh M, Edmond M, Van Rie A, Knowles M. Age of *Pseudomonas aeruginosa* Acquisition and Subsequent Severity of Cystic Fibrosis Lung Disease. *Pediatric Pulmonol*; 2010; Dec 30. [Epub ahead of print]
8. **Davis, SD**, Ferkol T; Hitting the target: new treatments for cystic fibrosis *Am J Respir Crit Care Med* 2010; in press.
9. **Davis SD**, Rosenfeld M, Kerby GS, Brumback L, Kloster MH, Acton JD, Colin AA, Conrad CK, Hart MA, Hiatt PW, Mogayzel PJ, Johnson RC, Wilcox SL, Castile RG; Multicenter Evaluation of Infant Lung Function Tests as Cystic Fibrosis Clinical Trial Endpoints; *Am J Respir Crit Care Med* 2010; in press.
10. Sleath B, Ayala G, **Davis S**, Williams D, Tudor G, Yeatts K, Washington D, Gillette C; Child and caregiver reported problems and concerns in using asthma medications; *Journal of Asthma*; 2010, in press.
11. Borowitz D, Parad RB, Sharp JK, Sabadosa KA, Robinson KA, Rock MJ, Farrell PM, Sontag MK, Rosenfeld M, **Davis SD**, Marshall BC, Accurso FJ. Cystic Fibrosis Foundation Practice Guidelines for the Management of Infants with Cystic Fibrosis Transmembrane Conductance Regulator-Related Metabolic Syndrome During the First Two Years of Life and Beyond. *J Pediatr* 2009;155:S106-16.
12. Borowitz D, Robinson KA, Rosenfeld M, **Davis SD**, Sabadosa KA, Spear SL, Michel SH, Parad RB, White TB, Farrell PM, Marshall BC, Accurso FJ. Cystic Fibrosis Foundation Evidence-Based Guidelines for Management of Infants with Cystic Fibrosis. *J Pediatr* 2009;155:S73-93.
13. Stanojevic S, Wade A, Cole TJ, Lum S, Custovic A, Silverman M, Hall GL, Welsh L, Kirkby J, Nystad W, Badier M, **Davis S**, Turner S, Piccioni P, Vilozni D, Eigen H, Vlachos-Mayer H, Zheng J, Tomalak W, Jones M, Hankinson JL, Stocks J. Spirometry Centile Charts for Young Caucasian Children: The Asthma UK Collaborative Initiative. *Am J Respir Crit Care Med* 2009; Sep 15;180(6):547-52
14. Leigh MW, Pittman JE, Carson JL, Ferkol TW, Dell SD, **Davis SD**, Knowles MR, Zariwala MA. Clinical and Genetic Aspects of Primary Ciliary Dyskinesia/Kartagener Syndrome; *Genetics in Medicine* 2009, Jul 11 (7): 473-87.

15. Peterson-Carmichael S, Harris WT, Goel R, Noah TL, Johnson R, Leigh M, **Davis SD**. The Association of Lower Airway Inflammation with Physiologic Findings in Young Children with Cystic Fibrosis; *Pediatr Pulmonol* 2009, May;44(5):503-11.
16. **Davis SD**, Ratjen F. Reduced Lung Function in Cystic Fibrosis: A primary or secondary phenotype? (editorial); *Am J Respir Crit Care Med* 2008; 178 (1): 2-3.
17. **Davis S**, Aurora P, Eigen H, Beydon N, Lombardi E on behalf of the ATS/ERS Working Group on Infant and Young Children Pulmonary Function Testing. Quality Control for Spirometry in Preschool Children (author correspondence); *Am. J. Respir. Crit. Care Med.*, Jul 2008; 178: 107 - 108.
18. Dellon EP, Donaldson SH, Johnson R, **Davis SD**. Safety and Tolerability of Inhaled Hypertonic Saline in Young Children with Cystic Fibrosis; *Pediatr Pulmonol.* 2008; Nov;43(11):1100-6.
19. **Davis SD**. Johnson RC, Flucke RL, Kisling JA, Myers TR. AARC Clinical Practice Guideline: Infant/Toddler Pulmonary Function Tests; *Respiratory Care.* 2008, July 53 (7): 929-945.
20. Brown DE, Pittman JE, Leigh MW, Fordham L, **Davis SD**. Early Lung Disease in Young Children with Primary Ciliary Dyskinesia; *Pediatr Pulmonol.* 2008; 2008 May;43(5):514-6.
21. Esther CR, Alexis NE, Clas ML, Lazarowski ER, Donaldson SH, Pedrosa Ribeiro CM, Moore CG, **Davis SD**, Boucher RC. Extracellular Purines are Biomarkers of Neutrophilic Airway Inflammation. *Eur Respir J.* 2008 May;31(5):949-56.
22. **Davis SD**, Brody AS, Emond MJ, Brumback LC, Rosenfeld M. Endpoints for Clinical Trials in Young Children with Cystic Fibrosis. *Proceedings of the American Thoracic Society* 2007; Aug 1;4(4):418-30.
23. Beydon N; **Davis SD**; Lombardi E; Allen JL, Arets HGM, Aurora P, Bisgaard H, Davis GM, Ducharme F, Eigen H, Gappa M, Gaultier C, Gustafsson PM, Hall GL, Hantos Z, Healy MJR, Jones MH, Klug B, Lodrup Carlsen KC, McKenzie SA, Marchal F, Mayer OH, Merkus PJFM, Morris MG, Oostveen E, Pillow JJ, Seddon PC, Silverman M, Sly PD, Stocks J, Tepper RS, Vilozni D, Wilson NM, on behalf of the ATS/ERS Working Group on Infant and Young Children Pulmonary Function Testing. An Official American Thoracic Society/European Respiratory Society Statement: Pulmonary Function Testing in Preschool Children. *Am J Respir Crit Care Med* 2007; 175: 1305-1345.
24. **Davis, SD**, Fordham, LA, Noah, TL, Retsch-Bogart, GZ, Qaqish, B, Yankaskas, BC, Johnson, RC, Leigh, MW. HRCT abnormalities reflect BALF inflammation and track changes in early CF. *Am J. Respir Crit. Care Med* 2007; 175(9):943-50.
25. Saito J, Harris T, Gelfond J, Noah T, Leigh M, Johnson R, **Davis S**. Physiologic, Bronchoscopic and Bronchoalveolar Lavage Fluid Findings in Young Children with Recurrent Wheeze and Cough. *Pediatr Pulmonol.* 2006; 41: 709-719.
26. The ATS/ERS Working Group on Infant and Young Children Pulmonary Function Testing Consensus Statement. (Member). Raised volume forced expirations in infants: guidelines for current practice. *Am J Respir Crit Care Med.* 2005; 172: 1463-1471.
27. Jones M, Howard J, **Davis S**, Kisling J, Tepper R. Sensitivity of Spirometric Measurements to Detect Airway Obstruction in Infants. *Am. J. Respir. Crit. Care Med.* 2003; 167: 1283-1286.
28. Goldstein A, Castile R, **Davis S**, Filbrun D, Flucke R, McCoy K, Tepper R. Bronchodilator Responsiveness in Normal Infants and Young Children. *Am J Respir Crit Care Med.* 2001; 164: 447-454.

29. **Davis S**, Jones M, Kisling J, Howard J, Tepper R. Comparison of normal infants and infants with cystic fibrosis using forced expiratory flows breathing air and heliox. *Pediatr Pulmonol.* 2001; 31(1): 17-23.
30. Jones M, **Davis S**, Kisling J, Howard J, Castile R, Tepper R. Flow Limitation in Infants Assessed by Negative Expiratory Pressure. *Am J Respir Crit Care Med.* 2000; 161: 713-717.
31. Jones M, Castile R, **Davis S**, Kisling J, Filbrun D, Flucke R, Goldstein A, Emsley C, Ambrosius W, Tepper R. Forced Expiratory Flows and Volumes in Infants: Normative Data and Lung Growth. *Am J Respir Crit Care Med.* 2000; 161: 353-359.
32. **Davis S**, Jones M, Kisling J, Castile R, Tepper R. Density Dependence of Forced Expiratory Flows in Healthy Infants and Toddlers. *J Appl. Physiol.* 1999; 87(5): 1796 - 1801.
33. Tepper RS, Jones M, **Davis S**, Kisling J, and Castile R. Rate Constant for Forced Expiration Decreases with Lung Growth During Infancy. *Am J Respir Crit Care Med.* 1999; 160: 835-838.
34. Jones MH, **Davis SD**, Grant D, Christoph K, Kisling J, Tepper RS. Forced Expiratory Maneuvers in Very Young Children Assessment of Flow Limitation. *Am J Respir Crit Care Med.* 1999;159:791-795.
35. **Davis S**, Jones M, Kisling J, Angelicchio C, Tepper RS. Effect of Continuous Positive Airway Pressure on Forced Expiratory Flows in Infants with Tracheomalacia. *Am J Respir Crit Care Med.* 1998;158:148-152.

Review Articles:

1. **Davis SD**, Pittman J. Measurement of Early Lung Disease in Children with Cystic Fibrosis. *eCysticFibrosis Review* January 2009 Volume 1, Issue 5.
2. **Davis SD**, Rosenfeld M. Using Diagnostic Tools in the Young Child: X-rays and Pulmonary Function. *Pediatr Pulmonol.* 2007, Suppl 30.
3. Dellon E, **Davis SD**. Catch Me If You Can. *ADVANCE for Managers of Respiratory Care.* 2007; 16 (6): 34.
4. Peterson-Carmichael, S, **Davis S**. Debunking the Myth. *ADVANCE for Managers of Respiratory Care.* 2007; 16(1): 63.
5. Rosenfeld M, **Davis SD**. Infant Pulmonary Function Tests as Outcome Measures for Clinical Trials. *Pediatr Pulmonol.* 2006; Suppl 29: S18.2.
6. **Davis, S**, Preschool Spirometry. *Pediatric Respiratory Review*, 2006, 7S, S11-S13.
7. **Davis, S**. Neonatal and Pediatric Respiratory Diagnostics. *Respiratory Care*, 2003; 48(4): 367-385.
8. **Davis S**. Clinical Utility of Heliox. *ADVANCE for Managers of Respiratory Care.* 2000; 9(5): 52-56.

Editor:

Guidelines for Preschool Lung Function Testing: Series of 8 papers submitted as one large manuscript to *Am J Respir Crit Care Med* (Refereed article 4):

Lung Function Testing in Preschool Children: The Next Frontier
 Clinical Implications of Pulmonary Function Testing in Preschool Children
 The Interrupter Technique in Preschool Children
 The Forced Oscillation Technique in Preschool Children
 Assessment of Tidal Breathing Parameters in Preschool Children
 Preschool Spirometry Guidelines

The Multiple Breath Inert Gas Washout (MBW) Technique in Preschool Children
Bronchial Responsiveness Tests in Preschool Children

Refereed Abstracts:

1. Pittman JE, Noah HH, Calloway EH, **Davis SD**, Sagel SD, Accurso FJ, Knowles MR, Sontag MK. Early Infection with *Pseudomonas aeruginosa* Does Not Explain Differences in Lung Function in Early Childhood That Persist into Adolescence in Subjects with Cystic Fibrosis: A Replication Study. *Am J Respir Crit Care Med.* 2010 (abstracts issue); in press
2. Pittman JE, LaFave CO, Coverstone A, Johnson RC, Jones P, **Davis SD**. Lung Function in Children of All Races Correlates Well with Surrogate Measures of Thorax Length. *Am J Respir Crit Care Med.* 2010 (abstracts issue); in press
3. Pittman JE, Rosenfeld M, LaFave C, Ferkol T, Sagel S, Dell S, Milla CE, Jones P, Johnson RC, Leigh MW, Knowles MR, **Davis SD**, on behalf of the Genetic Diseases of Mucociliary Clearance Consortium. Characteristics of Primary Ciliary Dyskinesia in Children Under 5 Years of Age. *Am J Respir Crit Care Med.* 2010 (abstracts issue); in press
4. Pittman JE, Johnson RC, Jones P, **Davis SD**. Multiple Breath Washout using a Closed (Rebreathing) System in Children with Cystic Fibrosis vs. Healthy Controls – Initial Results. *Am J Respir Crit Care Med.* 2010 (abstracts issue); in press
5. Pittman JE, Zariwala M, Weck K, Leigh MW, **Davis SD**. Respiratory Failure as Cause of Death in an Infant with Primary Ciliary Dyskinesia. *Am J Respir Crit Care Med.* 2010 (abstracts issue); in press
6. Brumback LC, **Davis SD**, Kerby GS, Kloster M, Johnson R, Castile R, Hiatt PW, Rosenfeld M. Lung Function from Infancy through Preschool in a Cohort of Children with CF. *Pediatric Pulmonology*; Supp 33 (abstract issues), October 2010.
7. Ren CL, Kerby GS, Rosenfeld M, Mayer OH, Castile R, Hart M, Hiatt PW, Kloster M, Brumback LC, Johnson R, **Davis SD**. Analysis of the Association between Clinical Features and Lung Function in Preschool Children with CF. *Pediatric Pulmonology*; Supp 33 (abstract issues), October 2010.
8. Chawla K, Hazucha MJ, Dell SD, Ferkol TW, Sagel SD, Rosenfeld M, Baker B, **Davis SD**, Knowles MR, Leigh MW. Genetic Diseases of Mucociliary Clearance Consortium. *Am J Respir Crit Care Med.*, 2010; 181:A6726.
9. Pittman JE, Johnson RC, **Davis SD**. Bronchodilator Responsiveness by Infant Pulmonary Function Testing. *Am J Respir Crit Care Med.*, 2010; 181:A3916
10. Shapiro AJ, **Davis SD**, Olivier KN, Ferkol TW, Dell SD, Sagel SD, Rosenfeld M, Milla CE, Atkinson JJ, Knowles MR, Leigh MW. Clinical Symptoms Associated with Primary Ciliary Dyskinesia – Results of a Multi-Centered Study. *Am J Respir Crit Care Med.*, 2010; 181:A6728.
11. Patel KA, **Davis SD**, Johnson R, Esther CR. Disease Markers in the Exhaled Breath Condensate of Infants and Preschoolers. *Am J Respir Crit Care Med.*, 2010; 181:A3288.
12. Peterson-Carmichael SL, Johnson R, Noah TL, **Davis SD**. Physiologic and Inflammatory Findings in Young Children After Respiratory Syncytial Virus (RSV) Bronchiolitis. *Am J Respir Crit Care Med.*, 2010; 181:A3293.
13. Ramanathan C, **Davis S**, Alexis N, Leigh M, Boucher R, Donaldson S. Evaluation of Percent Solids of Lower Airway Secretions of Infants and Children with Cystic Fibrosis. *Ped Pulm Supp.* 32 (abstracts issue) October 2009.

14. Pittman J, Johnson R, **Davis S**. Change in Pulmonary Function Following IV Antibiotics in Infants with CF. *Ped Pulm Supp*. 32 (abstracts issue) October 2009.
15. Pittman J, Johnson R, **Davis S**. Bronchodilator Responsiveness in Infants with CF. *Ped Pulm Supp*. 32 (abstracts issue) October 2009.
16. Kerby GS, Rosenfeld M, Ren CL, Mayer OH, Castile R, Hart M, Hiatt PW, Kloster M, Brumback L, Johnson R, **Davis SD**. Spirometry Distinguishes Preschool Children with CF From Healthy Controls in a Multicenter Setting. *Ped Pulm Supp*. 32 (abstracts issue) October 2009.
17. Leigh MW, Ferkol TW, Dell SD, **Davis SD**, Knowles MR. Primary Ciliary Dyskinesia in Children: Dichotomy in Structural Versus Functional Changes in Airways. *Am. J. Respir. Crit. Care Med.*, Apr 2009; 179: A3674.
18. Pittman JE, **Davis SD**. Spirometry in Biracial Children: Assessing Adequacy of Current Race-Based Reference Equations. *Am. J. Respir. Crit. Care Med.*, Apr 2009; 179: A4850.
19. Kerby GS, Rosenfeld M, Ren C, Mayer O, Castile R, Hart M, Hiatt P, Kloster M, Brumback L, Johnson R, **Davis SD**. Multi-center lung function testing in preschool subjects; *Ped Pulm Supp*. 31 (abstracts issue) October 2008
20. Rosenfeld M, **Davis SD**, Brumback L, Daniel S, Johnson R, Rowbotham R, McNamara S, Martin S, Barlow C, Ratjen F. Inhaled 7% Hypertonic Saline is Well Tolerated in Infants and Toddlers with CF. *Ped Pulm Supp*. 31 (abstracts issue) October 2008.
21. Pittman J, Calloway E, Yeatts J, Drumm M, Leigh M, **Davis S**, Van Rie A, Emond M, Knowles M. Age of Pseudomonas aeruginosa Infection and Severity of Lung Disease in Cystic Fibrosis Adolescents and Adults. *Ped Pulm Supp*. 31 (abstracts issue) October 2008: A332, p. 319.
22. Ayala GX, Sleath B, **Davis S**, Williams D, Yeatts K, Washington D; Child and caregiver question-asking and input into asthma management regimens during pediatric visits; International Conference on Communication in Healthcare; Oslo, Norway
23. Sleath B, Ayala GX, Williams D, **Davis S**, Yeatts K, Washington D; Provider question asking about asthma controller medications during pediatric asthma visits; International Conference on Communication in Healthcare; Oslo, Norway
24. Huda W, Fordham LA, Frey GD, **Davis S**; Effective Doses to Pediatric Cystic Fibrosis Patients Undergoing Chest CT Examinations. American Association of Physicists in Medicine, July 27-31, 2008
25. Pittman JE, **Davis SD**, Chawla KK, Brown DE, Knowles MR, Leigh MW. Primary Ciliary Dyskinesia: Characteristics of Children under Six. *Proceedings of the American Thoracic Society*; 2008, A798.
26. Dellon E, Donalson S, Johnson R, **Davis S**; Safety and Tolerability of Hypertonic Saline in Infants and Young Children with Cystic Fibrosis; *Pediatric Pulmonology*, 2007, Suppl 30; 298.
27. **Davis, S**, Kerby, G, Acton, J, Castile, R, Colin, A, Conrad, C, Hart, M, Hiatt, P, Mogayzel, P, Johnson, R, Wilcox, S, Knutzen, S, Brumback, L, Rosenfeld, M. Feasibility, Sensitivity and Variability of Adult-Type Pulmonary Function Tests in Infants with CF in a Multicenter, Longitudinal Trial; *Pediatric Pulmonology*, 2006, Suppl 29; 360.
28. Dellon E, Donalson S, Johnson R, **Davis S**; Safety and Tolerability of Hypertonic Saline in Young Children with Cystic Fibrosis; *Pediatric Pulmonology*, 2006, Suppl 29; 283.
29. Rosenfeld M, Brumback L, Knutzen S, Acton J, Castile R, Colin A, Conrad C, Hart M, Hiatt P, Kerby G, Mogayzel P, Johnson R, Wilcox S, **Davis SD**. Multicenter Longitudinal

- Evaluation of Raised Volume Forced Expiratory Flows in Infants with CF is Feasible; *Pediatric Pulmonology*, 2005, Suppl 28; 354.
30. **Davis SD**, Peterson-Carmichael S, Noah T, Johnson R, Abode K, Leigh M. Correlation of Infant Lung Function and Bronchoalveolar Lavage Fluid (BALF) Data in CF Infants; *Pediatric Pulmonology*, 2005, Suppl 28; 336.
 31. **Davis SD**, Kerby G, Acton J, Castile R, Colin A, Conrad C, Hart M, Hiatt P, Mogayzel P, Brumback L, Johnson R, Wilcox S, Wohl ME, Rosenfeld M. Creating an Infant Lung Function Testing Network. *Pediatric Pulmonology*, 2004, Suppl 27; 329.
 32. **Davis SD**, Fordham LA, Noah TL, Retsch-Bogart GZ, Qaqish B, Yankaskas BC, Johnson RC, Leigh MW. HRCT abnormalities reflect BALF inflammation and track changes in early CF. *Pediatric Pulmonology*, 2004, Suppl 27; 328.
 33. Saito J, Johnson R, Noah T, Leigh M, **Davis S**. Correlation of Physiologic Markers versus Flexible bronchoscopy Findings in Infants with Recurrent Wheeze and Cough. *Am J Respir Crit Care Med*. 2004; 164 (7): A489
 34. **Davis SD**, Fordham LA, Retsch-Bogart G, Noah T, Johnson R, Abode K, Leigh M. Detecting and Tracking CF Lung Disease using HRCT and BAL in Infants. *Pediatric Pulmonology*, 2002; Suppl 24: A 374.
 35. Harris W, Wood R, **Davis S**, Retsch-Bogart G, Leigh M. Chronic/Recurrent Wheezing In Infants And Young Children: A Bronchoscopic Study. *Pediatric Research*, 2000. 47: 477A
 36. Tepper RS, **Davis S**, Jones M, Kisling J, Payne N. Changes In Full Forced Expiratory Flow Volume Maneuvers During Bronchial Challenge Testing In Infants. *Eur Respir J* 1999.
 37. Goldstein A, Castile R, **Davis S**, Filbrun D, Flucke R, Tepper R, McCoy K. Bronchodilator Responsiveness in Infants with Cystic Fibrosis. *Peds Pulmon* Suppl 19: 279, 1999.
 38. Goldstein A, Castile R, **Davis S**, Filbrun D, Flucke R, McCoy K, Tepper R. Bronchodilator Responsiveness in Normal Infants. *Am J Respir Crit Care Med*. 1999;195(3)pt2: A674.
 39. **Davis S**, Jones M, Kisling J, Howard J, Tepper RS. Comparison of normal and cystic fibrosis (CF) infants using forced expiratory flows breathing heliox. *Am J Respir Crit Care Med*. 1999;159(3)pt2:A504.
 40. Jones M, Castile R, **Davis S**, Goldstein A, Filbrun D, Kisling J, Fluck R, Tepper R. Forced expiratory maneuvers in normal infants: normative values. *Am J Respir Crit Care Med*. 1999;159(3)pt2:A504.
 41. Tepper RS, Jones M, **Davis S**, Kisling J, Howard J, Castile R. The Time Constant from Forced Expiratory Flow Volume Curves Increases with Lung Growth During Infancy. *Eur Respir J*. 1998;12(28):155(#0204).
 42. **Davis S**, Jones M, Kisling J, Castile R, Tepper RS. Density Dependence of Forced Expiratory Flows in Healthy Infants. *Am J Respir Crit Care Med*. 1998;157(3):A470.
 43. Jones M, **Davis S**, Kisling J, Castile R, Tepper RS. Negative Expiratory Pressure to Assess Flow Limitation in Infants. *Am J Respir Crit Care Med*. 1998;157(3):A471.
 44. Tepper RS, **Davis S**, Jones M, Kisling J. The Effect of CPAP on Forced Expiratory Flows in Healthy Infants. *Eur Respir J*. 1997; 10(25):167s(#1148).
 45. Jones M, **Davis S**, Grant D, Christoph K, Tepper RS. Negative Pressure to Assess Flow Limitation in Very Young Children. *Am J Respir Crit Care Med*. 1997;155(4)pt2:A376.
 46. **Davis S**, Jones M, Kisling J, Angelicchio C, Tepper RS. Effect of Continuous Positive Airway Pressure (CPAP) on Forced Expiratory Flows of Infants with Tracheomalacia. *Am J Respir Crit Care Med*. 1997;155(4)pt2:A376.

Invited Workshops:

1. European Cystic Fibrosis Society – Clinical Trials Network Consensus Conference on Outcome Parameters in Cystic Fibrosis; March 2010; Venice, Italy.
2. Advancing Rare Diseases Research through Networks and Collaboration; July 2009; National Institute of Health
3. Care of Patients with CF Diagnosed by Newborn Screening; July 2007; Cystic Fibrosis Foundation
4. Preventing Respiratory Sequelae in Children Diagnosed with Cystic Fibrosis by Newborn Screening; February 2007; European Respiratory Society; Belgium
5. Imaging Endpoints for Cystic Fibrosis Clinical Trials; September 2005.
6. HRCT Special Interest Group Conference; October 2003; North American Cystic Fibrosis Conference

TEACHING RECORD

National/International:

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|------|---|
| 2010 | Invited Speaker, Pro-Con Debates in CF Lung Disease: MRSA, Chest CT & Pulmonary Maintenance Therapies (Symposium)
<i>High Resolution CT Scans of the Chest Should be a Routine Part of CF Lung Disease Assessment: Con</i> |
| 2010 | Speaker, Primary Ciliary Dyskinesia and Overlapping Syndromes
<i>Early lung disease in young children with PCD</i> |
| 2010 | Chairman/Speaker, American Thoracic Society Annual Conference
Mini-Symposium: <i>Inspiring The Next Generation of Pediatric Pulmonary Researchers</i> |
| 2010 | Chairman/Speaker, American Thoracic Society Annual Conference
Postgraduate Course: <i>Airway Resistance: Theory and Practice</i> |
| 2010 | Speaker, American Thoracic Society Annual Conference
Postgraduate Course: <i>How Should We Assess Outcomes in CF?</i> |
| 2009 | Featured Speaker, American Thoracic Society Annual Conference
Lecture: <i>The Value of Monitoring Lung Function throughout the Pediatric Age</i> |
| 2009 | Moderator, American Thoracic Society Annual Conference
Mini-Symposium: Best of Pediatrics |
| 2009 | Invited Speaker, Cystic Fibrosis Therapeutic Development Network
Lecture: <i>Review of Current Status of Studies Restoring Airway Surface Liquid</i> |
| 2008 | Invited Speaker, CHEST
9 th Pediatric Fellows Conference
Lecture: <i>Pulmonary Function Testing as Applied to the Wheezing Infant</i> |
| 2008 | Invited Speaker, Duke Airway Biology Forum
Lecture: <i>Infant Pulmonary Function Testing State of Art</i> |
| 2008 | Invited Speaker, American Thoracic Society Annual Conference, Clinical Workshop
Lecture: <i>Implementing Infant Pulmonary Function Testing into Clinical Practice</i> |
| 2008 | Moderator and featured speaker, American Thoracic Society Annual Conference |

- 2008 Lecture: *Clinical and Research Outcome Measures of CF Lung Disease*
Invited Speaker, Cincinnati Children's Hospital
- 2007 Lecture: *Infant PFTs as a Clinical Outcome Measures: Are we there yet?*
Invited Speaker, CHEST
9th Pediatric Fellows Conference
- 2007 Lecture: *Pulmonary Function Testing as Applied to the Wheezing Infant*
Invited Speaker, North American Cystic Fibrosis Conference Symposium
- 2007 Lecture: *Using Diagnostic Tools in the Young Child: X-rays and Pulmonary Function*
Facilitator, American Thoracic Society Annual Conference
- 2007 Thematic Poster Session: Cystic Fibrosis: Translational and Clinical Science
Invited Speaker, American Thoracic Society Annual Conference
- 2007 Lecture: *Infant Pulmonary Function Testing: Is There a Role in Early Wheezing?*
Session Chair, American Thoracic Society Annual Conference
Postgraduate Course, Lung Function Testing in Young Children: Clinical and Research Applications
- 2007 Invited Speaker, Indiana University School of Medicine
Lecture: *Detecting Early Cystic Fibrosis Lung Disease*
- 2006 Co-Chair and Speaker, North American Cystic Fibrosis Conference
Symposium: *Measuring Early CF Lung Disease*
- 2006 Invited Speaker, North American Cystic Fibrosis Conference
Course: Introduction to CF Clinical Research
Lecture: *Data and Specimen Banking*
- 2006 Invited Speaker, CHEST
Lecture: *Advances in Infant Pulmonary Function Testing*
- 2006 Invited Speaker, CIPP (Congress of International Pediatric Pulmonology)
Postgraduate Course, Assessment of Lung Function in Preschool Children
Lecture: *Preschool Spirometry*
- 2006 Moderator and Featured Speaker, American Thoracic Society Annual Conference
Lecture: *Recent progress and clinical applicability of infant lung function testing*
- 2006 Sunrise Seminar, American Thoracic Society Annual Conference
Lecture: *Incorporating Infant PFTs into Clinical Practice*
- 2006 Invited Speaker, FOCUS on Respiratory Care & Sleep Medicine Conference
Lecture: *Evaluating Respiratory Function in Children*
- 2005 Moderator and Featured Speaker, American Thoracic Society Annual Conference
Lecture: *Advances in Assessment and Treatment of CF Lung Disease*
- 2005 Facilitator, American Thoracic Society Annual Conference
Thematic Poster Session: *Measurement Techniques for Pediatric Lung Disease*
- 2004 European Respiratory Society School Course on Assessment and Interpretation of Infant Lung Function
Nice, France
Lectures: *The Infant Pulmonary Lab, Collins Medical
Clinical Usefulness in Individual Infants?
Full Forced Expiratory Maneuvers*
- 2003 Sunrise Seminar, American Thoracic Society Annual Conference
Lecture: *Implementation of Infant Pulmonary Function Testing As An Integral Part of the Pediatric Pulmonary Practice*

- 2002 Respiratory Care Journal Conference
Keystone, Colorado
Lecture: *Diagnostics*
- 2000-02 Infant PFT Round table at the NACF Conference
Moderator
- 1998 Pediatric Clinical Fellows Session at the CF Conference:
Moderator.
- 1996 Pediatric Clinical Fellows Session at the Cystic Fibrosis Conference
Lecture: *Follow-up of a Patient with Cystic Fibrosis who required Mechanical Ventilation as an Infant*

Grand Rounds:

- 2007 Grand Rounds, Wilmington AHEC
Obstructive Sleep Apnea
- 2005 Grand Rounds, UNC
Morbidity and Mortality; Enteropatheca Dermatitis and Cystic Fibrosis
- 2004 Grand Rounds, Moses Cone Hospital
Pulmonary Function Testing in Infants and Young Children
- 2004 Grand Rounds, UNC
Infant Pulmonary Function Testing
- 2002 Grand Rounds, Wake Medical Center
Obstructive Sleep Apnea
- 2002 Grand Rounds, Moses Cone Hospital
Obstructive Sleep Apnea
- 2001 Grand Rounds, Rex Hospital
Infant Pulmonary Function Tests as a Clinical Research Tool

University:

- 2007, 2009 UNC Pediatric Pulmonology Physiology Series
Infant Lung Function Testing
- 2007 UNC Faculty Workshop
Faculty Development and Mentoring
- 2005 UNC Pediatric Noon Conference
Pediatric Lung Function Testing
- 2004 UNC Cystic Fibrosis Clinical Research Seminar
Detecting Early CF Lung Disease: HRCT of the Chest Multiple Breath Washout
- 2003-08 UNC Pediatric Pulmonary Fellows' Conference
Pediatric Spirometry
- 2001 UNC Cystic Fibrosis Clinical Research Seminar
High Resolution Computed Tomography with Controlled Ventilation
- 2001-04 UNC Pediatric Noon Conference
Obstructive Sleep Apnea
- 2001 UNC Pediatric Pulmonary Fellows' Conference
Infant Lung Function Testing
- 2000 UNC Neonatology Fellows' Conference

- 2000 *Infant Pulmonary Function Tests*
UNC Cystic Fibrosis Clinical Research Seminar
- 1999 *Infant Pulmonary Function Tests*
UNC Pediatric Pulmonary Fellows' Conference
- 1998 *Density Dependence of Forced Expiratory Flows in Infants*
Indiana University Pediatric Pulmonary Conference
- 1998 *Fetal Lung Development*
Indiana University Pediatric Pulmonary Conference
- 1997 *Hydrocarbon Poisoning and Aspiration*
Indiana University Pediatric Pulmonary Conference
- 1997 *Diagnosis and Management of Pleural Effusions*
Indiana University Pediatric Pulmonary Conference
- 1997 *Lung Volumes*
Indiana University Pediatric Pulmonary Conference
- 1997 Respiratory Care Department's Continuing Education for the Healthcare Provider
Mechanical Ventilation and the Asthmatic Patient

Course Director:

- 2004-08 Pediatric Pulmonology rotation
Director of the residents, medical students

Research Mentor:

- 2008- Kavita Patel, Pediatric Pulmonology Fellow
Project: *Disease Markers in Exhaled Breath Condensate (EBC) of Infants*
- 2007- Chandar Ramanathan; Pediatric Pulmonology Fellow
Project: *Evaluating Regulators of Mucus Clearance in Childhood Lung Disease*
Grant Support: Cystic Fibrosis Foundation Fellowship Grant (1st2nd 3rd year)
- 2007- Jessica Pittman; Pediatric Pulmonology Fellow
Projects: 1. *Spirometry in Biracial Children – Assessing the Adequacy of Current NHANES Race-Based Reference Equations*
2. *Early Onset and Progression of Primary Ciliary Dyskinesia Lung Disease Prior to 10 Years of Age*
- 2007- Ruchika Goel; Masters of Public Health Student (Practicum)
Project: *Physiologic, Inflammatory and Airway Remodeling Findings in Infants with Cystic Fibrosis*
- 2005-07 Elisabeth Dellon; Pediatric Pulmonology Fellow
Project: *Hypertonic Saline in Infants and Young Children with Cystic Fibrosis*
- 2004- Stacey Peterson-Carmichael; Pediatric Pulmonology/ICU Fellow
Projects: 1. *Effect of Inhaled Corticosteroids on Infant Pulmonary Function after RSV Bronchiolitis*
2. *Physiologic, Inflammatory and Airway Remodeling Findings in Infants with Cystic Fibrosis*
Grant Support: Medimmune Pediatric Fellowship Grant
- 2002-05 John Saito; Pediatric Pulmonology Fellow
Project: *Physiologic, Bronchoscopic and Bronchoalveolar Lavage Fluid Findings In Young Children with Recurrent Wheeze and Cough*

Residency Class Advisor

2004-07 Pediatric Resident class
2001-04 Pediatric Resident class

Scholarly Oversight Committee; PhD Thesis Reviews:

2009 Deidre Washington, PhD; University of North Carolina at Chapel Hill
Thesis: *The Effect of Patient Race on Patient-Provider Communication with Pediatric Asthma Patients*

2008 Catherine Gangell, BsC; University of Western Australia
Thesis: *Evaluation of the Forced Oscillation Technique for Clinical Assessment of Young Children with Cystic Fibrosis*

2004-07 Kristy Herman; Neonatology Fellow

Attending on Clinical Service

I attend the clinical service 4 to 6 weeks annually. During these weeks, I give lectures to the residents and medical students. Lists of these lectures are below:

- Lung function Testing
- Cystic Fibrosis: Pathophysiology and Management
- Evaluation of the Noisy Breathing Infant
- Evaluation of the Infant with Recurrent Wheeze and Cough
- Chronic Cough

GRANTS:

Ongoing Research Support

RFA HL 10-017 (R01) (PIs: Davis, Zdanksi, Superfine) 10/1/2010 -9/30/2014 1.8 calendar
NIH/NHLBI \$2,600,000 Direct
Predictive Modeling for Treatment of Upper Airway Obstruction

We hypothesize that a functional computational model that simulates the mechanical and aerodynamic behavior of the upper airway in infants with Pierre Robin sequence and laryngeal lesions (e.g. subglottic stenosis) can be used as an effective diagnostic and treatment planning tool, reducing failures of initial treatment and avoiding potentially unnecessary future complications and interventions

NC TraCS Institute 5/1/09-7/31/10 Role: PI
Validation of the Multiple Breath Washout Device for Assessment of Pediatric Lung Diseases

1R13HL105073-01 (Davis-PI) 9/30/2010-10/1/2010 Role: PI
NHLBI \$15,000
Primary Ciliary Dyskinesia and Overlapping Syndromes Conference

5 U54 RR019480-02 (Knowles-PI) 8/1/2004 – 7/31/2009 1.20 calendar
NIH (National Center for Research Resources) \$892,327
Genetic Disorders of Mucociliary Clearance
A five center consortium evaluating rare diseases of the airways, which involve defects in mucociliary clearance.

1 P50 HL 084934-01 (Boucher-PI) 9/15/2006– 7/31/2011 1.61 calendar
NIH/NHLBI \$2,174,432
SCCOR in Host Factors in Chronic Lung Disease
The purpose of this study is to assess host defense factors contributing to exacerbations of disease in COPD and CF.

1U01HL092931-01 (Rosenfeld-PI; Davis-PI) 10/1/08-7/31/12 2.4 cal months
NIH/NHLBI \$83,692
Subcontract with Childrens Hospital Regional Medical Center (Davis – PI)
Infant Study of Inhaled Saline in Cystic Fibrosis (ISIS)
This multiple center study evaluates 7% HS inhaled twice daily for 48 weeks versus twice daily inhalation of normal saline (placebo) in CF infants (4 to 15 months at enrollment).

ISIS07KO (Davis-PI; Rosenfeld-PI) 10/01/2007 – 9/30/12 0 calendar
Cystic Fibrosis Foundation \$836,587
Infant Study of Inhaled Saline in Cystic Fibrosis (ISIS)
This multiple center study evaluates 7% HS inhaled twice daily for 48 weeks versus twice daily inhalation of normal saline (placebo) in 150 CF infants (4 to 15 months at enrollment).

DAVIS08Y2 (Davis-PI) 1/1/10-12/31/10 .12 Calendar
Cystic Fibrosis Foundation Therapeutics, Inc \$39,122
Infant and Preschool Pulmonary Function Testing Core
The goal of this project is to ensure that TDN sites are performing infant and preschool lung function testing as outlined in the protocols and Standard Operating Procedures and that the data collected is of research quality.

RETSCH09Y0 (Retsch-Bogart – PI) 1/1/10-12/31/10 Role: Co-PI
Cystic Fibrosis Foundation Therapeutics, Inc. \$160,000
Therapeutic Development Center

Completed Research Support

Genentech, Inc. (Davis-PI) 1/1/08-12/31/09 .24 Calendar
Consulting Agreement for Protocol Z4240g \$11,000
Dr. Davis will act as consultant for oscillometry and spirometry testing in preschool children. This includes contributing to the development of study procedures, the processes for data collection, the review of study data ("over-reading"), the methods for analysis of and evaluation of the data, and review of study related documents (e.g., reports, manuscripts) as requested.

Genentech, Inc. (Davis-Site PI) 6/24/08-6/23/11 .84 Calendar
 Z4240g A Phase IV, Multicenter, Randomized, Double Blind, Placebo Controlled Trial of
 Pulmozyme in 3- TO 5-Year-Old Patients with CF \$43,283
 This is a Phase IV, multicenter, randomized, double-blind, placebo-controlled trail designed to
 evaluate the effect of study drug on pulmonary function, health related quality of life (HRQOL),
 and respiratory symptoms in 3 to 5 year old children with Cystic Fibrosis.

R01 HL069837 (Sleath -PI) 8/1/2005 – 7/31/2009 1.04 calendar
 NIH \$280,477
 Children and Asthma: Communication and Outcomes
 The project is focused on a neglected area within children's health services research, the
 relationship between provider-child-caregiver communication during pediatric asthma visits and
 treatment adherence.

Cystic Fibrosis Clinical Research Grant 7/1/05-6/31/08 9.3%
 Cystic Fibrosis Foundation \$18,597 (1st year); \$92,077 (3 years)
 Spirometry as an Outcome Measure in Preschool Children with CF Kerby04A0
 An 8 center study evaluating lung function measurements longitudinally in preschoolers with
 cystic fibrosis and age-matched controls
Role Co-PI

Cystic Fibrosis Foundation 7/07-6/08 7%
 A Pilot Study to Evaluate the Tolerability of Inhaled
 Hypertonic Saline in Infants with Cystic Fibrosis \$20,000
Role: Co-PI

Cystic Fibrosis Foundation 2/1/05-1/31/07 15%
 Cystic Fibrosis Clinical Research Grant \$47,365 (1st year); \$69,234 (2 years)
 Hypertonic Saline in Infant and Young Children with CF
 A single center study assessing the safety of hypertonic saline in infants and young children
 with cystic fibrosis
Role PI

DAVIS08Y2 2/1/03-1/31/07 30%
 Cystic Fibrosis Foundation \$75,190 (last year) \$1,000,000 (over 3 years)
 Evaluation of Pulmonary Function Tests from Raised Lung Volumes as Outcome Measures for
 Clinical Trials in Infants with Cystic Fibrosis
 A 10 center study evaluating longitudinal changes of infant lung function testing over 1 year in
 infants with cystic fibrosis
Role PI

Cystic Fibrosis Clinical Research Grant 7/1/02-6/30/05
 Cystic Fibrosis Foundation \$80,000
 Detecting Early, Reversible CF Lung Disease on HRCT
 This study is correlating changes on HRCT of the chest to bronchoscopy findings.

Role PI

Harry Shwachman Clinical Investigator Award 7/1/00-6/30/03
Cystic Fibrosis Foundation \$225,000
Physiologic and BALF Markers of Early CF Lung Disease
This study is investigated early markers of cystic fibrosis lung disease noted on infant lung function testing and bronchoscopy.
Role: PI

Thomas H. Davis Fellowship Award 7/1/00-6/30/02
American Lung Association \$60,000
Physiologic Versus Bronchoscopic Markers in Wheezy Infants
This study correlated physiologic markers on infant lung function testing to bronchoscopy findings.
Role: PI

Cystic Fibrosis Foundation Clinical Fellowship Grant 7/1998-6/1999
Density Dependence of Maximal Flows in CF Infants \$55,000
Principal Investigator: Davis Sponsor: Robert S. Tepper, MD, PhD

Cystic Fibrosis Foundation Clinical Fellowship Grant 7/1997-6/1998
Principal Investigator: Davis Sponsor: Howard Eigen, MD \$31,400

Cystic Fibrosis Foundation Clinical Fellowship Grant 7/1996-6/1997
Principal Investigator: Davis Sponsor: Howard Eigen, MD

Pending Grants

PA 10 067 (PIs: Voynow, Cotton, Davis, Laughon) 12/1/2010-11/30/2014 1.2 Calendar
NIH/Duke University \$304,733
Gastrin-Releasing Peptide and Bronchopulmonary Dysplasia

Prenatal and postnatal environmental exposures interact with host factors in susceptible premature individuals and generate oxidative stress, which induces GRP, which stimulates pulmonary inflammation and inhibits alveolarization. Increased GRP regulates the development of bronchopulmonary dysplasia and pulmonary morbidity.

PROFESSIONAL SERVICE:

Committees:

International/National:

2010 Faculty member
Seventh Annual Respiratory Disease Young Investigators' Forum
2009- Pediatric Program Committee

American Thoracic Society
 Pediatric Chair and Chair Elect
 2007- Pediatric Planning Committee
 American Thoracic Society
 Member
 2005- Pediatric Program Committee
 American Thoracic Society
 Member
 2003-05 Infant/ Preschool PFT Standardization Taskforce
 American Thoracic Society
 USA Co-Chair
 2005-08 National Resource Center Committee
 Therapeutic Development Network, Cystic Fibrosis Foundation
 Chair
 2003-04 Pediatric Assembly Nominating Committee
 American Thoracic Society
 Member
 2000- Outcomes for Young Children with CF Working Committee
 Therapeutic Development Network, Cystic Fibrosis Foundation
 Co-Director

UNC:

2007- Faculty Development Committee, Department of Pediatrics
 Chair
 2007- Promotions Committee
 Department of Pediatrics
 Member
 2005, 2007 Department of Pediatrics Evening of Scholarship
 Judge of Clinical Abstracts
 2003-05 Pediatric Clerkship Advisory Committee
 Department of Pediatrics
 Member
 2002-08 Pediatric Intern Selection Committee
 Department of Pediatrics
 Member
 2001-02 Promotions Committee
 Department of Pediatrics
 Member

Professional Membership:

American Academy of Pediatrics
 American Thoracic Society
 North Carolina Medical Society
 Society of Pediatric Research

UNC Administrative Activities

2009- Chief, Division
2007- Pediatric Pulmonology Fellowship Director
2001-07 Resident Advisor
Department of Pediatrics
2001- Associate Director of PFT Laboratory
2001- Medical Director of Infant PFT Laboratory

Reviewer:

American Journal of Respiratory and Critical Care Medicine
Austrian Science Fund
Chest
European Journal of Applied Physiology
European Respiratory Journal
Health Research Board of Ireland
Health Services, Public Health Research Board Medical Research Council(England)
Journal of Applied Physiology
Lancet
New England Journal of Medicine
The Journal of Pediatrics
Pediatric Pulmonology
Pediatric Research
Respiratory Physiology and Neurobiology
Thorax