

## **CURRICULUM VITAE**

**DATE PREPARED:** March 10, 2006

### **PART I: General Information**

**Name:** RICHARD BARRY PARAD

**Office Address:** BRIGHAM AND WOMEN'S HOSPITAL  
NEWBORN MEDICINE CWN RM 418

**Phone:** BOSTON, MA 02115 United States  
(617) 732-7371  
**Email:** rparad@partners.org  
**Fax:** (617) 278-6983

**Place of Birth:** Boston , MA

#### **Education:**

1977 B.A. (Biology), Cum laude, Wesleyan University  
1981 M.D., University of California, San Diego School of Medicine  
1997 M.P.H. (Quantitative Methods), Harvard School Of Public Health

#### **Postdoctoral Training:**

1981-1982 Intern in Pediatrics, Children's Hospital  
1982-1984 Resident in Pediatrics, Children's Hospital  
1984-1987 Fellow in Neonatology, Joint Program in Neonatology, Harvard Medical School,  
Children's Hospital, Brigham and Women's Hospital, Beth Israel Hospital  
1984-1989 Fellow in Pediatric Pulmonary, Children's Hospital

#### **Licensure and Certification:**

1982 National Board of Medical Examiners  
1984 Medical License, Massachusetts Board of Medicine  
1986 American Board of Pediatrics Certificate  
1987 American Board of Pediatrics, Neonatology Subboard Certificate  
1992 American Board of Pediatrics, Pediatric Pulmonary Subboard Certificate  
1993 Medical License, Florida Board of Medicine

#### **Academic Appointments:**

1981-1984 Clinical Fellow in Pediatrics, Pediatrics-Children's Hospital, Boston, MA  
1984-1986 Research Fellow in Pediatrics, Pediatrics-Children's Hospital, Boston, MA  
1986-1999 Instructor in Pediatrics, Pediatrics-Children's Hospital, Boston, MA  
1999-2005 Assistant Professor of Pediatrics, Pediatrics-Children's Hospital, Boston, MA

#### **Hospital or Affiliated Institution Appointments:**

- 1987- Assistant in Medicine, Children's Hospital, Boston, MA
- 1987- Pediatrician, Core Group Neonatologist, Neonatal Intensive Care Unit, Brigham and Women's Hospital, Boston, MA
- 1987- Assistant Pediatrician, Beth Israel Hospital, Boston, MA
- 1987- Staff Member, Division of Newborn Medicine (formerly Joint Program in Neonatology), Children's Hospital, Boston, MA
- 1990- Staff Member, Division of Respiratory Diseases, Children's Hospital, Boston, MA
- 1990- Courtesy Staff, Department of Pediatrics, Winchester Hospital, Winchester, MA
- 1990- Provisional Staff, Department of Pediatrics, Newton Wellesley Hospital, Newton, MA
- 1998- Clinical Associate in Pediatrics, North Shore Medical Center, Salem, MA
- 1998- Clinical Associate in Pediatrics, Massachusetts General Hospital, Boston, MA

**Hospital and Health Care Organization Clinical Service Responsibilities:**

- 1987- Neonatologist, Joint Program in Neonatology / Division of Newborn Medicine, Children's Hospital
- 1991- Staff member, Perinatal Consult Service, Brigham and Women's Hospital
- 1991- Staff, Attending Physician, Core Neonatologist Group, Neonatal Intensive Care Unit, Brigham and Women's Hospital
- 1992-2000 Founder and Director, Cystic Fibrosis Molecular Diagnostic Laboratory, Children's Hospital

**Major Administrative Responsibilities:**

- 1991- Director, Neonatology Core Curriculum for Pediatric Residents , Children's Hospital, Massachusetts General Hospital, Boston Medical Center
- 1994- Liaison for Newborn Medicine with Departments of Radiology, Children's Hospital, Brigham and Women's Hospital
- 1995- Pediatrician Credentialing, Brigham and Women's Hospital
- 2002- IRB review of pediatric protocols, Brigham and Women's Hospital and Massachusetts General Hospital

**Major Committee Assignments:**

- 1986-1988 NICU Chronic Care Committee, Member, Brigham and Women's Hospital
- 1989-1990 Occurrence Review Committee, Joint Program in Neonatology, Member, Children's Hospital
- 1989-1990 Quality Improvement Committee, Joint Program in Neonatology, Member, Children's Hospital
- 1991-1992 Drug Utilization Committee (Artificial Surfactant), Pharmacy, Member, Children's Hospital
- 1991-1994 Respiratory System Grant Review Committee, Member, Medical Research Council of Canada
- 1993-1995 Ad hoc member: GCRC Review Committee, Ad-Hoc Member, National Institutes of Health
- 1994- Radiology in Newborn Medicine Steering Committee, Member, Brigham and Women's Hospital
- 1995- Medical Staff Credentialing Committee, Member, Brigham and Women's Hospital
- 1995- Department of Newborn Medicine Credentialing Committee, Member, Brigham and Women's Hospital
- 1997-2001 NICU Network Steering Committee, Member, Children's Hospital
- 1997-2001 Harvard Center for Children's Health, Faculty Steering Committee, Member,

- Harvard School of Public Health
- 1998- MA CF Newborn Screening Workgroup, New England Newborn Screening Program, Co-Chair, University of Massachusetts Medical School
- 2002- Data Safety Monitoring Board, NIH Grant, PI Adre DuPlessis, Member, Children's Hospital
- 2002- Partners Human Research Committee, Member, Brigham and Women's Hospital
- 2002-2003 Director's Workgroup, Advisor, New York CF Newborn Screening Program
- 2003- Workgroup for Therapeutic Protocol for Treatment of Presymptomatic CF Newborns, Member, Cystic Fibrosis Foundation
- 2003- GCRC IRB, Ad-Hoc Member, Children's Hospital
- 2003-2005 Workgroup on CF Newborn Screening, Member, Center for Disease Control
- 2004- Workgroup for implementation of CF newborn screening, Member, Cystic Fibrosis Foundation
- 2005- New England CF Newborn Screening Workgroup, Member, New England Newborn Screening Program

**Professional Societies:**

- 1984- American Thoracic Society, Member
- 1984-1995 American Federation for Clinical Research, Member
- 1990- Cystic Fibrosis Genetic Analysis Consortium, Member
- 2000- Society for Pediatric Research, Member
- 2001- American Society of Human Genetics, Member
- 2005- American Academy of Pediatrics, Fellow (Member of Perinatal Pediatrics, Genetics and Pediatric Pulmonology Sections)

**Editorial Boards:**

- 1990- Ad-Hoc Reviewer, Pediatrics
- 1990- Ad-Hoc Reviewer, American Review of Respiratory Diseases
- 1990- Ad-Hoc Reviewer, Journal of Pediatrics
- 1993-1996 Ad-Hoc Reviewer, Screening
- 1997- Ad-Hoc Reviewer, Pediatric Research
- 2000- Ad-Hoc Reviewer, New England Journal of Medicine
- 2000- Ad-Hoc Reviewer, Pediatric Pulmonology
- 2003- Ad-Hoc Reviewer, Lancet
- 2004 Ad-Hoc Reviewer-CF Newborn Screening, Morbidity and Mortality Weekly Report (CDC)

**Awards and Honors:**

- 1992-1994 Edward Livingston Trudeau Scholar, American Lung Association
- 1995 Summer Scholarship in Epidemiology, Cystic Fibrosis Foundation
-

## Part II: Research, Teaching, and Clinical Contributions

### A. Narrative report of Research, Teaching, and Clinical Contributions

Major Research Interests:

- a. Genotype/Phenotype association and outcome prediction
  - Genotype/phenotype association in chronic lung disease (CLD)
  - Genotype/phenotype association in Cystic Fibrosis (CF)
  - CFTR abnormalities in patients with borderline sweat chloride levels
  - Use of genotyping in newborn screening for genetic disorders
  - Education of parents on DNA testing in Newborn Screening
  - Characterization of abnormal protein and mRNA from patients with Type II C1 Inhibitor Deficiency
  
- b. Newborn acute and chronic lung disease/bronchopulmonary dysplasia - Etiology, therapy, prevention
  - Antioxidant protection of lungs against oxidant injury:
  - Clinical role of pulmonary antioxidant enzymes in local protection against oxidant injury
  - Development and regulation of antioxidant enzyme systems in fetal lung cells
  - Effect of systemic glucocorticoid therapy on development of pulmonary oxygen toxicity: role of neutrophils in acute lung injury
  - Efficacy exogenous surfactant for treatment of Hyaline Membrane Disease
  - Efficacy of extracorporeal membrane oxygenation (ECMO) vs. conventional therapy for treatment of persistent pulmonary hypertension (PPHN)
  - Therapy of persistent pulmonary hypertension (PPHN) in newborns with Congenital Diaphragmatic Hernia with Superoxide Dismutase and inhaled Nitric Oxide.
  - Prevention of chronic respiratory morbidity in premature infants using intratracheal recombinant human Cu/Zn Superoxide Dismutase
  
- c. Prediction of neonatal outcome based on abnormalities detected by prenatal sonography
  
- d. CF Newborn Screening: Assessment of impact on outcome, development of optimal screening and treatment protocols, and strategies for national implementation

After oxygen toxicity and neonatal lung injury research experience during Pediatric residency in the laboratory of Harvey Colten and Richard Fox at Children's Hospital, a joint fellowship in Perinatal-Neonatal medicine and Pediatric Pulmonology in the JPN was pursued. With the departure of the Colten lab to St. Louis, a desire to gain exposure to molecular rather than physiologic techniques for investigating etiologies of lung injury led to training in molecular biology of inflammation with Fred Rosen and Alvin Davis in a Center for Blood Research laboratory. Genotype-phenotype relationships in Hereditary Angioneurotic Edema Type II involved isolation of protein and DNA mutations and translation of this information into an understanding of protein structural alteration and malfunction. These skills were then used to evaluate the molecular ontogeny of antioxidant enzyme expression (Cu/Zn Superoxide Dismutase) during lung development for protection against oxygen toxicity. During fellowship, experience was gained in clinical trial design and execution via participation in two neonatal trials: the first US human trial of bovine surfactant for the treatment of Hyaline Membrane Disease, and an important randomized trial of Extracorporeal Membrane Oxygenation (ECMO) for the treatment of Persistent Pulmonary Hypertension of the Newborn. Dr. Davis departed to Cincinnati in 1991. Given the goal of transferring molecular biology back to the lung, the 1989 identification of the gene responsible for Cystic Fibrosis allowed for the opportunity to evaluate genotype-phenotype associations. In the lab of Craig Gerard, an NIH K08 award was obtained to investigate genotypes in mild CF like pulmonary phenotypes that might not be readily identified as CF (pulmonary symptoms in conjunction with borderline elevations of sweat chloride, and chronic

bronchitis). The K08 award also supported further training in clinical trial design for performing molecular epidemiological studies. To this end, an MPH in Quantitative Methods was obtained at the Harvard School of Public Health (HSPH). This degree has allowed for the use of analytic tools that can better generate useful quantitative information in genotype-phenotype associations. One example of the application of these skills is reflected my 1999 Infection and Immunity paper, in which mathematical models of pulmonary outcome in CF (rate of decline in % predicted FEV1) were based on genotype and phenotypic characteristics such as infection status, immune status, and sex. This training in Quantitative Methods has led to clinical projects in which analysis of measurements has allowed modeling of growth curves in infant kidney length, fetal hip measurements, fetal brain corpus callosum dimensions and analysis of the accuracy of fetal MRI in aiding prenatal diagnosis of cleft palate. Subsequently, an NIEHS grant was awarded to help development an ultrasound measurement protocol for assessing the growth of estrogen sensitive organs in infants as a pilot to a randomized trial under NIH development which will evaluate the effect of the high phytoestrogen concentrations in soy-based formulas on infants. Also, these skills gained in clinical trial design have led to becoming co-principal investigator in a randomized, controlled, multicenter clinical trial of recombinant human Copper-Zinc Superoxide Dismutase, administered intratracheally in premature newborns with Respiratory Distress Syndrome for the prevention of Bronchopulmonary Dysplasia. This trial ties together clinical expertise in the care of neonates with Bronchopulmonary Dysplasia with basic science interests in antioxidant protection against neonatal lung injury and clinical trial design. The results of this trial, published in 2003, have redefined the focus on primary outcome of BPD from short-term issues (duration of oxygen requirement) to long term issues of chronic respiratory morbidity. This paper was cited at the 2004 American Thoracic Society Meeting Pediatric Year in Review as one of the most important publications of the year. Data generated from that trial have also allowed for publication of observations on the potential pharmacoeconomic impact of SOD therapy, as well as the possible roles of this antioxidant as a neuroprotective agent, and as a prophylactic against development of retinopathy of prematurity. As a co-investigator in a pulmonary SCOR grant based at Children's Hospital, tracheal aspirate and urine samples collected from premature newborns who develop chronic lung disease are being evaluated in a number of pilot studies assessing elements of inflammatory response that contribute to injury in the lung; evaluating for gene sequence variants that might predispose to BPD, measuring urine Bombesin concentrations that may predict BPD, and lung Bactericidal Permeability Increasing Protein (BPI) levels that may predict lung infection risk.

Training in principles of screening was acquired while obtaining the MPH degree at HSPH. Meshing this training with expertise in Newborn Medicine, CF and Molecular Genetics, I have entered into a position with the New England Newborn Screening Program, the laboratory responsible for mandated newborn screening in Massachusetts. Over the past seven years, I have been a consultant to this program, advising to initiate newborn screening for CF, with a goal to detect affected infants before they become symptomatic for initiation of prophylactic therapies. In 1999, I presented plans for such a program to the Massachusetts Department of Public Health and, with approval, designed and implemented the program on 2/1/99. I remain co-director of this program, having developed a successful statewide CF newborn screening program that has attracted a national and international reputation, and prompted invitations by the CDC, CF Foundation, and Departments of Public Health around the US to share our experience and help build state programs and national guidelines. Several population based research projects have been fueled by the data we have generated monitoring this pilot program after screening nearly 500,000 newborns, resulting in publications on sweat testing guidelines for newborns, quantitation of the extent to which diagnostic dilemmas are generated by our immunoreactive trypsinogen/ CFTR multmutation CF newborn screening algorithm, and observations on the phenotypes detected by our current mutation panel (specifically problems of detecting infants who have the exon 4 mutation, R117H, as one of their two mutations). As all US states aim towards incorporating CF newborn screening by 2010, there is a need to develop an appropriate mutation panel specific for CF newborn screening. Another population based project underway is assessing the accuracy of CF newborn screening in infants born with meconium ileus. An R01 has been funded by NHGRP-ELSI to evaluate the impact on parents of DNA-based genetic

testing in the newborn screen.

Brigham & Women's Hospital NICU is a major teaching facility for Newborn Medicine for all of Harvard's Boston Combined Pediatric Residency Training Program residents. For 3-4 months per year, as attending neonatologist, medical students (2), pediatric residents (9), and neonatology fellows (3) are supervised and taught clinical neonatology. Night and weekend call involves teaching of additional trainees. Supervision and teaching occurs approximately 30 hours per attending month, with 5 hours/month preparation. I have played a primary role in the development and administration of a formal curriculum for teaching pediatric residents and medical students about newborn medicine. Our division's approach to clinical teaching had been through "catch as catch can" presentations by the attending of the month. Teaching was highly variable in quality and content. In 1991, I was empowered to convert our curriculum to one with a fixed content presented by consistent standards. All residents were then exposed to consistent material during their NICU rotations. This program, the Neonatology Core Curriculum, is accompanied by an extensive syllabus. My ongoing responsibilities include setting the educational content, administering the schedules, coordinating with housestaff, editing the syllabus, and acquiring feedback from the house staff to return to the speakers. The curriculum is highly rated by the pediatric housestaff and has been looked upon as a model for other programs within Children's that are restructuring their resident and fellow educational programs. With the creation of the Boston Combined Residency Program in Pediatrics, I now coordinate the Newborn Medicine curriculum for Boston Medical Center and Brigham & Women's Hospital rotations.

In 2003, I modified the curriculum to take advantage of the web-based teaching resource, My Courses, used by Harvard Medical School for medical students. This is one of the first adaptations of this system for use in teaching residents. The NCC has been given an HMS course number (PD512-NCC.1 and .2). The syllabus, resources, and lectures are being loaded to the web page for access by Pediatric residents during their NICU rotations. The system will be used to give the residents virtual access to the curriculum from terminals in the care area. They will be able to provide feedback via online questionnaires. Test development is underway, as well as the use of virtual patient cases for self-teaching. I am a tutor for GDRB (Genetics, Development and Reproductive Biology) and was invited to author one of the courses 5 cases. This case demonstrates the risks and benefits of population based DNA screening for both CF carrier status in women, and CF newborn screening. I also participate in HT160 (Molecular Biology and Genetics in Modern Medicine) as a lecturer and tutor.

I actively practice in the field of neonatology. My areas of expertise are perinatology (including clinical planning and counseling regarding prenatal diagnosis of congenital disorders), newborn lung diseases (surfactant therapy of RDS, treatment of bronchopulmonary dysplasia, management of congenital pulmonary anomalies), cystic fibrosis in the newborn, and use of molecular genetics in the diagnosis of newborn disorders. In 1989, I developed the Prenatal Consultation Service at Brigham & Women's Hospital, offered by neonatologists for parents of fetuses with known anomalies. I am a member of the Division of Newborn Medicine, Children's Hospital, a group of nearly 30 physicians who are responsible for patient care in Level I, II, and III nurseries at Children's, BIDMC, BWH, Newton Wellesley, and North Shore Hospitals. My main clinical responsibilities are at BWH, where I am a member of the physician Core Group that runs the 45-bed Neonatal Intensive Care Unit (NICU). Patient issues range in complexity from routine prematurity to extremely complex critically ill newborns with medical and ethical aspects related to extremely low birth weight and multiple or rare congenital anomalies. I am responsible for approximately 15% of the NICU attending coverage, including in-house night coverage, which includes front-line delivery room resuscitation, direct NICU care provision.

In my clinical practice, I have worked closely with Perinatologists and Prenatal Sonographers. Improved technologies have increasingly allowed identification of problems that will be evident in the newborn period. In 1990, I developed a system at Brigham and Women's Hospital for providing and tracking pediatric prenatal consults. This service provides important information to parents, and allows for linkage to appropriate pediatric subspecialists prior to delivery. I have collaborated with

several investigators in looking at the accuracy and the impact on outcome of some fetal diagnoses.

I have been retained by the New England Newborn Screening Program as Co-Director of the Massachusetts Cystic Fibrosis Newborn Screening Pilot Program. In this role, the testing algorithm, laboratory assay, and protocols for information transmission have been developed. I am responsible for presenting results and recommendations to physicians in the community, coordination of evaluation and care with CF Centers, an ongoing evaluation of the screening algorithm and its impact. This is a contribution that I have made to clinical care of nearly all newly diagnosed CF patients in Massachusetts since 1999. Since MA initiated this program, the number of newborns in the US screened for CF has increased from 5% to about 25%. Although Massachusetts is the third state in the nation to offer such screening, it was the first to initiate outside of a research project. I have been instrumental in aiding other states to add CF to their newborn screening panels. It is hoped that the long-term outcome of these infants will be optimized by presymptomatic detection and early therapy. In 2003, our group published data on the four-year experience of offering optional CFNBS to 320,000 newborns, using a two-tiered immunoreactive trypsinogen / multiple allele (27 CFTR mutations) algorithm (the first protocol of its kind in the US). The publication of my Pediatrics paper on primary DNA diagnosis of CF in infants inaccessible to pilocarpine iontophoresis may also have had an impact on the early diagnosis of infants with CF and other disorders diagnosed by DNA analysis. The CDC and Journal of Pediatrics invited me to co-edit a supplement (published September 2005) on CF Newborn Screening that presents an international update that resulted from a workshop at the CDC in 2003.

Given my joint training in pediatric pulmonary medicine and neonatology, I am frequently consulted by my colleagues regarding medical management of BPD, and thus was invited to contribute to the Little, Brown Manual of Newborn Care that represents the practices of our clinical group, and to a chapter in Basic Mechanisms of Pediatric Respiratory Disease, 2nd edition.

## **B. Funding Information**

- |           |   |
|-----------|---|
| 1989-1994 | Investigator, US Department of Education, Family-Focused Developmental Care and Intervention for Very Low Birthweight Preterm Infants   |
| 1990-1991 | Co-P.I., Private Grant, Use of Exosurf in the Treatment of Respiratory Distress Syndrome  |
| 1991      | Co-P.I., N.I.H., Small Equipment Grant, Association of Non-DeltaF508 Mutations with Mild Pulmonary Disease in Patients with Borderline or Normal Sweat Tests  |
| 1991-2000 | P.I., Ross/Abbott, A Curriculum for the Education of Pediatric Residents in Newborn Medicine  |
| 1992-1994 | P.I., American Lung Association, Association of Borderline Sweat Test with Cystic Fibrosis  |
| 1993      | Investigator, Genzyme, Framingham, MA, Validation of Alternative Method of Sample Collection Using Buccal Cells as a DNA Source for Genetic Analysis in Cystic Fibrosis   |
| 1993-1999 | P.I., N.I.H. - NIDDK, K08, Association of CFTR Mutations and Borderline Sweat Tests   |
| 1994      | P.I., N.I.H., Small Equipment Grant   |
| 1994-1995 | Investigator, Biotechnology General, Use of Intratracheal rhCuZnSOD for Prevention of Chronic Lung Disease in Low Birthweight Infants, Phase II trial   |
| 1995-1998 | Consultant, D.O.E., Developmental Intervention in Support of IUGR Preterm Infants   |
| 1996-     | Co-P.I., Biotechnology General, The safety and efficacy of r-hCuZSOD to prevent bronchopulmonary dysplasia when administered intratracheally to premature neonates with respiratory distress syndrome. A Phase-III, multiple-dose study |
| 1996-1997 | P.I., Ortho-McNeil Pharmaceutical Corp, Genotyping Newly Diagnosed Patients with Cystic Fibrosis  |
| 1997-1998 | P.I., Joint Program in Neonatology, A Novel Method for Newborn Screening of   |

- Cystic Fibrosis
- 1999-2001 Investigator, Medimmune, Phase IV Study of Safety of Synagis for the Prophylaxis of RSV in Children with CF
- 2000-2004 Investigator, N.I.H., R01, Consumer Prospective on the Promise of Gene Therapy
- 2001-2007 Investigator, N.I.H., SCOR, Response of the Newborn Lung Injury, Inflammation, and Repair: Effect on developing lung
- 2001-2006 P.I., N.I.H., R01, Parent Education on DNA Testing in the Newborn Screen
- 2002 Consultant, General Electric, Outcome of Prenatally Diagnosed Chest Masses
- 2002-2006 Co-P.I., N.I.H.-N.I.E.H.S., RFA, Study of Estrogen Activity in Development
- 2003- Investigator, Cystic Fibrosis Foundation, DHA supplementation of Formula for Newborns with Cystic Fibrosis
- 2004- Consultant, HRSA, Distribution of Genetic Resources for Newborn Screening in the Northeast Region
- 2006- Investigator, N.I.H. NHLBI, SCCOR, Pulmonary Hypertension (PHtn) in the Newborn: Project 7 - Superoxide Dismutase and inhaled NO for Treatment of PHtn in infants with Congenital Diaphragmatic Hernia

### C. Report of Other (Non-Funded) Activities

- Co-P.I. Outcome of a cohort of newborns with CF identified through newborn screening in MA
- P.I. Genotypes and Phenotypes of hypertrypsinogenemic newborns with borderline sweat chloride levels
- Investigator Impact of Fetal MRI on Accuracy of Prenatal Diagnosis of Cleft Palate
- P.I. Prospective follow-up of a CF cohort identified through IRT/DNA screening who have R117H as one of 2 CFTR mutations.
- Investigator Modification of HCELL on Cord Blood Stem Cells for Optimization of Transplantation
- P.I. Prevalence of CF in newborns with meconium ileus reported to the MA CF newborn screening program

### D. Report of Teaching

#### 1. Local contributions

##### a. Medical School Courses

1987-2000	<u>IN710M.23 Introduction to Clinical Medicine</u>		
	Preceptor	10 Medical Students	<i>contact time</i> 30 hours/year for 1 year(s) <i>prep time</i> none reported
1991-	<u>HST 160: Molecular Biology and Genetics in Modern Medicine</u>		
	Lecturer	50 Graduate Students	<i>contact time</i> 3 hours/year for 1 year(s) <i>prep time</i> 5 hours/year for 1 year(s)
	Preceptor	50 Graduate Students	<i>contact time</i> 12 hours/year for 1 year(s) <i>prep time</i> none reported
1991-1997	<u>HST 181: Molecular Biology and Genetics in Modern Medicine</u>		
	Lecturer	25 Medical Students 25 Other Students	<i>contact time</i> 3 hours/year for 1 year(s) <i>prep time</i> 3 hours/year for 1 year(s)

1995	<u>Independent Study Tutorial, Biochemistry</u>			
	Lecturer	1 Other Students	<i>contact time</i> none reported	<i>prep time</i> 1 hours/week for 0 week(s)
	Tutor	1 Other Students	2 hours/week for 16 week(s)	1 hours/week for 16 week(s)
2001-2003	<u>MCH204 Survey Child and Maternal Health Newborn Screening Seminar</u>			
	Lecturer	40 Graduate Students	<i>contact time</i> 3 hours/year for 1 year(s)	<i>prep time</i> 4 hours/year for 1 year(s)
2002-	<u>IN703.0 Genetics, Embryology and Reproduction</u>			
	Preceptor	8 Medical Students	<i>contact time</i> 5 hours/week for 5 week(s)	<i>prep time</i> 5 hours/week for 5 week(s)

### **c. Local Invited Presentations**

#### **Advanced Human Genetics Course**

- 1998      Molecular Genetics of Cystic Fibrosis, Children's Hospital  
Lecturer: 30 participants, 2 hours contact time per year, 2 hours prep time per year
- 2000      Cystic Fibrosis, Children's Hospital
- 2001      Cystic Fibrosis, Children's Hospital
- 2004      Genetics of Pulmonary Disorders, Brigham and Women's Hospital

#### **Advances in Pediatrics**

- 2000      Newborn Screening, Children's Hospital

#### **Antenatal Diagnostic Rds**

- 1999      Newborn Screening for Cystic Fibrosis, Brigham and Women's Hospital

#### **Basic Science Seminar**

- 1999      Chronic Lung Disease, Joint Program in Neonatology

#### **Boston Pediatric Pulmonary Rds**

- 1998      Newborn Screening for Cystic Fibrosis, Massachusetts General Hospital

#### **Boston Perinatal Program Rds**

- 1999      A Pilot Program for Cystic Fibrosis Newborn Screening in Massachusetts, Tufts-NEMCH

#### **Clinical Genetics Seminar**

- 2000      CF Newborn Screening, Harvard Medical School

## **Grand Rounds**

- 1992 Newborn Bowel Obstruction in Cystic Fibrosis, Children's Hospital, Surgery
- 1996 Diagnosis of Cystic Fibrosis in the Newborn, Tufts - New England Medical Center, Dept Pediatrics
- 1999 CF Newborn Screening, Newton-Wellesley Hospital, Pediatrics
- 1999 Cystic Fibrosis, Brigham and Women's Hospital, Pathology
- 1999 CF Newborn Screening, New England Medical Center, Pediatrics
- 1999 CF Newborn Screening, Massachusetts General Hospital, Pediatrics
- 1999 CF Newborn Screening, Salem Hospital, Perinatology
- 1999 CF Newborn Screening, St. Elizabeth's Hospital, Neonatology
- 1999 A Pilot Program for CF Newborn Screening in MA, Children's Hospital
- 2000 CF Newborn Screening, Framingham Metro West Hospital, Pediatrics
- 2001 Population Screening for CF, Beth Israel Hospital, Obstetrics
- 2004 Update on CF Newborn Screening, Children's Hospital, Newborn Medicine
- 2004 Newborn Screening for Cystic Fibrosis, Children's Hospital

## **Housestaff Conference**

- 2000 An unusual Case of CF detected by newborn screening, Children's Hospital
- 2004 Newborn Screening, Children's Hospital

## **Interview**

- 2000 DNA testing in Newborn Screening, PBS - NOVA

## **JPN Clinical Conference**

- 1998 Update on Newborn Screening in Massachusetts , Children's Hospital  
Lecturer: 10 participants, 1 hours contact time per year, 5 hours prep time per year
- 1999 CF Newborn Screening, Children's Hospital

## **JPN Outreach Program**

- 1997 Apparent Life Threatening Events and Management of Apnea in Infants, Falmouth Hospital, Falmouth, MA

## **Midwives Conference**

2001 CF Newborn Screening, Brigham and Women's Hospital

### **Neonatal Fellow Lecture Series**

1987 Injury in Developing Lung, Children's Hospital  
Lecturer: 10 participants, 1 hours contact time per year, 3 hours prep time per year

2004 Chronic Lung Disease, Children's Hospital

2005 Chronic Lung Disease, Children's Hospital  
Lecturer: 15 participants, 1 hours contact time per year, 3 hours prep time per year

### **Neonatal Nursing Conference**

1989 Nutrition in BPD, Brigham and Women's Hospital

### **Neonatology Rounds**

1998 Update on Clinical Trials of Recombinant Human CuZn Superoxide Dismutase,  
Massachusetts General Hospital

### **NICU Nursing Boat Conference**

2001 Newborn Screening, Brigham and Women's Hospital

### **NICU Nursing Update**

2005 Mechanical Ventilation of Newborns, Brigham and Women's Hospital  
Lecturer: 30 participants, 1 hours contact time per year, 2 hours prep time per year

### **NICU Research for Nursing**

2002 rh-CuZnSOD: Antioxidant Protection of the Premature Lung from Development of  
Chronic Lung Disease, Brigham and Women's Hospital

### **Perinatal Epidemiology Conf.**

2004 CF Newborn Screening, Beth Israel Hospital

### **Perinatal Epidemiology Conf.**

1999 A Pilot Program for Cystic Fibrosis Newborn Screening in Massachusetts, Beth  
Israel Hospital

2001 Longterm Pulmonary Outcome of Infants Randomized to SOD, Beth Israel Hospital

### **Perinatal Rounds**

1998 Cystic Fibrosis Newborn Screening, Massachusetts General Hospital

### **Perinatology Rounds**

2005 Newborn Screening: Role of the Obstetrician, Brigham and Women's Hospital  
Lecturer: 20 participants, 1 hours contact time per year, 3 hours prep time per year

### **Pulmonary Conference**

- 1999 Newborn Screening for Cystic Fibrosis, Children's Hospital
- 2000 CF Newborn Screening, Children's Hospital
- 2002 CF Genetics – screening and standards: Impact of 5T, 7T, 9T, Children's Hospital
- 2006 Update on CF Newborn Screening, Children's Hospital

### **Radiology Teaching Conference**

- 1997 Update on Cystic Fibrosis , Children's Hospital  
: 10 participants, 1 hours contact time per year, 5 hours prep time per year

### **Science Retreat, Dept. of Med.**

- 1990 Dysfunctional C1 inhibitor - Ta: Deletion of Lys-251 results in acquisition of a unique N-glycosylation site., Children’s Hospital
- 1993 Allelic association of CFTR intron 17B sequence variant 3500-140C in patients with borderline sweat chloride concentrations, Children’s Hospital
- 1997 CFTR allele frequencies in a cohort of subjects with borderline sweat chloride concentrations, Children’s Hospital

### **Seminar**

- 1999 CF Evening Seminar, Children's Hospital, Pulmonary Division
- 2002 Poly T testing in Cystic Fibrosis, New England Regional Genetics Group (NERRG)

### **Women's Health Conf.**

- 2000 Newborn Screening, Brigham and Women's Hospital
- 2001 Newborn Screening, Brigham and Women's Hospital

### **d. Continuing Medical Education Courses**

- 1990- Pediatric Postgraduate Course: RDS - New Therapies
- 1999- 36th Update in OB: PROM and Prematurity
- 1999- CF Symposium
- 2002- Newborn Screening: What Clinicians Should Know
- 2006 Cystic Fibrosis Newborn Screening: An Opportunity to Improve the Health of Children Through Early Diagnosis and Treatment

### **e. Advisory and Supervisory Responsibilities in Clinical or Laboratory Setting**

- 1993- 13 Medical Students for 100 hrs/year, direct supervision and interaction, Joint Program in Neonatology
- 1995- 12 Undergraduate, Graduates, Fellow for 250 hrs/year, mentoring in a lab, Brigham and Women's Hospital

#### **f. Leadership Roles**

- 1991- Director, Neonatology Core Curriculum: A Curriculum in Newborn Medicine for Pediatric Residents, Joi, Harvard Medical School  
Responsibility: Developed content and syllabus, and coordinated pediatric resident curriculum in Newborn Medicine for Children's Hospital, Massachusetts General Hospital, and Boston Medical Center housestaff who rotate through Children's Hospital NICU and Brigham and Women's Hospital NICU and Well Newborn Nurseries.
- 1991 Lecturer, chronic lung disease, Joint Program in Neonatology, Resident Neonatology Core Curriculum, Brigham and Women's Hospital  
Responsibility: 1 medical student, 5 pediatric residents/month, 1 hour seminar, 10 hours preparation/year
- 1993 Lecturer, Newborn Bowel Obstruction in Cystic Fibrosis, Surgical Grand Rounds, Children's Hospital  
Responsibility: Lecturer, 30 Genetics fellows, 2 hour seminar, 2 hours preparation
- 1993 Lecturer, Chronic Lung Disease, JPN Outreach Program, Norwood Hospital  
Responsibility: Lecturer
- 1994 Lecturer, Channing Research Seminar, Channing Laboratories  
Responsibility: Lecturer on Role of CFTR Genotype, Patient's Sex, and Mucoïd Pseudomonas aeruginosa Infection and Immunity Status in Predicting Pulmonary Outcome in Cystic Fibrosis
- 1994 Lecturer, Significance of Prenatal Detection of Echogenic Bowel, Perinatal Rounds, Beth Israel Hospital  
Responsibility: Lecturer
- 1994 Lecturer, Update on Artificial Surfactant and RDS, Radiology Teaching Conference, Children's Hospital  
Responsibility: 10 Radiology fellows, 1 hour seminar, 5 hours preparation
- 1994 Lecturer, American Board of Medical Genetics Fellows Course on Advanced Human Genetics, Children's Hospital  
Responsibility: Lecturer on Molecular Genetics of Cystic Fibrosis
- 1995 Research Career Development Conference, Joint Program in Neonatology, Brigham and Women's Hospital  
Responsibility: 10 Neonatology fellows, 1 ½ hour seminar, 5 hours preparation
- 1996 Genetics Rounds, Tufts-New England Medical Center  
Responsibility: Lecturer, Diagnosis of Cystic Fibrosis in the Newborn

## **2. Regional, national, or international contributions**

## **a. Invited Presentations**

### **Invited Lecture**

#### *International*

2003 CF Newborn Screening Workshop, Atlanta, GA (video and transcript at <http://www.cdc.gov/ncbddd/cf/meeting.htm>), Centers for Disease Control and Prevention, US Department of Health and Human Services, Public Health

#### *National*

- 1990 Update on Newborn Medicine - Management of BPD, American Academy of Pediatrics Annual Meeting
- 1999 A Pilot Program for CF Newborn Screening in Massachusetts, Winthrop University Hospital, SUNY Stonybrook
- 2000 Cystic Fibrosis Newborn Screening in Massachusetts, Michigan Department of Community Health
- 2001 Cystic Fibrosis Newborn Screening, North American Cystic Fibrosis Conference
- 2003 Newborn Screening for Cystic Fibrosis in New York, Ross Neonatology Conference, SUNY Stonybrook
- 2003 Newborn Screening for Cystic Fibrosis, Babies and Children's Hospital, New York, NY, Pulmonary Division
- 2004 Care Guidelines for the CF Newborn identified through NBS, Oregon Department of Public Health
- 2005 Massachusetts CF Newborn Screening Program, 19th North American Cystic Fibrosis Conference
- 2005 Implementation of Cystic Fibrosis Newborn Screening Programs, South Central Regional CF Consortium and Baylor School of Medicine
- 2006 Implementation of CF Newborn Screening, Danemiller Foundation, Rochester, NY
- 2006 Implementation of CF Newborn Screening, Danemiller Foundation, Rochester, NY
- 2006 Implementation of CF Newborn Screening, Danemiller Foundation, Birmingham, AL
- 2006 Workshop in Role of Family History in Primary Care Pediatrics: Family History and Cystic Fibrosis, CDC, Atlanta GA

#### *Regional*

- 1999 Update on Newborn Screening, NE Perinatal Society
- 1999 Cystic Fibrosis Newborn Screening in Massachusetts, Maine Medical Center, Portland, ME

### **Plenary Presentation**

### *International*

- 1992 Management and outcome of infants with dilated bowel on prenatal ultrasound: Prevalence of Cystic Fibrosis (CF), XIth International Cystic Fibrosis Congress, Dublin, Ireland
- 1999 Effects of infection and Immune Status in a model for predicting pulmonary outcome in cystic fibrosis., American Thoracic Society, International Conference, San Diego, CA.

### *National*

- 1988 Effect of hyperoxia on fetal rat lung fibroblast and type II alveolar epithelial cell SOD I mRNA levels, Society for Pediatric Research, Washington, D.C.
- 1990 Dysfunctional C1 inhibitor - Ta: Deletion of Lys-251 results in acquisition of a unique N-glycosylation site, American Society for Clinical Investigation, Washington, D.C.
- 1994 A model for predicting pulmonary outcome in cystic fibrosis from genotype, mucoid pseudomonas aeruginosa (MPA) colonization status, North American Cystic Fibrosis Conference: Late Breaking Science. Orlando, FL
- 1999 Impact of CFNBS on Pediatrician Decision to Perform Sweat Tests , Am Society of Human Genetics, SF, CA
- 1999 Need for sweat test confirmation in CF Newborn Screening, Am Society of Human Genetics, SF, CA
- 1999 Impact of CFNBS on Pediatrician Decision to Perform Sweat Tests, 14th National Neonatal Screening Symposium, St. Louis, MO
- 2000 Newborn CF carriers are at increased risk for Hypertrypsinogenemia, Pediatric Academic Societies/AAP Joint Conference, Boston, MA
- 2003 Outcome after an initial borderline sweat test in hypertrypsinogenemic infants detected through CF newborn screening, 17th Annual North American Cystic Fibrosis Conference, Anaheim, CA
- 2004 Workgroup on Cystic Fibrosis Newborn Screening, Fairfax, VA, Cystic Fibrosis Foundation

### *Regional*

- 1987 Effect of Methylprednisolone (MP) on Pulmonary Recruitment of Polymorphonuclear Leukocytes (PMN) in a Rat Model of Oxygen Toxicity, New England Perinatal Society
- 1988 Effect of Hyperoxia on Cellular Levels of SOD mRNA - A Model for the Study of Antioxidant Regulation in Newborn Lung , New England Conference on Perinatal Research

### **Poster Presentation**

#### *National*

- 1996 Ion and liquid transport by distal lung epithelia from a DF508/3849+10kb human CF fetus. Barker PM, Bosworth DG, Boucher RC, Ya, 10th Annual North American

**4. Description of major curriculum offerings, teaching cases or innovative educational programs developed**

2005      Educational Program  
Role of the CF Clinician in the Implementation and Maintenance of CF Newborn Screening Programs: 4 hour Short Course sponsored by the CF Foundation offered to an international audience prior to the start of the 2005 North American CF Conference

---

## Part III: Bibliography

### Original Articles

1. Parad R, Simmons G, Feldman N, Huber G. Impairment of adaptive tolerance to oxygen toxicity by systemic immunosuppression. *Chest*. 1975;67(2 Suppl):42S-43S.
2. Gitlin JD, Parad R, Taeusch HW. Exogenous surfactant therapy in hyaline membrane disease. *Semin Perinatol*. 1984;8(4):272-82.
3. Gitlin JD, Soll RF, Parad RB, Horbar JD, Feldman HA, Lucey JF, Taeusch HW. Randomized controlled trial of exogenous surfactant for the treatment of hyaline membrane disease. *Pediatrics*. 1987;79(1):31-7.
4. Ariga T, Igarashi T, Ramesh N, Parad R, Cicardi M, Davis AE. Type I C1 inhibitor deficiency with a small messenger RNA resulting from deletion of one exon. *J Clin Invest*. 1989;83(6):1888-93.
5. O'Rourke PP, Crone RK, Vacanti JP, Ware JH, Lillehei CW, Parad RB, Epstein MF. Extracorporeal membrane oxygenation and conventional medical therapy in neonates with persistent pulmonary hypertension of the newborn: a prospective randomized study. *Pediatrics*. 1989;84(6):957-63.
6. Parad RB, Kramer J, Strunk RC, Rosen FS, Davis AE. Dysfunctional C1 inhibitor Ta: deletion of Lys-251 results in acquisition of an N-glycosylation site. *Proc Natl Acad Sci U S A*. 1990;87(17):6786-90.
7. Parad RB, Gerard C. A sequence variation in intron 17B of the cystic fibrosis transmembrane conductance regulator gene. *Hum Mutat*. 1992;1(3):258-9.
8. Davis E, III, Aulak K, Parad RB, Stecklein HP, Eldering E, Hack CE, Kramer J, Strunk RC, Bissler J, Rosen FS. C1 Inhibitor hinge region mutations may convert the inhibitor to a substrate or may result in the inability to interact with target proteases. *Nat Genet*. 1992;1:354-58.
9. Bromley B, Estroff JA, Sanders SP, Parad R, Roberts D, Frigoletto FD, Benacerraf BR. Fetal echocardiography: accuracy and limitations in a population at high and low risk for heart defects. *Am J Obstet Gynecol*. 1992;166(5):1473-81.
10. Estroff JA, Parad RB, Frigoletto FD, Benacerraf BR. The natural history of isolated fetal hydrothorax. *Ultrasound Obstet Gynecol*. 1992;2(3):162-5.
11. Estroff JA, Parad RB, Benacerraf BR. Prevalence of cystic fibrosis in fetuses with dilated bowel. *Radiology*. 1992;183(3):677-80.
12. Davis AE, Aulak K, Parad RB, Stecklein HP, Eldering E, Hack CE, Kramer J, Strunk RC, Bissler J, Rosen FS. C1 inhibitor hinge region mutations produce dysfunction by different mechanisms. *Nat Genet*. 1992;1(5):354-8.
13. Estroff JA, Parad RB, Teele RL, Benacerraf BR. Echogenic vessels in the fetal thalami and basal ganglia associated with cytomegalovirus infection. *J Ultrasound Med*. 1992;11(12):686-8.
14. Richards B, Skoletsky J, Shuber AP, Balfour R, Stern RC, Dorkin HL, Parad RB, Witt D, Klinger KW. Multiplex PCR amplification from the CFTR gene using DNA prepared from buccal brushes/swabs. *Hum Mol Genet*. 1993;2(2):159-63.
15. The Cystic Fibrosis Genetic Analysis Consortium, Population variation of common cystic fibrosis mutations. *Hum Mutat*. 1994;4:167-77.
16. Estroff J, Parad R, Share J, Benacerraf B. Second trimester prenatal findings in duodenal and esophageal atresia without tracheoesophageal fistula. *J Ultrasound Med*. 1994;13:375-79.
17. Estroff JA, Parad RB, Share JC, Benacerraf BR. Second trimester prenatal findings in duodenal and esophageal atresia without tracheoesophageal fistula. *J Ultrasound Med*. 1994;13(5):375-9.
18. Parad RB, Applegate K, Doubilet PM, Fishman SJ, Estroff JA. Occult fetal bowel obstruction: ileal atresia presenting in a newborn infant after normal antenatal sonography. *J Ultrasound Med*.

1995;14(2):161-3.

19. Estroff JA, Parad RB, Barnes PD, Madsen JP, Benacerraf BR. Posterior fossa arachnoid cyst: an in utero mimicker of Dandy-Walker malformation. *J Ultrasound Med.* 1995;14(10):787-90.
20. Bromley B, Parad R, Estroff JA, Benacerraf BR. Fetal lung masses: prenatal course and outcome. *J Ultrasound Med.* 1995;14(12):927-36; quiz p1378.
21. Parad RB. Heterogeneity of phenotype in two cystic fibrosis patients homozygous for the CFTR exon 11 mutation G551D. *J Med Genet.* 1996;33(8):711-3.
22. Davis JM, Rosenfeld W, Richter SE, Parad RB, Gewolb IH, Spitzer A, Carlo W, Couser R, Price A, Flaster E, Kassem N, Edwards L, Tierney J, Horowitz S. Safety and pharmacokinetics of multiple doses of recombinant human CuZn superoxide dismutase administered intratracheally to premature neonates with respiratory distress syndrome. *Pediatrics.* 1997;100:24-30.
23. Parad RB. Buccal cell DNA mutation analysis for diagnosis of cystic fibrosis in newborns and infants inaccessible to sweat chloride measurement. *Pediatrics.* 1998;101(5):851-5.
24. Chiba-Falek O, Parad RB, Kerem E, Kerem B. Variable levels of normal RNA in different fetal organs carrying a cystic fibrosis transmembrane conductance regulator splicing mutation. *Am J Respir Crit Care Med.* 1999;159(6):1998-2002.
25. Parad RB, Gerard CJ, Zurakowski D, Nichols DP, Pier GB. Pulmonary outcome in cystic fibrosis is influenced primarily by mucoid *Pseudomonas aeruginosa* infection and immune status and only modestly by genotype. *Infect Immun.* 1999;67(9):4744-50.
26. Davis JM, Richter SE, Biswas S, Rosenfeld WN, Parton L, Gewolb IH, Parad R, Carlo W, Couser RJ, Baumgart S, Atluru V, Salerno L, Kassem N. Long-term follow-up of premature infants treated with prophylactic, intratracheal recombinant human CuZn superoxide dismutase. *J Perinatol.* 2000;20(4):213-6.
27. Van Marter LJ, Allred EN, Pagano M, Sanocka U, Parad R, Moore M, Susser M, Paneth N, Leviton A. Do clinical markers of barotrauma and oxygen toxicity explain interhospital variation in rates of chronic lung disease? The Neonatology Committee for the Developmental Network. *Pediatrics.* 2000;105(6):1194-201.
28. Van Marter LJ, Allred EN, Leviton A, Pagano M, Parad R, Moore M. Antenatal glucocorticoid treatment does not reduce chronic lung disease among surviving preterm infants. *J Pediatr.* 2001;138(2):198-204.
29. Wheeler PG, Smith R, Dorkin H, Parad RB, Comeau AM, Bianchi DW. Genetic counseling after implementation of statewide cystic fibrosis newborn screening: Two years' experience in one medical center. *Genet Med.* 2001;3(6):411-5.
30. Cullen A, Van Marter LJ, Allred EN, Moore M, Parad RB, Sunday ME. Urine bombesin-like peptide elevation precedes clinical evidence of bronchopulmonary dysplasia. *Am J Respir Crit Care Med.* 2002;165(8):1093-7.
31. Davis JM, Parad RB, Michele T, Allred E, Price A, Rosenfeld W. Pulmonary outcome at 1 year corrected age in premature infants treated at birth with recombinant human CuZn superoxide dismutase. *Pediatrics.* 2003;111(3):469-76.
32. Als H, Gilkerson L, Duffy FH, McAnulty GB, Buehler DM, Vandenberg K, Sweet N, Sell E, Parad RB, Ringer SA, Butler SC, Blickman JG, Jones KJ. A three-center, randomized, controlled trial of individualized developmental care for very low birth weight preterm infants: medical, neurodevelopmental, parenting, and caregiving effects. *J Dev Behav Pediatr.* 2003;24(6):399-408.
33. Comeau AM, Parad RB, Dorkin HL, Dovey M, Gerstle R, Haver K, Lapey A, O'Sullivan BP, Waltz DA, Zwerdling RG, Eaton RB. Population-based newborn screening for genetic disorders when multiple mutation DNA testing is incorporated: a cystic fibrosis newborn screening model demonstrating increased sensitivity but more carrier detections. *Pediatrics.* 2004;113(6):1573-81.
34. Wilfond BS, Parad RB, Fost N. Balancing benefits and risks for cystic fibrosis newborn screening: implications for policy decisions. *J Pediatr.* 2005;147(3 Suppl):S109-13.

35. Parad RB, Comeau AM, Dorkin HL, Dovey M, Gerstle R, Martin T, O'Sullivan BP. Sweat testing infants detected by cystic fibrosis newborn screening. *J Pediatr.* 2005;147(3 Suppl):S69-72.
36. Parad RB, Comeau AM. Diagnostic dilemmas resulting from the immunoreactive trypsinogen/DNA cystic fibrosis newborn screening algorithm. *J Pediatr.* 2005;147(3 Suppl):S78-82.
37. Comeau AM, Parad R, Gerstle R, O'Sullivan BP, Dorkin HL, Dovey M, Haver K, Martin T, Eaton RB. Challenges in implementing a successful newborn cystic fibrosis screening program. *J Pediatr.* 2005;147(3 Suppl):S89-93.
38. Comeau AM, Parad R, Gerstle R, O'Sullivan BP, Dorkin HL, Dovey M, Haver K, Martin T, Eaton RB. Communications systems and their models: Massachusetts parent compliance with recommended specialty care after positive cystic fibrosis newborn screening result. *J Pediatr.* 2005;147(3 Suppl):S98-100.

### **Proceedings of Meetings**

1. Parad, R, Farrell, P, Campbell, P. Newborn Screening for Cystic Fibrosis: Evaluation of Benefits and Risks and Recommendations for State Newborn Screening Programs. In: Proceedings from a Workshop cosponsored by Centers for Disease Control and Prevention, US Department of Health and Human Services, Public Health Service, National Center on Birth Defects and Developmental Disabilities and the Cystic Fibrosis Foundation. *J Pediatr*; November 20-21, 2003; Atlanta, Georgia. ;2005. p. S1-S114 .

### **Reviews/Chapters/Editorials**

1. Gitlin JD, Parad R, Taeusch HW. Exogenous surfactant therapy in hyaline membrane disease. *Sem in Perinatol.* 1984;(8):272-282.
2. Parad RB, Wohl MEB. Bronchopulmonary dysplasia. *Curr Opin Pediatr.* 1990;(2):459-464.
3. Parad R. Ontogeny of non-immune defense mechanisms. *Semin Perinatol.* 1992;(16):97-105.
4. Parad RB. Applications of genetic information regarding the gene responsible for cystic fibrosis (Part 1). *The International Association of Cystic Fibrosis Adults Newsletter.* 1994;(40):3-8.
5. Parad RB. Applications of genetic information regarding the gene responsible for cystic fibrosis (Part 2). *The International Association of Cystic Fibrosis Adults Newsletter.* 1995;(41):3-9.
6. Parad RB and Comeau AM. Cystic Fibrosis Newborn Screening. *Pediatric Annals.* 2003;32(8):528-35.

### **Books, Monographs, and Textbooks**

1. Fox R, Parad R, Demling R, Merrigan M. Increased permeability of isolated rat lungs perfused with an oxygen radical generator (purine-xanthine oxidase) under constant pressure conditions. In: *Physiology of Oxygen Radicals* (Taylor A, editor). American Physiological Society;1986.
2. Parad R. Chronic Lung Disease (formerly Bronchopulmonary Dysplasia). In: *Manual of Neonatal Care* (Cloherty JP, Stark AR, editors). 3rd Boston: Little, Brown;1991. p. 237-246.
3. Parad R, Berger T. Chronic Lung Disease. In: *Manual of Neonatal Care* (Cloherty JP, Stark AR, editors). 4th Little, Brown;1997. p. 378-388.
4. Parad RB. Developing fetal diagnostic techniques. In: *Prenatal Care* (McCormick MC, Siegel JE, editors). Cambridge University Press;1999. p. 231-243.
5. Davis JM, Parad R. The role of oxidant injury in the pathogenesis of bronchopulmonary dysplasia. In: *Basic Mechanisms of Pediatric Respiratory Disease* (Haddad GG, Abman SH, Chernick V,

editors). 2nd B.C. Decker;2002. p. 505-517.

6. Parad R. Bronchopulmonary Dysplasia (Chronic Lung Disease). In: Manual of Neonatal Care (Cloherty JP, Eichenwald, EC, Stark AR, editors). 5th Lippincott, William;2003.

### **Educational Materials**

1. Johnson, L, Keefer, C, Parad, R and O'Brien, S. Neonatology Core Curriculum, Volume I (2005 edition). 1991.
2. Parad, R, Ringer, S. Neonatology Core Curriculum, Volume III (2006 edition). 1991.
3. Parad, R, Ringer, S. Neonatology Core Curriculum, Volume II (2005 edition). 1991.
4. Parad, R and Ren, C. Role of the CF Clinician in the Implementation and Maintenance of CF Newborn Screening Programs. 2005.

### **NonPrint Materials**

1. Barker PM, Pickles RJ, Ye H, Yankaskas JR, Boucher RC, Parad RB. Reduction of Na<sup>+</sup> absorption with adenoviral-mediated gene transfer in DelataF508/3849+10kb human fetal distal lung. Dallas, TX: Tenth Annual North American Cystic Fibrosis Conference;1996.(poster).
2. Rave-Harel N, Chiba-Falek O, Kerem E, Augarten A, Shoshani T, Tal A, Yahav Y, Aviram M, Bentur L, Szeinberg A, Kerem B, Parad RB. The level of normal CFTR transcripts required for normal pulmonary function. Dallas, TX: Tenth Annual North American Cystic Fibrosis Conference;1996.(poster).
3. Barker PM, Bosworth DG, Boucher RC, Yankaskas JR, Parad RB. Ion and liquid transport by distal lung epithelia from a DF508/3849+10kb human CF fetus. Dallas, TX: Tenth Annual North American Cystic Fibrosis Conference;1996.(poster).
4. Parad RB, Osterman J, Gerard C. CFTR allele frequencies in a cohort of subjects with borderline sweat chloride concentrations. Boston, MA: Science Retreat, Department of Medicine, Children's Hospital;1997.
5. Parad RB, Cornier A, Rodriguez-Santana JR, Pedraz L, Osterman J. CFTR genotyping of a cohort of Puerto Rican CF patients: An unexpectedly low mutation detection frequency. Boston, MA: Science Retreat, Department of Medicine, Children's Hospital ;1997.(poster).
6. Tsen LC, Segal S, Camann WR, Datta S, Bader AM, Parad RB. What Maternal risk factors influence the management of neonates at risk for sepsis? American Society of Anesthesiologists;1998.(poster).

### **Abstracts**

1. Parad R, North J, Torday J. Effect of hyperoxia on fetal rat lung fibroblast and type II alveolar epithelial cell SOD I mRNA levels. *Pediatr Res.* 1988;(23):518A.
2. Parad RB, Chen LQ, Handlin B, Gerard C. Allelic association of CFTR intron 17B sequence variant 3500-140C with specific non- F508 CFTR genotypes in cystic fibrosis. *Pediatr Pulmonol.* 1992;(14):266.
3. Parad RB, Estroff JA, Benacerraf BR. Management and outcome of infants with dilated bowel on prenatal ultrasound: Prevalence of Cystic Fibrosis (CF). Presented at XIth International Cystic Fibrosis Congress. Dublin, Ireland. 1992.
4. Parad RB, Estroff JA. Newborns with Cystic Fibrosis (CF) with Bowel Obstruction on Antenatal Ultrasound Have More Complex Obstruction and Poorer Prognosis Than Those Without Antenatal Diagnosis. *Pediatr Res.* 1993;(33):229A.
5. Estroff JA, Parad RB, Benacerraf BR, Barnes PD. Prenatal sonography of callosal dysgenesis

- with associated supratentorial cysts. (Presented at Society for Pediatric Radiology, 37th annual meeting). 1994.
6. Dean M, Schmural S, Osborne L, Corey M, Carrington M, Parad R, Pier G, Knowles M, Knight R. Association of the HLA DQA gene with CF pulmonary disease severity - A multicohort study. *Pediatr Pulmonol* . 1995;(12):(Suppl):206.
  7. Parad RB, Zurakowski D, Nichols DP, Pier GB. A model for predicting pulmonary outcome in cystic fibrosis from genotype, mucoid *Pseudomonas aeruginosa* (MPA) colonization status, and the presence of antibody to MPA. *Pediatr Pulmonol* . 1995;(19):73-86.
  8. Feinberg E, Douglas K, Richardson D, Als H, Sell E, Parad R. Late pulmonary outcomes poorly predicted by early risk factors in very low birthweight infants. *Pediatr Res* April. 1996; (39):263A.
  9. Parad RB, Osterman J, Gerard C. CFTR allele frequencies in a cohort of subjects with borderline sweat chloride concentrations. 11th Annual North American CF Conference. *Pediatr Pulmonol*. 1997;249.
  10. Zurakowski D, DiCauzio JE, Parad RB. Estimating normal renal growth in infants. Abstract, *Journal of American Statistical Association*, Accepted for presentation at Joint Statistical Meetings. 1997.
  11. Parad RB, Cornier A, Rodriguez-Santana JR, Pedraz L, Osterman J. CFTR genotyping of a cohort of Puerto Rican CF patients: An unexpectedly low mutation detection frequency. *Pediatr Pulmonol*. 1997:250.
  12. Biswas S, Richter SE, Rosenfeld WN, Gewolb IH, Parad RB, Couser RJ, Baumgart, Kassem N, Edwards L, Davis JM. Long term follow-up of premature infants treated with prophylactic, intratracheal recombinant human CuZn Superoxide Dismutase (rhSOD). *Pediatr Res*. 1998.
  13. Smith L, Sweet E, Parad R, Ingber D, D'Amore P. Factors affecting superoxide dismutase (SOD) activity in endothelial cells in vitro. *Microvasc Res*. 1998.
  14. Parad RB, Comeau AM, Eaton RB, Dorkin H, Dovey M, Gerstle R, Lapey A, Zwerdling R. Importance of Sweat Test Confirmation in CF Newborn Screening which includes Genotyping (IRT/DNA): Experience with F508C and IVS8 5T/7T/97 in the Massachusetts CF Newborn Screening Pilot Program. *Pediatr Pulmonol*. 1999:Sup 19:214.
  15. Cullen A, Van Marter LJ, Moore M, Parad RB, Sunday, ME. Urine bombesin-like peptide as a predictor for bronchopulmonary dysplasia. *Am J Respir Crit Care Med*. 159. 1999:A152.
  16. Parad RB, Comeau AM, Eaton RB, Dorkin H, Dovey M, Gerstle R, Lapey A, Zwerdling R. Massachusetts Pilot Program for Cystic Fibrosis Newborn Screening Suggests a Difference between Observed and Predicted Incidence, Carrier Frequency and DF508 Allele Frequency. *Pediatr Pulmonol*. 1999:Sup 19:336.
  17. Parad RB, Gerard CG, Zurakowski D, Nichols DP, Pier GB. Effects of infection and immune status in a model for predicting pulmonary outcome in cystic fibrosis (CF). *Am J Respir Crit Care Med*. 159: 1999:A897.
  18. Van Marter LJ, Leviton A, Allred EN, Pagano M, Sanocka U, Parad RB, Moore M, and the Development Epidemiology Network. Clinical markers of barotrauma and oxygen toxicity and inter-hospital variation in rates of chronic lung disease among surviving very low birth weight infants. *Pediatr Res*. 1999.
  19. Parad R, Comeau AM, Eaton R, Dorkin H, Gerstle R, Lapey A, Zwerdling R. Normal Sweat Chloride [Cl<sup>-</sup>] Values at 4 Weeks of Age in Population of Non-Affected Infants Referred to CF Clinic by Newborn Screening. (The 14th National Neonatal Screening Symposium, St Louis). 1999.
  20. Parad R, Comeau AM, Eaton R, Dorkin H, Dovey M, Gerstle R, Lapey A, Zwerdling R. Impact of CF Newborn Screening on Pediatrician's Decisions to Perform Sweat tests on Infants with CF-Like Symptoms. (The 14th National Neonatal Screening Symposium, St Louis). 1999.
  21. Parad R, Eaton R, Comeau A-M. Need for Sweat Confirmation in CF Newborn Screening that

- includes genotyping (IRT/DNA): Experience with F508C and IVS8 5T/7T/9T in the Massachusetts CF Newborn Screening Program. *Am J Hum Genet* 296. 1999:A57.
22. Parad RB, Nield H, Harrison E, Osterman J, Moore M. Occurrence of hyaline membrane disease (HMD) in infants <sup>34</sup> weeks gestation is not explained by carrier state for surfactant protein-B (SP-B) mutation. *Pediatr Res.* 1999.
  23. Parad R, Eaton R, Comeau A-M. Lower predicted false negative cystic fibrosis detections are sought using knowledge of local allele frequencies and an expanded CFTR mutation panel. 4th International meeting of the International Society for Neonatal Screening. Stockholm, Sweden. 1999.
  24. Comeau A-M, Parad R, Eaton R. Dissent as a Mechanism to Provide Choice in Population-Based Public Health Studies: Implementation and Preliminary Analysis. *Am J Hum Genet* (Poster at ASHG meeting, San Francisco, October 1999). 1999;462 :A88.
  25. Parad R, Eaton R, Comeau A-M. Need for Sweat Confirmation in CF Newborn Screening that includes genotyping (IRT/DNA): Experience with F508C and IVS8 5T/7T/9T in the Massachusetts CF Newborn Screening Program. *Am J Hum Genet* (Oral presentation at ASHG meeting, San Francisco, October 1999.). 1999;296:A57.
  26. Estroff J, Mok P, Parad R. Fetal hip sonography: Feasible and likely to be normal. (Presented at Society for Pediatric Radiology, Naples, FL, May 2000.). 2000.
  27. Parad RB, Comeau AM, Harrison E, Gerstle-Thompson J, Eaton R. Newborn Cystic Fibrosis Carriers are at increased risk for Hypertrypsinemia: Does this suggest subclinical pancreatic disease in CF carriers? *Pediatr Res*, (Presented at Platform session on Genetics, APS-SPR meeting, Boston, 2000.). 2000.
  28. Estrella E, Hawley P, Lerner B, Parad R. Cystic Fibrosis Newborn Screening: Will Anxiety from “False Positive” Test Results Influence Testing Decision-Making? (Presented at National Society for Genetic Counselors, 11/2000, Savannah, Georgia.) . 2000.
  29. Davis JM, Rosenfeld WN, Parad R, Richter S, Gewolb I, Couser R, Parton L, Carlo W, Hudak M, Mammel M, Davidson D, Gertsman D, Ramanathan R, Kinsella J, Baumgart S, Donn S, Raju T, Salerno LM, Huang W, Barton N. Improved Pulmonary Outcome at One Year Corrected Age in Premature Neonates Treated with Recombinant Human Superoxide Dismutase. *Pediatr Res.* (Presented at Platform session APS-SPR meeting, Boston, MA, 2000) . 2000.
  30. Comeau AM, Larson C, Parad R, Zytovic T, Eaton R. Use of Common Alleles in the 2nd Tier of a Newborn Screen: Starting Points and Analyses. (Presented at Newborn Screening and Genetic Testing Symposium, 5/01, Raleigh, NC.). 2001.
  31. Parad RB and Comeau AM. A Logistic Regression (LR) Model for Estimating the Risk of Each Cystic Fibrosis (CF) Newborn Screen Positive Infant Being a True Positive (TP) Based on IRT/DNA Testing Performed in the Massachusetts CF Newborn Screening (CFNBS) Algorithm. *Pediatric Research.* 2001.
  32. Estroff JA, Parad RE, Parad RB. Normal sonographic development of the human fetal corpus callosum: when can you see it? How big should it be? *Pediatric Radiology.* 2001;(31):(sup 1) : S9.
  33. Van Marter LJ, Dammann O, Allred EN, Leviton A, Pagano M, Martin C, Parad RB, Moore M. Chorioamnionitis, Mechanical Ventilation, and Postnatal Sepsis as Modulators of Chronic Lung Disease in Premature Infants. *Pediatric Research.* 2001.
  34. Davis JM, Couser R, Parad R, Gewolb I, Huang W, Salerno LM, and Michelle TM for the r-h CuZnSOD Neonatal Study Group. Bio-Technology General Corp. Iselin, NJ. Safety of Recombinant Human Copper/Zinc Superoxide Dismutase in Newborns with Respiratory Distress Syndrome. *AJRCCM.* 2001.
  35. Parad RB, Comeau A, Hawley P, Irons M. Ramifications of Reflexive Poly-T Allele Testing Among R117H Carriers Detected by a Multiallele IRT/DNA CF Newborn Screen. *Proceedings of the Newborn Screening and Genetic Testing Symposium.* 2002:100.

36. Parad R, Comeau A, Eaton R. Racial/Ethnic Differences Between CF Affected, CF Carrier, and Isolated Hypertrypsinogenemic (no mutation) CF Newborn Screen (CFNS) Positive Infants Detected Through a Multiallele IRT/DNA Algorithm. *Proceedings of the Newborn Screening and Genetic Testing Symposium*. 2002:101.
37. Hawley P, Parad RB, Comeau A, Irons M. Unanticipated Outcome from Recent Guidelines for CF Carrier Testing. *Am J Hum Genet*. 2002.
38. Parad RB, Comeau A, Dorkin H, Dovey M, Martin T, Gerstle R, O'Sullivan B. Outcome after an initial borderline sweat test in hypertrypsinogenemic infants detected through CF newborn screening. *Pediatric Pulmonology*. 2003;sup: 222-223.
39. Ward VL, Barnewolt CE, Estroff JA, Levine D, Mehta TS, Parad RB. Work-in-Progress for the SPR Millennium Grant: Fetal MR of Chest Masses. *The Society for Pediatric Radiology*. 2003.
40. Comeau A, Parad RB, Dorkin H, Dovey M, Haver K, Lapey A, Gerstle R, O'Sullivan B. Increased sensitivity at the cost of increased referrals when population-based newborn screening incorporates testing for multiple allele mutations (MM): Cystic Fibrosis (CF) newborn screening (NBS) as a model. *Am J Hum Genet*. 2003;(73):( 5 sup ): 213.
41. Parad RB, Estrella E, Comeau AM, Hawley P. Attitude toward CF newborn screening after receiving false positive results: Impact of genetic counseling on parents identified as carriers. Eighteenth Annual North American Cystic Fibrosis Conference, St. Louis, MO. *Pediatr Pulmonol*. 2004;S27:226-227.
42. Parad RB, Comeau AM, Dovey M, Martin T, Dorkin H, O'Sullivan B, Gerstle R. Prevalence of immunoreactive trypsinogen (IRT) level below newborn screen cutoff in CF that presents with meconium ileus. Eighteenth Annual North American Cystic Fibrosis Conference, St. Louis, MO. *Ped Pulm*. 2004;S27:226.
43. Ward VL, Barnewolt CE, Estroff JA, Levine D, Mehta TS, Parad RB. Work-in-Progress for the SPR Millennium Grant: Fetal MR of Chest Masses. *The Society for Pediatric Radiology*. 2004.
44. Parad RB, Comeau AM, Hale J. Removal of CFTR mutation R117H from the cystic fibrosis (CF) newborn screening (NBS) mutation panel would decrease detection of atypical CF. *Pediatric Academic Societies Meeting*. PAS. 2005;57:2311.
45. McBride J, Parad R, Davis J, Allred L, Zupancic J. Cost analysis on the use of recombinant human superoxide dismutase (rhSOD) at birth in preterm infants to improve pulmonary outcome. *PAS*. 2005;57:1232.
46. Parad R, Comeau A, Sultana Z, Anbar R, Pass K, Caggana M, Dorkin H, Quizon A, Waltz D, Martin M, Schechter M, Borowitz D, Voter K, Ren C, Dozor A, Kaslovsky R, Comber P, O'Sullivan B. Outcomes of a Cohort of Immunoreactive Trypsinogen (IRT)/DNA Cystic Fibrosis Newborn Screening (CFNBS) Positive Infants with R117H as One of Two Detected CFTR Mutations: Worrisome Throat Culture Findings. *Pediatr Pulmonology*. 2005;S28:256.
47. Van Marter L, Allred E, Morey J, Parad R, Vitali S, Kourembanas S. Bilirubin and Bronchopulmonary Dysplasia Among Extremely Low Gestational Age Newborns. *PAS*. 2006.
48. Estroff J, Parad R, Stroehla B, Umbach D and Rogan W. Developing Methods for Studying Estrogen-like Effects of Soy Isoflavones in Infants 3: Ultrasound. *PAS*. 2006.