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I. GENERAL DESCRIPTION

Mission

The Division of Neonatology of the University of Rochester School of Medicine and Dentistry is dedicated to excellence in patient care, to diligent research and to providing outstanding education and training of physicians and scientists. Our values dictate that all colleagues, trainees, patients, and families are treated with respect. The major clinical site is the Neonatal Intensive Care Unit (NICU) at Golisano Children’s Hospital. Our NICU was selected as one of the top NICUs in the country by US News and World Report. The Special Care Nursery (SCN) at Rochester General Hospital is integral to our patient care mission. Our basic research focuses on the molecular and cellular regulation of lung development and injury. Patient-oriented research spans important neonatal diseases, with a focus on treatment of lung, neurological, and retinal disorders. Our faculty members provide clinical education and training to medical students, residents, postdoctoral fellows, nurse practitioners, and community practitioners. An important part of our mission is training in basic and clinical research at many levels, ranging from undergraduates to doctorates in medicine and the basic sciences.

Primary Faculty (2011-2012)

Sanjiv B. Amin, M.B.B.S., M.D., M.S.
Associate Professor of Pediatrics

Kaiser Bijli, Ph.D.
Research Assistant Professor of Pediatrics

Soumyaroop Bhattacharya, M.Ed., M.S.
Senior Associate of Pediatrics

Patricia R. Chess, M.D.
Associate Professor of Pediatrics and of Biomedical Engineering
Director, Neonatal-Perinatal Medicine Fellowship Program
Chair, Department of Pediatrics, Unity Hospital
Medical Director, ECMO Service, Golisano Children’s Hospital

Rita Dadiz, D.O.
Assistant Professor of Pediatrics
Associate Director, Neonatal-Perinatal Medicine Fellowship Program
Director, Simulation-Based Emergency and Safety Training Program, Division of Neonatology

Carl T. D’Angio, M.D.
Associate Professor of Pediatrics and Medical Humanities
Director, Pediatric Clinical Research Office
Director, Neonatal Clinical Research
Associate Director, SCRC

David A. Dean, Ph.D.
Professor of Pediatrics and of Biomedical Engineering

Fabeha Fazal, Ph.D.
Assistant Professor of Pediatrics

Jacob N. Finkelstein, Ph.D.
Professor of Pediatrics, of Radiation Oncology, and of Environmental Medicine
Associate Director, Strong Children’s Research Center
Director of Research, Division of Neonatology

Ronnie Guillet, M.D., Ph.D.
Professor of Pediatrics
Chief, Department of Pediatrics, Highland Hospital

Sema Hart, M.D.
Associate Professor of Pediatrics

Carl Johnston, Ph.D.
Research Assistant Professor of Pediatrics

Nirupama Laroia, M.D.
Associate Professor of Pediatrics
Medical Director, Special Care Nursery, and Section Chief, Neonatology, Rochester General Hospital

Ruth A. Lawrence, M.D.
Professor of Pediatrics and of Obstetrics and Gynecology
Director, Newborn Nursery, Golisano Children’s Hospital at Strong
Director, Breastfeeding and Human Lactation Study Center

Alice Lewand-Taylor, M.D.
Senior Instructor of Pediatrics
Medical Director, Special Care Nursery, Highland Hospital

William M. Maniscalco, M.D.
Professor of Pediatrics
Chief, Division of Neonatology

Thomas J. Mariani, Ph.D.
Associate Professor of Pediatrics, Medicine and Environmental Medicine

Robert H. Notter, M.D., Ph.D.
Professor of Pediatrics and of Environmental Medicine

Michael A. O’Reilly, Ph.D.
Professor of Pediatrics and of Environmental Medicine
Associate Director, Neonatology Research
Director, Perinatal and Pediatric Origins of Disease Program

Dale L. Phelps, M.D.
Professor of Pediatrics

Laura Price, M.D.
Senior Instructor of Pediatrics

Gloria S. Pryhuber, M.D.
Professor of Pediatrics and of Environmental Medicine

Arshad Rahman, Ph.D.
Associate Professor of Pediatrics and of Environmental Medicine

Julie Riccio, M.D.
Senior Instructor, Division of Neonatology
II. Clinical Activities

Golisano Children’s Hospital at Strong

Our clinical goal is to provide outstanding care to all ill newborns in the Finger Lakes Region. The neonatal intensive care unit at Golisano Children’s Hospital at Strong is a level IV facility that can treat all neonatal medical and surgical illnesses. Our 60-bed NICU has extensive technical capabilities, including ECMO, inhaled nitric oxide, and HFOV. We have started the design phase of a new children’s hospital that will have an all new NICU with 64 individual patient rooms. In academic year 2011-2012 our 13 board-certified neonatologists treated 1179 newborns in the NICU; these patients had the full range of medical, surgical, and cardiac disorders. The average daily census in the NICU, in 2011-2012, was 59.9 patients, for a total of 21,917 patient days. Of the 2973 patients born at Strong Memorial Hospital, 908 were admitted to the NICU. An additional 238 patients, who were born at either community hospitals or at other regional hospitals, were transferred to our NICU for advanced care. Our neonatal transport service transferred patients from 19 referring hospitals. Approximately 1 in 12 newborns in our region was treated in the NICU at Golisano Children’s Hospital. In 2011-2012, 114 patients were transferred back to their community hospital for convalescent care and to be closer to their families.

Our very busy NICU is the site for training Pediatric and Internal Medicine-Pediatric house officers, postdoctoral fellows, medical students, neonatal nurse practitioners and physician assistant students. The Neonatology Division also supervises the Normal Newborn Nursery at Strong Memorial Hospital. Two board-certified pediatricians establish policy and procedures and care for normal newborns.

Rochester General Hospital, Unity Hospital, Highland Hospital

At Rochester General Hospital, the Neonatology Division cared for 458 patients in the Level II Special Care Nursery in academic year 2011-2012, amounting to 4,228 patient days. The average daily census was 5.8. Rochester General Hospital had 2470 births in 2010-20121. As a community hospital, the Rochester General SCN is an important training site for Pediatric and Family Medicine residents and medical students. Members of the Neonatology Division are medical directors for the nurseries at Rochester
General, Highland, and Unity Hospitals, and are responsible for establishing consistent policy and procedures for local hospitals.

**Neonatal Continuing Care Program**

To provide outstanding medical care, it is essential that we follow the neurodevelopmental outcome of our NICU “graduates.” The Neonatal Continuing Care Program follows all patients who are discharged from the NICU, either in the Infant and Toddler Clinic (part of the Strong Center for Developmental Disabilities) or in the Neonatal Tracking Program. In the Infant and Toddler Clinic, patients are evaluated by a developmental pediatrician, social worker, a nurse practitioner, and a neonatology fellow; in 2011-2012, the clinic conducted 363 evaluations. The Infant and Toddlers Clinic also evaluates patients who were not in the NICU, but referred from the Monroe County Early Intervention Program. The Neonatal Tracking Program follows all NICU graduates to age 10 through serial questionnaires sent to the patient’s family and pediatrician. The NCCC teams review the tracking forms to identify patients who may need formal evaluation and to obtain long-term follow-up data. In 2011-2012, 339 forms were returned by parents and 3301 forms were returned by pediatricians. To date, over 26,000 patients have been followed by the tracking program.

**NICU Quality Improvement Programs / Initiatives (2009-2011)**

1. **US News and World Report** – The GCH NICU was selected as one of the top 50 NICUs in the country by US News and World Report (number 27), the first clinical area within the Dept of Pediatrics to have earned this honor.

2. **Quality Improvement Programs / Initiatives:**
   a. **NICU expansion**
      1. Gained final certificate of need (CON) approval for 8 additional NICU beds.
      2. With other NICU leaders, finalized a design to accommodate the 8 new bed spaces.
      3. Expanded NICU clinical service to 3 clinical teams
      4. Implemented helper shifts to maintain acceptable staffing levels during periods of high census
   
   b. **IVH Reduction Bundle**
      1. In 2011-2012 the incidence of hypothermia was further reduced for ELBW infants admitted to the NICU from the Delivery Room.
      2. Reduced use of bicarbonate for treatment of metabolic acidosis through greater use of acetate
   
   c. **Family Satisfaction Bundle**
      1. In 2011-2012, we continued the Family Advisory Council Steering Committee, and implemented the following changes.
         a. 24 hr parental visitation seven days per week – including uninterrupted parental visitation during morning work rounds and nursing change of shift
      2. Used Press Ganey Satisfaction Survey Tool to track family satisfaction – developed plan to improve family satisfaction, key elements include 3 clinical teams to reduce patient: attending ratio, mid-level helper shifts, 2 discharge coordinators, orientation video
   
   d. **Patient Safety**
      1. Taught the Line Safety Course (developed in 2008) to educate NICU mid-level providers on early diagnosis and treatment of cardiac tamponade and sterile technique in line placement.
e. ROP Bundle
   1. Targeted oxygen saturation program (OWL) continued
f. Improved Nutrition and NEC prevention
   1. Worked with breast milk committee to increase use of BM and breastfeeding
   2. Developed a nutrition bundle of potentially better practices
   3. Implemented weekly nutrition rounds
   4. Began work on an electronic audit process to measure progress toward achieving nutritional goals.
g. BPD Reduction / Improved Pulmonary Care Bundle
   1. Continued to develop the collaborative Pulmonary / Neonatology discharge program
   2. Along with Susana Arriagada, Patty Chess and the Division continued Pulmonary Bundle.
h. Reduced Nosocomial Infection Rates
   1. Central Line Associated Blood Stream Infection (CLABSI) Initiative – Our NICU continued the CLABSI initiative and our involvement with the NYS CLABSI Collaborative. In 2010, our NICU achieved a CLABSI rate of 1.4/1,000 catheter days
   2. Reduced primary blood stream infections – For VLBW infants, our NICU is now among the 25% of VON centers with the lowest NI rates

Regional Outreach Activities

The Neonatology Division is the Regional Perinatal Center for the Finger Lakes Region of New York State. Integral to the Division’s clinical activities are outreach visits to the 15 referring hospitals in our region. The goals of these visits are to review maternal and neonatal outcomes at the referring hospitals; provide feedback on patients transferred to the NICU at Golisano Children’s Hospital; review clinical policies and procedures; and provide outreach education. In addition, the outreach team compares outcome statistics from the referring hospital to region-wide data. Each hospital is visited one to two times a year by a neonatologist, high-risk perinatologist, neonatal nurse practitioner, and obstetrical nurse practitioner. The Neonatology Division and the High Risk Perinatology Division jointly sponsor Perinatal Forums three times per year for our region. These forums draw nurses, physicians, lactation consultants and others for presentations and discussion of region-wide issues.

Outreach Teaching Assignments

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<thead>
<tr>
<th>Hospital</th>
<th>Neonatologist</th>
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<tr>
<td>Arnot Ogden Medical Center, Elmira, NY</td>
<td>William Maniscalco</td>
</tr>
<tr>
<td>Corning Hospital, Corning, NY</td>
<td>William Maniscalco</td>
</tr>
<tr>
<td>F.F. Thompson Health System, Canandaigua, NY</td>
<td>Timothy Stevens</td>
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<tr>
<td>Geneva General Hospital, Geneva, NY</td>
<td>Nirupama Laroia</td>
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<td>Highland Hospital, Rochester, NY</td>
<td>Rita Dadiz</td>
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<td>Jones Memorial Hospital, Wellsville, NY</td>
<td>William Maniscalco</td>
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<td>Lakeside Memorial Hospital, Brockport, NY</td>
<td>Gloria Pryhuber</td>
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<td>Nicholas Noyes Memorial Hospital, Dansville, NY</td>
<td>Robert Swantz</td>
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<tr>
<td>Unity Hospital, Rochester, NY</td>
<td>Sanjiv Amin</td>
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<td>Olean General Hospital, Olean, NY</td>
<td>William Maniscalco</td>
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<td>Rochester General Hospital, Rochester, NY</td>
<td>Ronnie Guillet</td>
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<td>St. James Mercy Hospital, Hornell, NY</td>
<td>Carl D’Angio</td>
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<td>Schuyler Hospital, Montour Falls, NY</td>
<td>William Maniscalco</td>
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<tr>
<td>United Memorial Medical Center, Batavia, NY</td>
<td>Sanjiv Amin</td>
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<tr>
<td>Via Health of Wayne, Newark, NY</td>
<td>Robert Swantz</td>
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Perinatal Forum Topics (2011-2012)

Contraception and Family Planning

III. Research and Other Scholarly Activities

Research Projects by Faculty Member

Sanjiv B. Amin, M.B.B.S, M.D., M.S.
Dr. Amin’s research interests include studying the effects of jaundice, nutritional, and environmental toxins on developing nervous system in neonates using auditory brainstem responses. He is NIH-funded to study the level of jaundice that is associated with transient or permanent abnormal changes in auditory nervous system in premature and term neonates. He is also studying the effect of lead and other environmental toxins on a developing auditory nervous system; in addition, he is investigating the role of nutritional and hormonal factors on brain development. Dr. Amin’s future interests include long-term neurodevelopmental outcome, including language outcome and central auditory processing disorders of premature and late preterm neonates. In addition, he is interested in studying genetic polymorphism to determine why there are ethnic differences in bilirubin production and susceptibility to bilirubin-induced neurotoxicity. He has been involved in exploring a new technique using fluorescent spectrophotometry to measure free bilirubin levels, a more specific marker of bilirubin-induced neurotoxicity. He is also funded to evaluate dental developmental outcome in premature infants. His work is supported by NICHD, CTSI, and NIDCR.

Kaiser M. Bijli, Ph.D.
Dr. Bijli’s research seeks to understand how pro-inflammatory mediators such as thrombin and tumor necrosis factor alpha (TNF-alpha) mediate the activation of NF-kB, an essential regulator of intercellular adhesion molecule-1 (ICAM-1) in endothelial cells. ICAM-1 is an inducible adhesive protein that serves as a counter-receptor for β2-integrins (CD11/CD18) present on the surface of leukocytes. Interaction of ICAM-1 with β2-integrins ensures stable adhesion of PMN to the vascular endothelium and subsequently, its migration across the endothelial barrier. PMN trafficking by this mechanism in pulmonary tissue and air spaces contributes to the development of lung vascular injury and tissue edema associated with various disease states including Acute Respiratory Distress Syndrome (ARDS). Despite the appreciation of the central role of NF-kB in ICAM-1 expression, precise signaling mechanisms controlling NF-kB activation and thereby ICAM-1 expression in endothelial cells remains largely unknown. The focus of Dr. Bijli’s research is to address the mechanisms by which tyrosine kinases, particularly c-Src, Syk and Pyk2, regulate NF-kB activation and ICAM-1 expression in endothelial cells and to determine the contribution of ICAM-1 in the mechanism of lung PMN sequestration and PMN-dependent lung vascular injury. Recently, Dr. Bijli also started investigating the role of Phospholipase C-epsilon, a member of phospholipase C family of isozymes and Transglutaminase 2, in the above phenomena. Dr. Bijli is a PI on a Scientist Development Grant from American Heart Association and participates in an NIH RO1 grant.

Patricia R. Chess, M.D.
Dr. Chess’s research is on lung injury and repair in the neonate, focusing on mechanical forces in the lung. Models used include murine ventilation and in vitro strain. Collaborative work on assessing efficacy of a biophysically active phospholipase resistant synthetic surfactant in an LPS-induced injury murine model compliments this work. Clinical areas of investigation include optimal modes of ventilation, use of ECMO in respiratory failure, cardiorespiratory dysfunction in congenital diaphragmatic hernia, omega-3 lipids to treat TPN-induced liver dysfunction, and surfactant replacement therapy. A pulmonary potentially best practices bundle for VLBW infants in the NICU has been developed and implemented, and its effect on acute and chronic lung disease is also being investigated. Dr Chess is the site PI for the NICHD neonatal network randomized controlled inositol trial to assess efficacy of inositol supplementation on improving ROP and BPD and efficacy of hydrocortisone to facilitate extubation in VLBW infants. Dr. Chess participates in grants from NICHD and NIHLBI.
Rita Dadiz, D.O.
Dr. Dadiz’s main interest is to improve postgraduate medical and nursing education and family-centered patient care through simulation-based training. She is currently investigating the use of simulation-based training and debriefing methodologies to improve teamwork and communication between obstetric and neonatal healthcare providers and between providers and families during high-risk deliveries. Standardized hand-off and evaluation tools are being developed and tested for reliability and validity. The impact of simulation-based training will be evaluated in the actual delivery room environment. Dr. Dadiz is the recipient of HHS Health Resources and Services Administration award to support her work in educating healthcare providers at the University of Rochester Medical Center and in the Finger Lakes Region of New York State. She has been recognized as a former Dean’s Teaching Fellow at the University of Rochester School of Medicine and Dentistry for her research and interests in education.

Dr. Dadiz also studies the use of inhaled nitric oxide in newborns with persistent pulmonary hypertension. She is the site investigator for a collaborative research project with the University at Buffalo - Women and Children’s Hospital of Buffalo investigating the relationship between methemoglobin and response to inhaled nitric oxide in infants with pulmonary hypertension.

Carl T. D’Angio, M.D.
Dr. D’Angio is the principal investigator for the joint University of Rochester – University of Buffalo center of the NICHD Neonatal Research Network (NRN). The NRN performs clinical trials and observational studies on critically ill newborns cared for in a consortium of 18 neonatal centers, and is currently investigating treatments for respiratory diseases, neonatal encephalopathy and necrotizing enterocolitis, among other disorders. Dr. D’Angio is also the site investigator for the University of Rochester site for the Prematurity and Respiratory Outcomes Program (PROP), an NIH-funded longitudinal study of the antecedents of respiratory disease in the first year among premature infants. He is an investigator at the University of Rochester’s new NIAID-funded Respiratory Pathogens Research Center, which will be exploring respiratory infections among premature infants.

Dr. D’Angio’s research continues to focus on infections, immunology and immunizations in the premature infant. He has recently published Thrasher Research Fund-supported investigation of influenza vaccine immunogenicity in premature infants. Dr. D’Angio has recently published research on prevention of catheter-related infections. Dr. D’Angio’s other major research focus is on comprehension of research permission among parents of infant research subjects. He is conducting an NICHD-funded randomized controlled trial of a cover sheet to improve understanding of research consent.

David A. Dean, Ph.D.
Dr. Dean’s laboratory is focused on the mechanisms of intracellular trafficking of plasmids and DNA-protein complexes as it relates to nonviral gene delivery to the lung. While many aspects of non-viral vector design are being addressed, several critical areas that have not received adequate attention are the cytoplasmic movement and nuclear import of vector DNA. Clearly, without the translocation of plasmid DNA into the nucleus, no gene expression, or "gene therapy" can take place. To this end, the laboratory is studying how plasmids interact with microtubules and microtubule-associated motor proteins to move in a directed fashion through the cytoplasm using a variety of intracellular imaging techniques, biochemical assays, and mass spectrometry approaches. Studies are also underway to understand how plasmids translocate the nuclear pore complex to gain entry into the nucleus in both general and cell-specific situations. Further, new work is aimed at understanding whether and how plasmids move within the nucleus and how this relates to their ability to be expressed. Taken together, these studies will help design improved vectors for gene therapy as well as provide insight into the basic biology of the cell. The second focus of the laboratory is to develop novel treatments for acute lung injury and asthma using electric fields for gene delivery to the lungs of living animals. Dr. Dean’s laboratory has shown that genes can be delivered to the lungs of small and large animals by electroporation and that the genes can have significant therapeutic activity. Using this approach, they have been able to prevent and treat acute lung injury in an endotoxin-induced mouse model of lung injury as airway hyperreactivity in an ovalbumin-sensitization model of asthma. Current studies assess safety and efficacy in a large animal preclinical model in hopes of one day taking this to the clinic. Dr. Dean’s research is supported by several NIH RO1 and R21 grants.
**Fabeha Fazal, Ph.D.**

Dr. Fazal's research seeks to understand the role and regulation of cytoskeletal dynamics in lung vascular inflammation and injury. Intracellular adhesion molecule ICAM-1 plays a key role in the adhesion and transendothelial migration of polymorphonuclear leukocytes (PMN) - a key event in the pathogenesis of acute lung injury. The basis of ICAM-1 expression involves activation of RelA/p65 subunit of the transcription factor NF-kB. Activation of RelA/p65 in turn requires its release from the inhibitory protein IkBa in the cytoplasm and subsequently, its translocation to the nucleus. Whereas the mechanisms of its release have been elucidated, the cytoplasmic events regulating the translocation of RelAp65 to the nucleus remain elusive. The research focuses on how changes in actin dynamics induced by proinflammatory mediators such as thrombin and TNFa, facilitate RelA/p65 nuclear translocation, ICAM-1 expression, lung PMN infiltration and PMN-mediated lung vascular injury in mice. The overall goal of these studies is to develop strategies for interfering with specific signaling events controlling ICAM-1 expression and thereby preventing or limiting lung PMN uptake and lung vascular injury associated with inflammatory diseases such as Acute Respiratory Distress Syndrome (ARDS). This work is funded by an NIH RO1 grant.

**Jacob N. Finkelstein, Ph.D.**

Dr. Finkelstein’s laboratory research emphasizes the role of cell-cell interactions in modulating the pulmonary injury response to physiological and toxicological stimuli. This work includes studies of oxidant-induced signaling in the pulmonary epithelium and macrophages and epithelial and inflammatory cell production of cytokines and chemokines in the regulation of the inflammatory response. Previous research focused on basic cell and molecular biology of the pulmonary alveolar type II cell as the site of pulmonary surfactant system and how oxidant injury can alter key regulatory processes. In addition, the type II cell also plays an important role as the stem cell for renewal of the alveolar epithelium, both in the normal lung development and during epithelial repair and renewal following lung injury. The most recent data suggest that type II cells may also be involved in regulating the inflammatory functions of alveolar macrophages, as well as the actions of interstitial fibroblasts during lung growth or pulmonary fibrosis.

Current research utilizes multiple models of injury with a special emphasis on environmental agents as modulators of cellular function. Studies of inhaled oxidant gases (ozone, hyperoxia), inhaled particulate matter (generated by combustion processes including diesel exhaust) and ionizing radiation (therapeutic as well as accidental release) all provide a platform to study the pulmonary injury response. Another important aspect of recent work is the interaction of engineered nonmaterial’s with cellular signaling systems and how these interactions may result in a toxic response.

The overall goal of the current research is to identify the key control mechanisms involved in epithelial cell and fibroblast proliferation, and in related extracellular matrix synthesis, processing, and assembly. Dr. Finkelstein’s work seeks to define such mechanisms not only during normal lung growth and normal development, but also during the repair of epithelial damage, which may have important implications for pediatric and adult lung disease, including bronchopulmonary dysplasia (BPD). This work is funded by grants from the NIEHS, the EPA, NIAID, NSF and the Department of Defense.

**Ronnie Guillet, M.D., Ph.D.**

Dr. Guillet’s primary research focus is in neonatal brain development and injury. The developing brain is at risk from the effects of centrally acting agents, including hypoxia, seizures, and medications; this risk is due in part to the fact that the brain may be more vulnerable during times of rapid maturational change. Dr. Guillet has an active clinical research program, focused on the neonatal brain. As the Rochester co-investigator for the NICHD Neonatal Research Network grant, she assists the PI and, in particular, is responsible for Network studies involving new treatments for neonatal brain injury. Other areas of clinical research interest for Dr. Guillet include the auditory brainstem evoked response—in particular, its use as a tool to evaluate brain maturation and its relationship to maternal iron status prior to delivery. She is also involved in studies of acute kidney injury in premature infants. Her work is supported in part by grants from the NIH and FDA.

**Carl Johnston, Ph.D.**
Dr. Johnston’s work seeks to understand how the postnatal lung copes with external stress. A critical biological factor playing a role in childhood pulmonary susceptibility is that a significant portion of lung development takes place postnatally. One of the environmental factors relevant to developmental lung disease is the recent increase in complexity and distribution, if not the levels, of airborne pollutants, including allergens and endotoxins, respirable particulate matter, and irritant gases, exposure to which damages various cell types. Among the most important of these are the respiratory epithelium and critical immune effector cell populations. In addition, combined exposures to multiple pollutants may activate several unique signaling pathways that are age dependent and, depending on the sequence of initiation, may result in responses not predicted by evaluating exposures to an individual pollutant. Dr. Johnston’s work depends heavily on mRNA analysis, microarray technology, immuno-histochemistry, and in situ hybridization. This work is supported by participation in several NIH grants.

Nirupama Laroia, M.D.
Dr. Laroia’s research interests have focused on neonatal seizures, especially those related to stroke and hypoxic ischemic injury in the newborn. Her work has included development of criteria for long-term EEG monitoring in neonates at risk for seizures. Current projects include study of neuroprotective strategies in infants with hypoxic ischemic injury, hyperbilirubinemia in the term neonate, use of donor milk in preterm infants, and a qualitative study looking at barriers to communication between obstetricians and pediatricians in the delivery room.

Ruth A. Lawrence, M.D.
Dr. Lawrence’s focus in neonatal care has been nutrition—particularly in human milk and breastfeeding. Because she believes that human lactation has suffered from considerable neglect, she has been spending time revising her textbook, *Breastfeeding: A Guide for the Medical Profession*, now in its seventh edition (2010); her work includes researching the current literature and creating a computerized database and developing consensus. Specific research projects are also being done in collaboration with Dr. Cynthia Howard at Rochester General Hospital. The current funded study involves Vitamin D and its levels in human milk. Breastfeeding mother-infant pairs are recruited to test the impact of high-dose Vitamin D by measuring the levels of Vitamin D in the mother’s milk and in her baby. The tests are also followed by densometry.

Dr. Lawrence is also a consultant to and an investigator with Dr. Ann Dozier in the Department of Community Medicine. Current projects include the impact of epidural anesthesia on breastfeeding; the impact of Desoprophera given to the mother before discharge on breastfeeding and several other exploratory efforts.

Dr. Lawrence has also been involved in efforts to provide human milk for prematures. A product has been produced exclusively from human milk to be used to supplement the milk of a mother who is feeding a premature infant. The product was developed in consultation with Dr. Lawrence by Prolacta Bioscience, a human milk bank. The study was funded by Prolacta. A blinded, randomized study of the supplement will test its impact on the growth of prematures as well as the incidence of infections compared to breastfeeding premature who are supplemented with a bovine product.

Other work based on clinical toxicology issues and prevention education is funded by Health and Human Services grants through the Health Resources and Services Administration and carried out at the Poison Center.

The Ruth A. Lawrence Regional Poison Center was closed December 31, 2010 after 54 years as first Poison Center to answer calls from the public. It has served as a national role model for toxicology services as well as education and prevention activities. The Lactation Study Center and the drug information line continue along with the clinical toxicology service. Dr. Lawrence continues to serve as medical director of the lactation and drug lines.

William M. Maniscalco, M.D.
Dr. Maniscalco’s laboratory research is concerned with pulmonary microvascular development in lung injury. Using various animal models, including a non-human primate model of BPD, this work examines the effects of oxygen and ventilation of immature lung on the development of alveolar capillaries. The major goals of the research are to characterize microvascular development in lung injury and investigate angiogenic and angiostatic regulators in normal and injured lung. Recent work has linked expression of inflammatory CXC chemokine mediators, which regulate angiogenesis and are part of the pathophysiology of BPD, to impaired lung microangiogenesis.

Thomas J. Mariani, Ph.D.
The broad objectives of Dr. Mariani’s laboratory are to identify the genetic mechanisms of susceptibility to chronic lung diseases, particularly focusing upon their developmental antecedents and the influence of environmental factors. Dr. Mariani’s research program focuses upon defining key regulatory networks involved in lung development and maturation, and which may be perturbed in diseased states such as asthma, chronic obstructive pulmonary disease (COPD) and bronchopulmonary dysplasia (BPD). Work focuses predominantly upon defining pathways contributing to regulation of epithelial-mesenchymal interactions and expression of extracellular matrix molecules. His laboratory utilizes genetic modeling in animals, exposure-related models of chronic lung disease and studies of human samples. He is a leader in the application of genome-wide expression array methods to pulmonary biology and lung disease gene/biomarker discovery. This work is currently supported by research grants from the NIH.

Robert H. Notter, M.D., Ph.D.
Dr. Notter’s research focuses on pulmonary surfactant, a complex mixture of lipids and proteins essential for normal respiration. Lung surfactant deficiency in premature infants leads to the neonatal respiratory distress syndrome (NRDS), and surfactant dysfunction/inactivation in patients of all ages is an important contributor to the pathology of clinical acute lung injury (ALI) and the acute respiratory distress syndrome (ARDS). The lethal lung injury syndromes of ALI/ARDS can result from multiple direct pulmonary insults including viral/bacterial pneumonia, gastric or meconium aspiration, lung contusion, hyperoxia, lung transplant and thoracic radiation, as well as from indirect systemic pathologies like sepsis, shock, burn injury, long bone fracture, pancreatitis, and bone marrow transplant. This multi-university collaborative research has a major focus on developing new highly-active synthetic lipid/peptide exogenous surfactants for treating NRDS and direct pulmonary forms of ALI/ARDS. Current NIH Bioengineering Research Partnership (BRP) studies in our laboratory examine the molecular bioengineering, computer analysis, synthesis, and physical chemistry of novel amphipathic peptides with structural homology to native surfactant proteins (SP), and the surface and pre-clinical pulmonary activity of these peptides combined with novel phospholipase-resistant lipids or synthetic biologic lipids in synthetic lung surfactants. Dr. Notter’s research also examines mechanisms of surfactant dysfunction in ALI/ARDS, and considers the use of exogenous surfactants not only as individual agents but also in combination with other pharmaceuticals to concurrently target multiple aspects of lung injury pathology. Prior research in Dr. Notter’s laboratory helped to develop clinically-effective first-generation surfactant therapy for premature infants with animal-derived surfactant drugs, and this is now being extended using sophisticated molecular bioengineering to define and develop novel fully-synthetic lipid/peptide lung surfactants for treating NRDS and direct pulmonary ALI/ARDS.

Michael A. O’Reilly, Ph.D.
The O’Reilly lab consists of an interactive group of senior scientists, graduate students, technicians, and summer undergraduate scholars interested in understanding how neonatal oxygen disrupts lung development and the host response to respiratory viral infections. Premature exposure to oxygen is a major risk factor for neonatal lung disease and can cause bronchopulmonary dysplasia (BPD), a chronic form of lung disease frequently seen in preterm infants with very low birth weight. While better clinical care has reduced mortality, children born prematurely are at increased risk for reduced lung function, respiratory viral infections, pulmonary hypertension, and asthma. According to the NHLBI web site (http://www.nhlbi.nih.gov/new/press/06-07-26.htm), the annual costs of treating infants with BPD in 2005 were $26.2 billion dollars. Hence, there is an urgent need to understand how oxygen supplementation permanently disrupts lung development and how these changes enhance susceptibility to respiratory infections. Using the mouse as a model system, our studies are focused on defining how high oxygen at birth alters growth and differentiation of progenitor cells critical for lung development and host defense
against infections. We also investigate how oxygen-induced damage activates molecular pathways that control whether cells live or die. We then collaborate with physicians who study health outcomes and treat children born prematurely. By integrating research findings in cells, mice, and humans, we hope to ultimately identify therapeutic opportunities for improving the long-term health of children born prematurely. This work is supported by several NIH grants and a grant from the March of Dimes.

Dale L. Phelps, M.D.
Dr. Phelps’ research is on retinopathy of prematurity (ROP). Insoitol supplementation from birth to reduce ROP is her main project, funded by both the National Institute of Child Health and Development and the National Eye Institute.

Gloria S. Pryhuber, M.D.
As a clinician scientist, Dr. Pryhuber maintains a basic science laboratory, and acts as communicating Principal Investigator for the University of Rochester / University at Buffalo (URUB) research site for the Prematurity and Respiratory Outcomes Program (PROP, NHLBI U01). This program is composed of 6 Pediatric Pulmonary/Neonatology centers around the country and is focused on identifying biomarkers and mechanisms of chronic lung disease in premature infants. In the development, and now implementation of the PROP, she has worked very closely with the Rochester Human Immunology Center in order to bring advances in immunologic techniques to the study of premature newborns. As a Neonatologist, and because of the strong infrastructure that we have put in place for the proprogram and the NICHD Neonatal Research Network, including collaborative arrangements with the Maternal Fetal Medicine, Neonatology and Pediatric Pulmonary Divisions, she has excellent access to adequate numbers of premature and full term infant patients to ensure the timely screening, enrollment, and completion of clinical studies/trials with these populations. In addition, her laboratory has notable experience in collecting, storing, processing, and performing quality assessment and analysis of animal and human subject samples. She works with a number of investigators at the UR and external on “Identification and Validation of Molecular Markers for BPD.” This project provides support for investigation and validation of altered gene expression in human neonatal lung samples with and without chronic lung disease. Her research studies in pulmonary biology, neonatology and immunology, have prepared her to participate in and support collaborative work between the Human Immunology Center, and the Departments of Pediatrics, Divisions of Neonatology, Infectious Disease and Pulmonology. She has collaborated with Drs. Topham, Gill and Caserta, on two NIH proposals to study CD8+ T cells in responses to viruses and vaccines with correlations to gut microbiomics and measures of immune modulators in breast milk. This year, these collaborations have proven to be highly productive with the successful competition for the National Respiratory Pathogens Research Center being awarded to the UR (pis David Topham and Ann Falsey) and the awarding of funding from the RPRC to Dr.s Pryhuber and Caserta to carry forward the project entitled “Impact of Respiratory Virus Infections and Bacterial Microbiome Shifts on Lymphocyte and Respiratory Function in Infants Born Prematurely or Full.” Dr Pryhuber is highly enthusiastic to work with this multidisciplinary group of collaborators, as to do so will contribute.

Arshad Rahman, Ph.D.
Dr. Rahman and his research group want to know how pro-inflammatory mediators such as the coagulation protease thrombin and the pro-inflammatory cytokine TNFα, released in high amounts during sepsis and other inflammatory conditions, mediate neutrophil (PMN) sequestration and emigration in the lung and thus induce lung vascular injury. In particular, they are interested in defining the critical signaling pathways mediating activation of the transcription factor NF-κB, a master regulator of inflammation, in the endothelium, an important cellular target of proinflammatory mediators in perpetuating and amplifying the inflammatory responses. Importantly, NF-κB is now also implicated in the resolution phase of inflammation, tissue repair and homeostasis, and in mitochondrial respiration. These emerging new roles of NF-κB have challenged the view of therapeutic inhibition of NF-κB and have yielded the concept that “dampening” rather than “abolishing” NF-κB activation may be a safe and effective treatment strategy for ALI/ARDS and other inflammation-associated diseases. Guided by this principle, Dr. Rahman and colleague are focused on uncovering the intricate signaling network in control of NF-κB activation with a view to identifying the possible therapeutic targets whose inhibition may allow for selective suppression of detrimental inflammation without compromising the host defense response, tissue repair and homeostasis -
a problem associated with current treatment options to control ALI/ARDS and other inflammatory disease states.

More recently, Dr. Rahman and colleague have also been focusing on understanding the regulation and function of endothelial cell (EC) autophagy and its relationship with EC inflammation in the context of ALI. Their novel and exciting findings that autophagy and inflammation are linked in the lung endothelium have prompted them to identify the mechanistic link between these two fundamental processes (autophagy and inflammation), address the relevance of this linkage in the pathogenesis of ALI, and evaluate the therapeutic potential of autophagy inhibition against evolving ALI. The research in Dr. Rahman’s lab uses genetically modified mice, primary cell cultures, and multidisciplinary approaches ranging from biochemical, cellular, and molecular biology to in vivo gene delivery and lung physiology to address these questions of fundamental importance.

Kristin Scheible, M.D.

Premature infants are considered immunocompromised hosts. They are more susceptible to infection and suffer from diseases mediated in part by dysregulation of immune cells, including BPD, PVL, and Necrotizing Enterocolitis. Little is known about the nature of T cell responses in neonates, and less is known about T cell behavior and function in premature infants. Her research focuses on the effect of early activation of T cells in the context of premature infants with poor thymic recovery. Utilizing high-parameter flow cytometry on human umbilical and peripheral cells, she is able to examine T cell phenotype, homeostasis and antigen-specific responses, as well as trace changes that occur over time in postnatal immune development. By combining in vitro data with clinical data, she can understand the role that T cell dysregulation may play in mediating diseases of prematurity. In addition to the project on neonatal immune development, she is also studying adult CD8+ T cell responses to influenza virus through the New York Influenza Center of Excellence. This area of research increases our understanding of a phenotype and functional profile that may define a “protective” CD8+ T cell response to an ever-shifting but frequently encountered antigen. Her work is support by an NIH K award.

Laurie Steiner, MD

Red blood cells comprise one in four cells in the human body. To maintain an appropriate hematocrit, the body must produce approximately 2 million red blood cells per second. The maturation of a committed erythroid progenitor to a functional red blood cell is a complex process that involves significant changes in gene expression during a time of rapid cell division. The goal of Dr. Steiner’s research is to understand the molecular mechanisms the drive this process, in both normal and disease states. She is particularly interested in studying how chromatin modifiers regulate erythropoiesis, as they are potential therapeutic targets for the treatment of β-globinopathies, such as sickle cell anemia and β-thalassemia. By combining genomics technologies, such as chromatin immunoprecipitation coupled with high throughput sequencing, with functional assays, such as shRNA knockdown, she is able to study how chromatin modifiers regulate erythroid-specific gene expression and influence erythroid maturation. Complimentary to this project, she is using similar methodologies to study the cis- and trans- acting factors that regulate modifier genes of β-thalassemia, with the hope of identifying new targets for therapeutic intervention. This area of research will enhance our understanding of how ubiquitously expressed chromatin modifiers exert cell-type specific effects, as well as provide novel insights into molecular pathways important in human disease. Her work is supported by a NIH K08 award and the Cooley’s Anemia Foundation.

Timothy P. Stevens, M.D., M.P.H.

Dr. Stevens’ research interests are in pulmonary outcome of premature infants, with emphasis on the neonatal antecedents that cause preterm infants to require ongoing pulmonary care in childhood. Studies include two prospective clinical research projects investigating the effect of supplemental oxygen exposure on the risk of wheezing in later childhood. As a secondary study to The NICHD SUPPORT Trial, a randomized trial of clinical treatment of high- vs. low-targeted oxygen saturations in preterm infants < 28 weeks’ gestation, Dr. Stevens is investigating the effect of differential oxygen exposure on symptomatic airway dysfunction in preterm infants. In a Rochester-based cohort, the level of early oxygen exposure and consequent oxidant stress is being investigated as predictors of later symptomatic airway dysfunction in
premature infants 28-32 weeks’ gestation. Dr. Stevens is also interested in the effects of air pollution on preterm birth and pulmonary symptoms in preterm infants.

Robert J. Swantz, M.D.
Dr. Swantz’ primary research interest is undergraduate medical education. He directs the 3rd year clerkship and 4th year sub-internship for the Department of Pediatrics, and is actively involved with the Dean’s office in the management and evaluation of the medical school curriculum and the admission and advancement of medical students.

Jennifer L. Young, Ph.D.
Dr. Young’s research focuses on understanding extracellular matrix (ECM) signaling during lung injury and repair. Specifically, the focus of the laboratory is on understanding the role of the matricellular signaling molecule CCN1/Cyr61 in lung injury. CCN1 is an ECM-associated signaling molecule that functions to promote cell adhesion, migration, survival and differentiation in vascular development. In the context of the lung, they have found that CCN1 together with TNFα causes apoptosis of alveolar epithelial cells and lung fibroblasts. Because CCN1 is induced in the lungs of patients with lung diseases such as chronic obstructive pulmonary disease (COPD) and acute respiratory distress syndrome (ARDS), they hypothesize that CCN1, together with inflammatory mediators such as TNFα causes cell death of primary lung cells in vivo, thus contributing to lung injury. Dr. Young’s studies focus on elucidating the molecular mechanism(s) of cell death and survival of primary lung cells in response to CCN1 and TNFα using cultured cells as well as in vivo models of lung injury.

In addition to CCN1’s apoptotic function, they have found that CCN1 functional knock-out mice have greatly reduced lung inflammation after LPS treatment. This suggests that CCN1, in addition to playing a role in apoptosis and cell survival, is likely to be involved in the inflammatory response as well. Thus, they are actively investigating the modulation of inflammation by CCN1 in models of acute lung injury and fibrosis in vivo. The ultimate goal of these studies is to gain a better understanding of the complex pathology of lung diseases so that better treatments can be developed. Research funding comes from the American Heart Association.

Scientific Presentations

Abstracts Presented at 2012 Pediatric Academic Societies’ Annual Meeting, Boston, MA

Amin SB, Saili A, Saluja S, Kler N, Laroia N. Unbound bilirubin and acute bilirubin encephalopathy in late preterm and term infants with severe jaundice.

Amin SB, Orlando M, Wang H. Unbound bilirubin and auditory neuropathy spectrum disorder in premature infants.

Combs A, Kacica M, Stevens T, Horgan M, Shields E, Gerber T. Are there variations in feeding practices and policies in the New York State Designated Regional Perinatal Centers?

Mazen N, Amin SB. Cumulative intake of intralipid and parenteral nutrition associated cholestasis.


Riccio, J. Amin S Bilirubin displacing effect of ibuprofen in premature infants with unconjugated hyperbilirubinemia.


Abstracts Presented at 2012 American Thoracic Society 108th International Conference, San Francisco


Botta, D, Ballesteros-Tato, A, Martin, K, Hartson, L, Rangasamy, T, Mariani, T, Randall, T, Cockayne D, Stevenson C, Lund, F. Deficiency of the Transient Receptor Potential Melastatin 2 (RP2) Cation channel Provides Protection Against Pulmonary Inflammation in a Murine Model of Chronic Obstructive Pulmonary Disease (COPD).

Go, D, Bhattacharya, S, Krenitsky, D, Hyyck, H, Gascon, J, Ren, C, Mariani T, Pryhuber, G. Tracheal Aspirate Connective Tissue Mast Cell (MCCT) Peptidases Are Increased in Infants at Risk for Bronchopulmonary Dysplasia.

CJ Johnston, R Gelein, D Cory-Slechta, JN Finkelstein, G Oberdoerster. Early Life Inhalation of ambient particles and ozone mixtures sensitize the lung to later life viral challenges.

CJ Johnston, CM Manning, JP Williams, TD Randall, J Rangel-Moreno, E Hernady, JN Finkelstien. Loss of CCSP-/- containing cells is associated with severity of radiation late effects.

Solleti, S, Bhattacharya, S, Rangasamy, T, Bijli, K, Rahman, A., Sime, P, Mariani, T. Effects of PPAR1 Upon Pathological Responses to Cigarette Smoke Are Associated With Binding and Inhibition of NF-kB.


Solleti, SK, Srisuma, S, Bhattacharya, S, Rangel-Moreno, J, Bijli, K, Lungar, V, Gascon, J, Randall, T, Rangasamy, T, Rahman, A, Mariani, T. SerpineE2 Deficiency is Associated with Alterations in Lung Lymphocyte Trafficking

Abstracts Presented at Other National Research Meetings (2011-2012)


Johnston CJ, Manning CM, Williams JP, Randall TD, Rangel-Moreno J, Hernady E, Finkelstien JN. Neonatal irradiation sensitizes mice to adult pulmonary influenza. Society of Toxicology, San Francisco CA. | March 2012


Manning CM, Johnston CJ, Lawrence B, Williams JP, Finkelstein JN. Radiation exposure exacerbates lethality and lung pathologhy following a subsequent influenza A virus infection. Society of Toxicology, San Francisco CA. | March 2012

Manning C, Hohnston C, Williams J. Neonatal Irradiation Sensitizes Mice to Adult Pulmonary Inflammatory Challenges. 14th International Congress of Radiation Research, Warsaw, Poland, August 2011.


Weinschreider J, Dadiz R. Coming to the table: Debriefing for patient safety, Annual convention of the Association of Women’s Health, Obstetric and Neonatal Nurses, Las Vegas, NV. Oral presentation.


**Recent Study Sections and Advisory Committee Memberships**

**Sanjiv B. Amin, M.B.B.S, M.D., M.S.**
Reviewer for NIH Developmental Brain Disorder Study Section, 2011
Reviewer for NIH Loan Repayment Proposals, 2011, 2012
CTSI/GCRC Advisory Committee member, University of Rochester

**Patricia R. Chess, M.D.**
Pediatric Planning Committee, American Thoracic Society; 2001 - present
Research Grant Review Committee, American Lung Association, 2001 – present
Austrian Science Fund ad hoc reviewer, 2002-2009
Wellcome Foundation UK, 2009
NYS-DOH Perinatal grant reviewer, 2006-present
NYS-DOH Perinatal grant reviewer, 2006-2009
Pediatric Research Society Grant reviewer 2009-present
UR Medical School MD with Distinction in Research Committee 2011-present
UR George Eastman Circle Advisory Committee 2011-present

**Carl T. D’Angio, M.D.**
Grant Review Committee, New York State Empire Clinical Research Investigator Program, 2005-2011
Member, NIAID Ancillary Studies in Immunomodulation Clinical Trials Special Emphasis Panel, 2009
Member, NIAID Clinical Trial Special Emphasis Panel, 2011
Member, US Food and Drug Administration Pediatric Advisory Committee, 2008-2011
Member, NIAID Clinical Trial Special Emphasis Panel, 2012

David A. Dean, Ph.D.
Member, Nanotechnology Study Section, NIH, 2011-2023
Member, Gene and Drug Delivery Study section, NIH, 2007-2010
External advisory committee, program project grant on “Pathophysiology of alveolar epithelial lung Injury,” Northwestern University, 2007-present
Cardiovascular Gene Therapy Committee member, American Society for Gene Therapy, 2007-2010
Respiratory Tract Gene Therapy Committee member, American Society for Gene Therapy, 2010-2013
Member, NIH NIBIB P41 Center Grant Site Visit Study Section, 2009
Member, American Lung Association Grant Review Committee 2008-2011
Chair, NIH NHLBI Novel Approaches for Gene Therapy (R21/R33) Study Section, 2009
Member, College of CSR Reviewers, NIH 2010-2012

Jacob N. Finkelstein, Ph.D.
Ad hoc Reviewer:
- National Cancer Institute (NCI),
- National Heart, Lung, and Blood Institute (NHLBI)
- National Institute of Environmental Health Science (NIEHS) ONES Review Panel
- National Institute of Allergy and Immunologic Diseases,
- James and Esther King Biomedical Research Program (State of Florida Biomedical Research Program)
- Tobacco Related Diseases Research Program (California)
- Member F10A Study Section

California National Primate Center Davis California Advisory Committee
San Juaquin Valley Particulate Matter research Center Davis California
NIEHS Board of Scientific Councillors

Ronnie Guillet, M.D., Ph.D.
Member (ad hoc), NIH Study Section, 2009, 2010

Ruth A. Lawrence, M.D.
Advisory Committee to promote breastfeeding among clients at Early Head Start, Washington, D.C.;
Pediatric Advisory Committee, FDA, present

William Maniscalco, MD
Pediatric Academic Society Abstract Reviewer

Thomas J. Mariani, Ph.D.
Permanent Member, NIH/Lung Injury Repair and Remodeling Scientific Review Group, 2012-2018
Participant, NHLBI Workshop on “Molecular Determinants of Lung Development”, 2011
Ad Hoc Reviewer
- NIH/Lung Injury Repair and Remodeling Scientific Review Group, 2012
- NIH/Lung Injury Repair and Remodeling Scientific Review Group, 2011
- NIH/NHLBI RFA(ZHL1) Scientific Review Group, 2011
- External Grant Reviewer, Harvard-NIEHS Center Pilot Projects, 2010
- Internal Grant Reviewer, Strong Children’s Research Center Pilot Projects, 2012
- Internal Grant Reviewer, Environmental Health Sciences Center Pilot Projects, 2012
- Internal Grant Reviewer, CMRC Pilot Projects, 2012
- Faculty Oversight Committee, URMC eRecord-Research, 2012
- Faculty Oversight Committee, URMC Functional Genomics Center, 2011-2012

Robert H. Notter, M.D., Ph.D.
Standing National Grant Review Committee, Ikaria/INO/Forest Advancing Newborn Medicine Fellowship Grant Program, 2001-2011
Solicited Ad Hoc Grant Reviewer for NIH and foundations

Michael A. O’Reilly, Ph.D.
NIH, ad hoc reviewer, multiple study sections

Gloria S. Pryhuber, M.D.
Reviewer
National Institutes of Health, 2010 – present
SEP/SRG KO1, KO8, R25, RO1 Reviews (2 – 3 Study Sections per year)

Arshad Rahman, Ph.D.
Member, NIH Center for Scientific Review Special Emphasis Panel for Challenge (RC1) grant application, Review Group:ZRG1 VH-D (58) R, 2009
Co-chair, NIH Center for Scientific Review special Emphasis Panel, Review Group: 2010/05 ZRG1 CVRS-G (02) M
Co-chair, NIH Center for Scientific review special Emphasis Panel, review Group: 2010/10 ZRG1 CRV-G (02)
Member, American Heart Association Molecular Signaling 4, Review Group: 2011

Timothy P. Stevens, M.D., M.P.H.
New York State Obstetric and Neonatal Collaborative (NYSONQC) Steering Committee Member and Data Panel Chair 2008-present

IV. Teaching Activities

Pediatric Residents

Faculty of the Division of Neonatology teach Pediatrics and Medicine-Pediatrics residents in the Neonatal Intensive Care Unit at Golisano Children’s Hospital at Strong and Pediatrics and Family Practice residents at the Special Care Nursery at Rochester General Hospital. The Neonatology Division teaches approximately 70-75 residents during their rotations in the NICU and SCN. Clinical teaching activities include Attending Rounds (5 days/week), Work Rounds (7 days/week), Health Team Rounds (1 day/week), High-Risk Perinatology Rounds (1 day/week), NICU Pathology Rounds (1 day/week), and Ethics Rounds (1 day/4 weeks). Division faculty were also active in teaching on the Pediatric Wards and in the Neonatal Resuscitation course for residents in Pediatrics, Medicine-Pediatrics, Emergency Medicine, and Obstetrics and Gynecology.

Neonatal-Perinatal Medicine Fellowship Program

The three-year, ACGME accredited, Neonatology Fellowship fully meets the requirements of the Neonatal-Perinatal Medicine subspecialty board of the American Board of Pediatrics. The program provides intensive training in clinical care of high-risk newborns in a Level III NICU (including ECMO, HFOV, and inhaled nitric oxide), a Level II Special Care nursery, an 8-bed Level I nursery, within a 13-county referral region. Fellows acquire active clinical and/or laboratory-based research experience, including study design, institutional review, study performance, analysis, presentation, and publication. Several alternative career development tracks are available, including the traditional Basic Science/Clinical Science Concentration, a Clinical Evaluation Sciences Concentration, including courses within the Master of Public Health Program: two Combined Programs, a Master of Public Health-Clinical Investigation track, and a
Master of Science in Business Administration-Medical Management (MSBA-MM) track. Additional commitment may be required if a Combined Program is elected.

**Neonatal-Perinatal Medicine Fellows (2011-2012)**

Susana Arriagada, M.C. (Third year)
Leave of absence for Pediatric Residency:
University of Rochester Medical Center, 6/14/11-6/24/13
Medical School: University of Chile
Residency Program: University of Chile, Santiago

Rebecca Barnett, D.O. (Third year) {Graduated 2012}
Medical School: West Virginia School of Osteopathic Medicine
Residency Program: University of Arizona, Tucson

Yesef Antongiorgi, M.D. (Third year) {Graduated 2012}
Medical School: Ponce School of Medicine Puerto Rico
Residency Program: Jackson Memorial Hospital, University of Miami

Echezona Maduekwe, MD (Third Year)
Medical School: University of Nigeria, Nigeria
Residency Program: Bronx-Lebanon Hospital Center, Bronx, NY

Majd Dardas, MD (Third Year)
Medical School: American University of Beirut
Residency Program: SUNY Health Science Center at Syracuse, Syracuse, NY

Ahmad El Samra, MD (Second Year)
Medical School: American University of Beirut, Lebanon
Residency Program: SUNY Health Science Center at Syracuse, Syracuse, NY

Kunal Gupta, MBBS (Second Year)
Medical School: Government Medical College and Hospital, Chandigarh, India
Residency Program: Institute of Medical Education and Research, Chandigarh, India

Syed Shah, MBBS (Second Year)
Medical School: Punjab Medical College, Pakistan
Residency Program: Bronx Lebanon Hospital, Bronx, NY

**Basic Science Teaching in Graduate/Undergraduate Courses**

In addition to the clinical-related teaching activities, several faculty in the Division of Neonatology have secondary appointments in other departments of the University of Rochester, and participate in teaching in graduate and undergraduate courses. These faculty members include Drs. Chess, Dean, Finkelstein, Mariani, O'Reilly, Pryhuber, and Rahman, who lecture in and/or direct graduate or undergraduate courses in the Toxicology Program and in the Departments of Environmental Medicine, Biomedical Engineering, and Chemical Engineering. Division faculty also participate in lecturing to medical students during courses in the Double Helix Curriculum.

**Education and Training of Basic Science Undergraduate and Graduate Students**

Division of Neonatology faculty perform teaching activities relating to the training of non-medical graduate students and postdoctoral fellows, in addition to medical residents and clinical fellows. Graduate students and basic science postdoctoral fellows currently in the Division or completing their studies in the past year are:
Current Graduate Students and Mentors in Laboratories

Melissa Badding  
Program: Toxicology  
Thesis Advisor: David Dean,

Bradley Buczynski  
Program: Toxicology, Ph.D.  
Mentor: Michael O’Reilly, Thesis Advisor

Benjamin Danziger  
Program: Biomedical Engineering  
Thesis Advisor: David Dean

Marta Ekstrom  
Program: Toxicology  
Thesis Advisor: David Dean

Mootaz Eldib  
Program: Biomedical Engineering (received MS July 2010)  
Thesis Advisor: David Dean

Megan Gable  
Fellow in Gastroenterology (2010 – present)  
Mentor: Gloria Pryhuber

Diana Go  
Fellow in Pulmonology (2011 – present)  
Mentor: Gloria Pryhuber

Lidza Kalifa  
Program:  
Mentor: Michael O’Reilly

Khatera Rahmani  
Program: Toxicology  
Thesis Advisor: David Dean

Katherine Ringo  
Program: Toxicology, PhD  
Mentor: Jennifer Young; David Dean

Sean Gehen  
Program: Toxicology, Ph.D.  
Mentor(s): Michael O’Reilly, Thesis Advisor

Jennifer Gewandter  
Program: Biochemistry and Biophysics, Ph.D.  
Mentor(s): Michael O’Reilly, Thesis Advisor

Matthew Giannandrea, Ph.D.  
Program:  
Mentor: Michael O’Reilly
Casey Manning  
Program Toxicology  
Mentor: Jacob Finkelstein, Thesis Advisor

Aaron Miller  
Medical Scientist Training Program, Integrated Graduate program, Northwestern University  
(received PhD December 2008)  
Thesis Advisor: David Dean

Jennifer Murzycki, M.D., Ph.D.  
Pediatric Residency research track  
Mentor: Patricia Chess,

Emily Resseguie  
Program: Toxicology, Ph.d.  
Mentor: Michael O’Reilly, Thesis Advisor

Erik Rushton  
Program: Toxicology, Ph.D.  
Mentor(s): Jacob Finkelstein, Thesis Advisor

Chia (Ta) Thach  
Program: Toxicology  
Mentor: Jacob Finkelstein

YuChieh (Melissa) Wu  
Program: Biomedical Genetics, Ph.D.  
Mentor: Michael O’Reilly, Thesis Advisor

Lan Zhao, Ph.D.  
Postdoctoral Fellow  
Mentor: Michael O’Reilly

Faculty on Graduate Student Thesis Committees

Patricia Chess  
Benjamin Danziger, BME Master’s student, degree conferred May 2012  
Emily Hutton, BME, Master’s Oral Exam Committee, degree conferred May 2012

David Dean  
Melissa Badding, Ph.D. 2012 – Graduated in Toxicology, UR  
Marta Ekstrom, Ph.D. 2012 - Graduated in Toxicology, UR  
Tha Thatch, Ph.D. 2008 – present student in Toxicology, UR  
Khatera Rhamani, Ph.D – present student in Toxicology, UR

Jacob Finkelstein  
Nelissa Perez Nazario student in Immunology  
Melissa Badding Ph.D. student in Toxicology  
Brittany Serke Ph.D. student in Toxicology  
Katherine Ringo Ph.d. student in Toxicology  
Scott Peslak Ph.d. student in Pathology

Michael O’Reilly  
Samantha England, Ph.D. student in Biomedical Genetics, 2006 – 2011  
Whitney Christian, Ph.D. student in Toxicology, 2009 - present
Andrew Campbell, Ph.D. student in biomedical genetics, 2010 - present
John Lapek, Ph.d. student in Toxicology, 2010 – present
Waqarun Rashid, Ph.D. student in biochemistry, 2010 – present
Daniel Dever, Ph.D. student in Toxicology, 2010 – present
Garrielle Crandall, M.S. student in biology, 2011-present

Gloria Pryhuber
Final Exam Committee Chair
Han Liu, 2009 Thesis Advisor: Rulang Jiang
Yilin Qi, 2012 Thesis Advisor: Tim Mosmann

Arshad Rahman
Melissa Badding, Ph.D. student in Environmental Medicine, 2009-2012
Jennifer Head, Ph.D. student in Environmental Medicine, 2008-present
Jennifer Gewandter Ph.D. student in Biochemistry, 2008 – 2011
Mootaz A. Eldib, M.S. student in Biomedical Engineering, 2009- 2010
Punsiri Mahendra Colonne, Ph.D. student in Pathology, 2009- present
Randi Potter, Ph.D. student in Environmental Medicine, 2004 – 2009
Yu-Chieh Wu, Ph.D. student in Biomedical Genetics, 2007 – 2010
Marta Eckstrom, M.S. student in Toxicology, 2008-2011
Mootaz Eldib, M.S. student in Biomedical Engineering, 2009-2010

Teaching Honors and Awards (2009-2012)

Rita Dadiz, D.O.
George W. Merck Dean’s Teaching Fellow, University of Rochester School of Medicine and Dentistry, 2008-2010
Ruth A. Lawrence Academic Faculty Service Award in Training, Department of Pediatrics, 2009

David A. Dean, Ph.D.
Ruth A. Lawrence Academic Faculty Service Award in Research, 2011

Ronnie Guillet, M.D., Ph.D.
URMC Mentoring Award – mentoring of junior faculty, 2010

Carl Johnston, Ph.D.
2012 SOT Meeting, Outstanding Presentation – Mixtures Specialty Section

Ruth A. Lawrence, M.D.
Distinguished Alumni Award, University of Rochester School of Medicine, 2010
Recipient, Anthony L. Jordan Recognition Award, Anthony L. Jordan Health Center, 2010
Doctor of Divinity (Honorary), St. Bernard's School of Theology and Ministry, 2009
Dr. Richard Bayley Award, Richmond University Medical Center, Staten Island, NY 2009
Martha May Eliott Award, American Public Health Association (APHA), 2009

Dale L. Phelps, M.D.

Gloria Pryhuber, M.D.
George Washington Goler Professor of Pediatrics, University of Rochester, 2011

Timothy P. Stevens, M.D., M.P.H.
University of Rochester Medical Center Board Excellence Award, 2009
Major Educational Presentations and Programs (2010-2012)

Sanjiv B. Amin, M.B.B.S., M.D., M.S.
Neonatal Clinical Research Seminar Series – Bilirubin-induced neurotoxicity, April 2011
Invited Speaker 2010 National Neonatal Conference Meeting (Neocon) in India – Bilirubin-induced neurotoxicity in term and premature infants – October 2010
Invited Speaker 2011 National Neonatal Conference Meeting (Neocon) in India – Auditory Neuropathy Spectrum Disorder
Invited Speaker 2012 New York State Early Hearing Detection and Intervention Conference, Syracuse, NY
Neonatal Medical Knowledge Seminar Series 2012 – Auditory Evaluation of Neonates
Invited Speaker, Grand Rounds, 2012 – Michigan State University, Bilirubin induced neurotoxicity
Invited Speaker 2011, National Neonatal Conference Meeting (Neocon) in India – Chennai, India – Auditory Neuropathy Spectrum Disorder
Informal Communication Assessment: Critical Information that can help in late-identified hearing loss, 2012

Patricia R. Chess, M.D.
Genes to Generations 3rd year medical student course. Pulmonary Development lecturer U of R School of Medicine and Dentistry, 2001-present
Nursing Care of the High risk neonate course 436 U of R School of Nursing Follow-up of the NICU graduate. ROP 2007-present
Pediatric Fellows' Core Curriculum, Ten minute Presentations. 2006 - present
Feedback and Evaluation. Pediatric and Medicine-Pediatrics Residency Competency Core, University of Rochester, 2007-present
Use of iNO/ ECMO/ High frequency NMKB UofR 2007-present
Pulmonary Function and biomechanics NMKB UofR 2010
Career Paths in the Sciences. Uof R workshop group leader 2010
Effect of Timing of Elective Deliveries and admission to the Neonatal Intensive Care Unit, Cayuga Medical Center, Ithaca NY, 2011
CDH: New approaches to an old problem: U of R 12/28/12
Cyanotic Congenital Heart Disease Unity Grand Rounds 2/8/12

Rita Dadiz, DO
Obstetric and neonatal multidisciplinary simulation-based team training. URMC, 2007-present.
Delivery room and newborn nursery simulations. URMC, 2008-present.
In-situ NICU mock codes. URMC, 2009-present.
Training for the unexpected. Simulation course facilitator, Center for Obstetrics and Gynecology
Simulation, URMC, 2009-present.
Voices of distinction: Best practices from University of Rochester award-winning faculty. University of Rochester, 2010.
Team building. Chief resident training workshop, URMC, 2010.
Debriefing: More Than Just Talk. Health Professions’ Faculty Development Colloquium,
URSMD, 2011
Disclosing Adverse Events. Medical Student Workshop, URSMD, 2012
Simulation-Based Learning: Assessing Your Learners and Program. Dean’s Teaching Fellowship
Debriefing: Learner-Centered Feedback for Education, Patient Care and Quality Improvement.
Pediatric Academic Societies, 2012.

Carl T. D’Angio, M.D.
Contemporary Management of Neonatal Pulmonary Disorders. “Respiratory Viral Illness in the
Premature Infant: Risks and Prevention.” Phoenix, AZ.
November 4-5, 2010.
Contemporary Management of Neonatal Pulmonary Disorders. “The Ethics of Resuscitation in the "Gray
Zone" of Neonatal Viability.” Phoenix, AZ.
November 4-5, 2010.
“Genes to Generations” medical student course, Pulmonary Biology lecturer, URMC
Research Ethics/Integrity (IND 503), Session facilitator, URMC 2005 - present
Statistics lecturer, Pediatric fellows core lecture series, University of Rochester School of Medicine and
Dentistry, 2005 – present
Pediatric Academic Societies. Moderator, Platform Session 2165, Original abstracts. May 1, 2011.
Pediatric Academic Societies. Moderator, Topic Symposium 4105: “Is Prematurity Forever? Late Results
of an Early Start?” May 3, 2011.
Pediatric Academic Societies. Moderator, Topic Symposium 4105: Beyond Bronchopulmonary Dysplasia:
PAS Update. “Beyond Bronchopulmonary Dysplasia: Measuring Long-term Respiratory Outcomes in
Former Premature Infants.” Shanghai, Beijing and Guongzhou, China. September 17-20, 2011.

David A. Dean, Ph.D.
“Electro gene transfer to the lung”, Gordon Research Conference on Bioelectrochemistry, Biddeford, ME,
2010
“Mechanisms of intracellular trafficking in gene delivery”, Program in Targeted Therapeutics, University
of Pennsylvania, Philadelphia, PA, 2010
“Use of Electroporation for Efficacious Gene Delivery to the Lungs”, Symposium Presentation,
Electrochemical Society Annual Meeting, Montreal, Canada, 2010
“The importance of plasmid nuclear localization”, American Society for Gene Therapy Annual Meeting,
Seattle, WA, 2010

Fabeha Fazal, Ph.D.
Dual Regulation of Cofilin-1 Activity by LIM Kinase and Slingshot-1L Phosphatase Mediates Thrombin-
Induced Actin dynamics and ICAM-1 Expression in endothelial Cells. Lung research and Trainee Day,
University of Rochester, October 2010
NF-kappaB Trafficking on Endothelial cell Highways: Role in Lung Inflammation, Neonatology Research
Seminar Series, Department of Pediatrics, University of Rochester Medical Center. 2011.
NF-kappaB Trafficing on Endothelial Cell Highways: Role in Lung Inflammation, The Center for
Developmental Lung Biology, Department of Pediatrics, Emory University School of Medicine, Atlanta.
2011.
Actin in Action: Role in Lung Vascular Inflammation, Lung Biology Research Seminar Series, Lung
Biology and Disease Program, Department of Pediatrics, University of Rochester Medical Center. 2012.

Jacob N. Finkelstein, Ph.D.
Co-director, Advanced Pulmonary Toxicology (TOX 564)
Lecture, core Toxicology (TOX) 521
Course Director Tox 522 Spring 2011
Participant path 509 environmental Pathology

**Ronnie Guillet, M.D., Ph.D.**
Neonatal Seizures: What are we doing…and does it make sense? The 5th International Conference on Brain Monitoring and Neuroprotection. Clearwater Beach, FL 2010
CoolCap Follow-up Study: Outcome at 7-8 years; Hypoxic-Ischemic Encephalopathy Workshop, Bethesda, MD, 2010.
PB or not PB: A question of equipoise; Columbus OH; Detroit, MI; Ann Arbor MI; 2011.
Therapeutic Hypothermia; Toxicology 560, 2012
From Fetus to Newborn; McGill University 2012, Cornell University, 2012

**Carl Johnston, Ph.D.**
Lectured on pulmonary inflammation in the toxicology core class – 2011

**Nirupama Laroia, M.D.**
Optimizing weaning and extubation. Invited speaker, Neocon 2011 Annual Conference National Neonatology Forum, India. 2011
Current Guidelines in Management of Neonates with MSAF. Invited speaker, Obstetric and Gynecology Perinatal Committee Meeting. 2011
Fellows Curriculum:
- Hypoxia-Ischemia in the Newborn, 2 lectures. 2010, 2011
- Intraventricular Hemorrhage and Post Hemorrhagic Hydrocephalus. 2009, 2010
- Neonatal Thermoregulation. 2009, 2010
- Glucose metabolism in the fetus and newborn. 2010
- Calcium, Magnesium, and phosphorus metabolism in the neonate. 2010
To suction or not to suction? Invited speaker, Obstetrics and Gynecology Business meeting, 2011
Post Discharge Nutrition for the Premature Infant, Update on Vitamin D and Iron. Pediatric Grand Rounds, Rochester General Hospital. 2010
Physician Assistant, Rochester Institute of Technology, Rochester, NY. Normal and Sick Newborn. 2000 - Present
Neonatal Nurse Practitioner Course, Course work in Neonatal Neurology, University of Rochester, Rochester, NY. 1999 – Present
Fellows Curriculum.
- Hypoxia-Ischemia in the Newborn, 2 lectures. 2010
- Intraventricular Hemorrhage and Post Hemorrhagic Hydrocephalus. Current Knowledge for 2009
- Neonatal Thermoregulation. 2009

**Ruth A. Lawrence, M.D.**
The Key to Life & Work Balance: Time Management, Pathfinder Protégé Gathering, University of Rochester, July 2011.
Vaccine to Protect Children from Anthrax, National Biodefense Science Board, Washington, DC, July 2011.
3rd Annual Summit on Breastfeeding, Washington, D. C., Chair of event, Sponsored by Kellogg Foundation, June 2011
Breastfeeding Training Days, WIC, Caldwell County Health Department, Lenoir, NC, April, 2011.
Breastfeeding Special Interest Conference (BFESIG), National Association of Pediatric Nurse Practitioners (NAPNAP), Baltimore, MD, March 2011.
22nd Annual Conference on Breastfeeding, Emory University School of Medicine, Atlanta, GA, March 2011.
Time Management, Faculty Colloquium, University of Rochester, June 2, 2010.
2nd Annual Summit on breastfeeding, Washington, D.C., Chair of event, Sponsored by Kellogg Foundation, June 2010.
Time Management, Faculty Seminars, January 19, 2010.
25th Anniversary of Surgeon General’s Workshop Summit on Breastfeeding, sponsored by Kellogg Foundation, Chair of event (Cynthia Howard co-chair, June 2009
Lactation and Breastfeeding, Reproductive Diseases, Disease Processes and Therapeutics, University of Rochester, January 7, 2009, January 6, 2010, March 7, 2011..

William M. Maniscalco, M.D.
Mechanisms of vascular disruption in BPD 19th Annual Neonatology Conference, Nemacolin, PA.
February 20, 2010.
Screening for congenital cardiac disease, Corning Hospital, 2011
Care of newborns <28 weeks, USAID Conference, Moscow, Russia, May, 2012

Thomas J. Mariani, Ph.D.
Co-Director and Lecturer, Bioinformatics Workshop, Queen’s University, Kingston, ON, 2012
Faculty, “Life and Breath”, URMC Dept of Pediatrics Mini-Medical School, 2012
Invited Speaker, "Genomics of BPD", Department of Pediatrics, University of Alabama, Birmingham, 2012
Invited Speaker, "Mechanistic insights into a COPD candidate gene", Department of Medicine, University of Alabama, Birmingham, 2012
Invited Session Chair, "Elastin in Lung Development and Disease", Gordon Research Conference on Elastin and Elastic Fibers, 2011
Meet the Professor (Invited Speaker), A Primer on Systems Biology Research, American Thoracic Society International Conference, American Thoracic society International Conference, 2011
Co-Chair, EMERGING OXIDATIVE STRESS-RELATED MECHANISMS IN INJURY AND REPAIR, American Thoracic Society International Conference, 2011
Invited Speaker, SMOKE SIGNALS: ILLUMINATING NOVEL TARGETS FOR COPD AND EMPHYSEMA INTERVENTION, American Thoracic Society International Conference, 2011
Speaker on Career Development (Non-Clinician Track), Center for Fellows and Junior Professionals, American Thoracic Society International Conference, 2011
Invited Speaker, "Systems Biology of Lung Development and Disease", Department of Biochemistry and Center of Excellence in Genomics, University at Buffalo, 2010
Invited Speaker, "Systems Biology of Lung Development and Disease", Department of Pediatrics, Neonatal-Perinatal Fellowship Program, Children's Hospital of Pennsylvania at the University of Pennsylvania, 2010
Director and Lecturer, Transcriptomics and Integrative Genomics Interest Group, University of Rochester, 2010 - 2011
Invited Speaker, Meet the Professor session, Functional Genomics: Uncovering Disease Biomarkers And Mechanisms, American Thoracic society International conference, New Orleans, LA, 2010

Invited Speaker and Session Chair, Scientific symposium, Translational Systems Biology as Applied To Diseases of Pulmonary Inflammation. American Thoracic Society International Conference, New Orleans, LA, 2010


Group Organizer, Transcriptomics and Integrative Genomics (TIGER) Working Group, URMC, 2010

Instructor (2 lectures), TOX521, toxicology Graduate Program, 2009-2010

Lecturer, Clinical and Translational Research Center, University of Rochester, 2010

**Michael A. O’Reilly, Ph.D.**

Courses, 2009-2011
- Ethics 501/503 – Ethics Core Course as session leader for ethics course (6 lectures)
- Scientific Reasoning in Medicine (1 lecture)
- TOX 594 – Gene Environment Interactions Course Co-Director overseeing (13 lectures)
- TOX 521 – Tox Core Course - Course Co-Director and gave (4 lectures)
- TOX 564 – Pulmonary Toxicology – Course Co-Director (14 lectures)
- PTH 507 – Cancer Biology (1 lecture)


O’Reilly MA. Neonatal hyperoxia as a developmental antecedent of cardiopulmonary disease. Hershey Medical College, Hershey PA. December 2, 1011. Invited Lecture


Neonatal hyperoxia as a developmental antecedent of cardiopulmonary disease. Hershey Medical Center, PA. 2010.


Developmental origins of persistent pulmonary disease: The new “new BPD”. Vanderbilt University, Department of Medicine. 2011.

**Dale L. Phelps, M.D.**

Gloria S. Pryhuber, M.D.
Fellows’ Seminars
“Poster Design: Presenting Your Hard Work”
Pediatric Fellows’ Academic Core Curriculum, May 2006-2011
“Career Development: Employment After Fellowship”
Pediatric Fellows’ Academic Core Curriculum, May 2009-2011
“Career Development: Funding Strategies”
Neonatal Medicine Knowledge Base – Neonatal-Perinatal Medicine Fellow’s Core Curriculum
Pulmonary Congenital Anomalies” “Lung Development” and “Surfactant Biology”
April, November and December (3 sessions) 2010 (Due again Fall 2012)"
Skeletal Dysplasias, NPM Fellow Neonatal Knowledge Base Curriculum, URMC, 2010
Toxicology 522 Organ Systems Toxicology : Section on Pulmonary Toxicology, October, 2001-pr
Each year, teach 2-3 of the following:
“Lung Anatomy, Physiology and Experimental Models”
“Acute Lung Inflammation, Epithelial Injury and Repair”
“Cellular Mechanisms of Lung Injury and Repair”
URMC Pulmonary Biology Seminar – January 18, 2011
“New Approaches To Chronic Lung Disease Of Prematurity: Neonatal Human Lung BioRepository Biomarker Discovery”
URMC Pediatric Biomedical and Translational Research Seminar - December 5, 2011
“Prematurity and Adaptive Immune Development”

Arshad Rahman, M.D.
Courses, 2007-2011
TOX 564 Pulmonary Toxicology elective (15 lectures)
TOX 521 Toxicology core course (1 lecture)
TOX 522 Pulmonary and Cardiovascular Toxicology (1 lecture)
TOX 521 Genetic Toxicology (2 lectures) Courses
TOX 522 Pulmonary and Cardiovascular Toxicology (1 lecture)
TOX 521 Genetic Toxicology (2 lectures)

New Endothelial Signals Controlling Neutrophil Trafficking into the Lung, Department of Pharmacology and Biophysics, University of Rochester Medical Center, 2010
Endothelial Signals Controlling Neutrophil Trafficking into the Lung, First-Year Pathology Graduate Students, University of Rochester Medical Center, 2010
Blocking NF-κB: An Inflammatory Issue, Neonatology Seminar Series, Department of Pediatrics, University of Rochester Medical Center, 2010
Endothelial Cell Signals in Lung Inflammation and Injury, Gastrointestinal Seminar Series, Department of Medicine, University of Rochester Medical Center, 2010
Blocking NF-κB: An Inflammatory Issue, Medical Knowledge Curriculum Meeting, Department of Pediatrics (Neonatology), University of Rochester Medical Center, 2011

Kristin Scheible, M.D.
Neonatal Immunity. Fellow Neonatal Medical Knowledge Base Curriculum, Department of Pediatrics (Neonatology) University of Rochester Medical Center, 2010
PDA Ligation and Pain Control in the NICU. New Fellow’s Orientation, Depatment of Pediatrics (Neonatology), University of Rochester Medical Center, 2011

Laurie Steiner, M.D.


Timothy P. Stevens, M.D., M.P.H.

Neonatal Intensive Care Unit, Neonatology Web site, a resource for resident, fellow and nursing education and clinical care. The site is updated comprehensively once each year and frequently throughout the academic year. It includes a medication reference, resident guide to common neonatal care, and on-call issues, as well as PowerPoint presentations on common neonatal diseases and links to extramural pediatric and neonatal resources, 2004 - present

Perinatal Outreach Program. Twice yearly CME talks, FF Thompson Hospital, Canandaigua, New York, 2001 - present

American Thoracic Society – Annual Meeting
“Risk Factors For Respiratory Disease After Discharge From the NICU” New Orleans, LA, May 16th, 2010.


NYS Dept. of Health’s Obstetric and Neonatal Quality Collaborative, Albany, NY Feb. 7th, 2011.

Invited Speaker, The Limits of Viability. 24th Annual Rochester Conference in Perinatal Medicine, University of Rochester Medical Center, Rochester, NY, May 26a, 2011.


32nd Annual Townsend Teaching Day. “Screening for Congenital Heart Disease in Asymptomatic Patients: Building a Program,” Rochester General Hospital, May 2012.

Robert J. Swantz, M.D.

Teaching in a Busy Inpatient Setting; Faculty Development Workshop, University of Rochester, School of Medicine and Dentistry, March 2, 2010

Perinatal Outreach Program, yearly CME talks, Newark-Wayne Community Hospital, Newark, NY, 1995 – present

Perinatal Outreach Program, yearly CME talks, Nicholas Noyes Memorial Hospital, Dansville, NY, 2000 – present

Course Director PED300 – Pediatric Clerkship, University of Rochester School of Medicine and Dentistry, 2000 – Present

Course Director PEDEXT – Pediatric Sub-Internship, University of Rochester School of Medicine and Dentistry, 2000 – Present

Genes to Generations – lecturer on health care costs, University of Rochester School of Medicine and Dentistry, 2000 - Present

Effective Teaching in the Clinical Setting, lecturer in Pediatric Academic Core Curriculum (hospital-wide fellows), University of Rochester School of Medicine and Dentistry, 2005 - present

Neonatal Fellow Medical Knowledge Base Curriculum, Group B Strept and Neonatal Dermatological Disorder lecturer, University of Rochester School of Medicine and Dentistry, 2010
V. Faculty Data

Memberships and Leadership Roles in Scholarly Societies

Sanjiv B. Amin, M.B.B.S., M.D., M.S.
American Academy of Pediatrics, 1993 - present
Early Hearing Detection and Intervention, 2003 - present
New York Chapter, 2006 - present
AAP, Perinatal section, 1999 - present
Society for Pediatric Research, 2003 - present

Kaiser M. Bijli, Ph.D.
American Thoracic Society
American Physiological Society
American Heart Association

Patricia R. Chess, M.D.
American Academy of Pediatrics, 1990 - present
American Thoracic Society, 1994 - present
Perinatal Research Society, 2005 - present
Society for Pediatric Research, 2000 - present

Rita Dadiz, D.O.
American Academy of Pediatrics, 2001-present
American Osteopathic Association, 2002-present
American Medical Association, 2002-present
Society for Simulation in Healthcare, 2008-present

Carl T. D’Angio, M.D.
American Academy of Pediatrics, 1991 - present
Perinatal Research Society, 2006 - present
Society for Pediatric Research, 1999 - present
**David A. Dean, Ph.D.**
American Thoracic Society  
American Society of Cell Biology  
American Society for Gene Therapy  
Respiratory Gene Therapy Committee  
Society for Experimental Biology  
Co-chair 2012 (Chair 2014) Gordon Conference on Bioelectrochemistry

**Fabeha Fazal, Ph.D.**
American Thoracic Society  
American Physiological Society

**Jacob N. Finkelstein, Ph.D.**
American Association for the Advancement of Science  
American Society for Biochemistry and Molecular Biology  
American Society for Cell Biology  
American Thoracic Society  
Radiation Research Society  
Society for Leukocyte Biology  
Society for Pediatric Research  
Society of Toxicology (Inhalation Section)  
ASTRO

**Ronnie Guillet, M.D., Ph.D.**
American Academy of Pediatrics  
Society for Pediatric Research  
American Pediatric Society

**Sema Hart, M.D.**
American Academy of Pediatrics, 1991 - present

**Carl Johnston, Ph.D.**
American Thoracic Society  
Radiation Research Society  
Society of Toxicology

**Nirupama Laroia, M.D.**
American Academy of Pediatrics  
Breast Feeding Medicine  
International Child Health; committee chair, India Giani Scholarship Fund  
Neonatal Perinatal Medicine  
Eastern Society for Pediatric Research  
Indian Academy of Pediatrics  
National Neonatology Forum (India)

**Ruth A. Lawrence, M.D.**
Professional  
Academic Affairs Committee, St. Bernard’s School of Theology and Ministries, 1991 - present  
Academy of Breastfeeding Medicine—Founder, Advisory Board member and former president, 1996 - present  
American Academy of Pediatrics, 1960 - present  
Chair and member, Section on Breastfeeding, 2002 – present, Chair 2004-2010  
American Association of Poison Control Centers, 1962 - present  
American Institute of Nutrition, a constituent society of the Federation of American Societies for Experimental Biology, 1996 - present  
American Pediatric Society, 1986 - present
Medical Nutrition Council of the American Society for Nutrition, 2006 - present
Sigma Delta Epsilon, Graduate Women in Science, honorary member, 1999 - present
United States Breastfeeding Committee—vice president and member of Executive Committee, 2002 – 2007, member 1995 - present

Community
Girl Scouts of Genesee Valley, honorary Board member, 2003 – 2010
March of Dimes, Upstate N.Y. Chapter—member, Board of Directors, 2005 – 2009
Our Lady of Mercy High School, Rochester, New York—member, Board of Directors, 2004 – 2010

William M. Maniscalco, M.D.
American Pediatric Society
American Thoracic Society
Perinatal Research Society
Society for Pediatric Research

Thomas J. Mariani, Ph.D.
Vice-Chair, Gordon Research Conference on Lung Development, Injury and Repair, 2013
American Association for the Advancement of Science, 1991 - Present
American Thoracic Society, 1996 - Present
  Group Leader and Reviewer, RCMB Program Committee, 2004-200, 2010-2011
  Chair, ATS RCMB Assembly Program Committee, 2009-2010
  Co-Chair, ATS RCMB Educational Session Planning Working Group, 2010-2011
  Member, ATS RCMB Executive Committee, 2010-2011
  Member, Nominating Committee, 2012
American Society for Cell Biology, 1997 - Present
American Physiological Society, 2005 - Present

Robert Notter, M.D., Ph.D.
Sigma Xi
Society for Pediatric Research
Tau Beta Pi
*Who’s Who in Science and Engineering*
*Who’s Who in the World*
*Who’s Who in America*
*Who’s Who in Medicine and Healthcare*

Michael A. O’Reilly, Ph.D.
American Physiological Society
American Thoracic Society
Sigma Beta

Dale L. Phelps, M.D.
American Academy of Pediatrics
American Association for Pediatric Ophthalmology and Strabismus—honorary member, 2006 - present
American Pediatric Society, 1987 - present
Association for Research in Vision and Ophthalmology (ARVO), 1988 - present
Society for Pediatric Research, 1979 – present (emeritus)

Gloria S. Pryhuber, M.D.
American Academy of Pediatrics
American Physiological Society
American Thoracic Society
Society for Pediatric Research
Alpha Omega Alpha Medical Honor Society
International Cytokine Society
Perinatal Research Society

**Arshad Rahman, Ph.D.**
ATS RCMB Assembly Program Committee, 2010-present
American Heart Association
American Physiological Society
American Society for Biochemistry and Molecular Biology
American Thoracic Society
Shock Society

**Kristin Scheible, M.D.**
American Academy of Pediatrics, 2004-present

**Timothy P. Stevens, M.D., M.P.H.**
American Academy of Pediatrics, 1998-present; fellow, 1990-present
American Thoracic Society, 2006-present
Society for Pediatric Research, 2006-present

**Robert J. Swantz, M.D.**
American Academy of Pediatrics
- Fellow, 1993-present
- Fellow, Perinatal Section, 1997-present
Council on Medical Student Education in Pediatrics, 1994-present
- Faculty Development Task Force, co-chair, 2008-2011

**Jennifer L. Young, Ph.D.**
American Society for Cell Biology
American Thoracic Society

**Service Activities**

**Sanjiv B. Amin, M.B.B.S., M.D., M.S.**
New York Chapter Champion, Newborn Hearing Committee, American Academy of Pediatrics, 2005-present
GCRC (CTSI) Advisory Committee Member, Rochester, NY, 2007-present
Perinatal Outreach Program, Park Ridge Hospital, twice yearly CME talks, 2009-present
New Born Hearing Committee, University of Rochester, NY, 2006-present
ROP Oversight Committee Member, University of Rochester, NY, 2007-present
Medical Knowledge Core Curriculum for Neonatology Fellows, Committee Member, University of
- Reviewer, 2007-present
Reviewer for Society of Pediatric Research Meeting Workshop Proposals, 2010
Reviewer for NIH Loan Repayment Grants
Reviewer for NIH Study Section 2011, 2012
Grant application (Mentor for Kunal Gupta) T-32 Dean – Parenteral nutrition associated cholestasis 2012

**Patricia R. Chess, M.D.**
Fellowship Director, Neonatal-Perinatal Medicine Fellowship Program 2010-present
Associate Fellowship Director, Neonatal-Perinatal Medicine Fellowship Program 2009-2010
Chair of Pediatrics, Unity (formerly Parkridge) Hospital, 2006-present
Medical director, ECMO Program, oversee provision of care to ECMO patients, ELSO Registry, 1998-present
Abstract Reviewer
  American Thoracic Society, 2004 - present
  Pediatric Academic Society, 2004 – present
APS/SPR Student Research Program Steering Committee 2010-present
American Lung Association Research Grant Review Committee (national), 2001 - present
Palliative Care Team member, 2005 - present
Pediatric Planning Committee, American Thoracic Society, 2005 - 2010
Neonatal specialist, Preferred Care Health Insurance Children’s Health Care Team, 1999 – 2011
Graduate Medical Education Committee, member 2009-present
University of Rochester MD with Research Distinction Advisory Council 2010-present
University of Rochester Advisory Parent Council 2008-present
Outreach coordinator, United Memorial Hospital, Batavia, New York, 2000- present
University of Rochester George Eastman Circle Advisory Council 2011-present
Moderator AAP Perinatal Section Mid-Atlantic Conf. 2010, 2012

Rita Dadiz, D.O.
Coordinator, Neonatal Resuscitation Program, URMC, 2008-present
Obstetrics Simulation Steering Committee, URMC, 2008-present.
Mentoring Working Group, University of Rochester, 2009 - present.
Outreach Coordinator, Highland Hospital, 2012.
Program Faculty, International Meeting on Simulation in Healthcare, 2012
Abstract Reviewer, Pediatric Academic Societies, 2011
Activity Director, Planning Committee for Neonatology Fellows’ Conference, 2010-present
Board Member, Clinical Education Advisory Board, Center for Experiential Learning, URSMD, 2012-present
Member:
  Pediatric Simulation Workgroup, URMC, 2007-present
  Obstetrics Simulation Steering Committee, URMC, 2008-present
  Faculty Working Group on Mentoring, URMC, 2009-2011
  Pediatric Education Committee, URMC, 2010-present
  Pediatric Resuscitation Committee, URMC, 2010-present

Carl T. D’Angio, M.D.
Associate Chair, Board 5, Research Subjects Review Board, University of Rochester, 2004 - present
Editorial Board, Pediatric Health
Faculty Senate Research Policy Committee, University of Rochester, 2006 - present
Data Safety and Monitoring Boards
  Effects of Massage on Immune System of Preterm Infants. NIH/NCCAM R21 AT001872, 2005 – present
Chair, Data Safety and Monitoring Board, “Intravenous Omega-3 Fatty Acid Emulsion (Omegaven) in Total-Parenteral-Nutrition-Related Cholestasis - A Compassionate Use Protocol, 2008- present,”
University of Rochester Clinical Research Review Process Improvement Team, 2009-present
Safety Monitoring Committee, “Executive Function in Children with Hypertension,”
  NIH/NHLBI 1R01HL098332-01A1, 2011 – present.
Society for Pediatric Research Fellows Research Awards Selection Committee (Clinical Team), 2011-2014

David A. Dean, Ph.D.
Abstract Reviewer: American Society for Gene Therapy, 2004 – present
Editorial Board Member
  American Journal of Physiology: Lung Cellular and Molecular Physiology, 2006 - present
  Experimental Biology and Medicine, 2006 – present

Fabeha Fazal, Ph.D.
Reviewer
  American Journal of Physiology: Heart and Circulatory Physiology
Journal of Biochemistry and Molecular Biology
Frontiers in Bioscience: Molecular Biology in Clinical Practice
Chemical Research in Toxicology
Respiratory Research
International Journal of Biochemistry and Cell Biology
Experimental Cell Research

Jacob N. Finkelstein, Ph.D.
Director of Enrichment, Environmental Health Sciences Center, 1999 - present
Director of University Facilities Core, Environmental Health Sciences Center
Steering Committee, Pulmonary Training Grant
Steering Committee, Toxicology Training Program

Ronnie Guillet, M.D., Ph.D.
Committees
URMC
Strong Hospital
Town-Gown Committee, Department of Pediatrics, member
Neonatology Morbidity and Mortality Committee, member
Perinatal Morbidity and Mortality Committee, member
Prenatal Diagnosis Committee, member

Highland Hospital
Medical Executive Committee
Perinatal Morbidity and Mortality Committee, Co-Chair
Perinatal Practice Committee
Pediatric Quality Committee
NIH ad hoc reviewer Development Brain Disorders 2010
NIH ad hoc reviewer Small Business – Devices for the NICU, 2011

Sema Hart, M.D.
Regional instructor, Neonatal Resuscitation Program (605-6309), 2004 - present

Nirupama Laroia, M.D.
Member, Perinatal Data Systems (PDS) advisory group
Abstract Reviewer. 2012 PAS
Committee Chair, India Giani Fund, under the International Health Section of the AAP. 2007 - 2012

Ruth A. Lawrence, M.D.
Consultant, Food and Drug Administration Advisory Council, 2007 - present
Lactation/Drug Center: Back-up consultation;

William M. Maniscalco, M.D.
Member, Pediatric Tenure and Promotion Committee
Outreach Coordinator, Arnot-Ogden Hospital, Corning Hospital, and Schuyler Hospital
Co Chair, Perinatal Forums
Abstract Reviewer, Pediatric Academic Societies, 2008-2012
Invited session chair, Pediatric Academic Society Annual Meeting, 2010

Thomas J. Mariani, Ph.D.
Member, Pediatrics Website Committee, 2012
Member, ATS RCMB Nominating Committee, 2012
Member, ATS RCMB Executive Committee, 2009-Present
Member, URMC Functional Genomics Oversight Committee, 2011-2012
Director and Lecturer, Transcriptomics and Integrative Genomics Interest Group, University of Rochester, 2010 - 2011
Editorial Board, American Journal of Respiratory Cell and Molecular Biology | 2003 - Present
Editorial Board, American Journal of Physiology, Lung Cell and Molecular Biology, 2012 – Present
Ad Hoc Faculty Promotion Review Committee, 2011-2012

**Reviewer:** PLoS Computational Biology; Journal of Pediatrics; Pediatric Allergy; Immunology and Pulmonology; PPAR Research; Journal of Molecular Medicine; European Respiratory Journal; Developmental Biology; Bioinformatics; International Journal of COPD; Nucleic Acids Research; Journal of Clinical Investigation; Pediatrics Research; Respiratory Research; American Journal of Pathology; BMC Bioinformatics; BMC Genomics; Physiological Genomics; Cancer Research; Clinical Chemistry; Journal of Cellular Physiology; American Journal of Respiratory and Critical Care Medicine; Developmental Dynamics; American Journal of Physiology; American Journal of Respiratory Cell and Molecular Biology;

**Robert Notter, M.D., Ph.D.**
Pediatrics Promotions Committee
Dean’s Ad Hoc Promotions Committee

**Michael A. O’Reilly, Ph.D.**
Editorial Board
American Journal of Physiology: Lung Cellular and Molecular Physiology, 2003 - present
American Journal of Respiratory Cell and Molecular Biology, 2007 – present

Board of Directors
March of Dimes Finger Lakes Chapter, 2012-present
Consultant
Program Project Grant by Aron Fisher, MD, PhD, University of Pittsburgh

**Dale L. Phelps, M.D.**
Member
AAO/AAP/AAPOS Joint Statement on ROP Screening, 1997 - present
DSMB for the Division of Lung Diseases Clinically Oriented Research. NIH-NHLBI, 2007 - present
DSMB for the Maternal Fetal Medicine Network. NIH-NICHD, 2006 - present
DSMC for the NIH-NEI PEDIG Group Trials: Multiple Trials Group in Pediatric Ophthalmology, 1997 - present

**Gloria S. Pryhuber, M.D.**
Member
Dean’s Research Advisory Committee, 2000 – 2010
Department of Pediatrics Technology Committee, 2000 – 2010
Graduate Medical Education Committee, 2000 – 2010

Mentor
T32 – Diana Go and Syed Shah, Present
K12 – Kristin Scheible, Present

Extramural
Pediatric Academic Society Annual Meeting, Abstract Referee, 2012
Pediatric Academic Society Annual Meeting, Session Moderator, 2012

**Arshad Rahman, Ph.D.**
Institutional Biosafety Committee, University of Rochester, 2009-present
Editorial Board
American Journal of Physiology: Lung Cellular and Molecular Physiology
Recent Patent Reviews on Anti-Infective Drug Discovery
Timothy P. Stevens, M.D., M.P.H.
New York State Regional Perinatal Center Steering Committee, 2005 – present
Medical Director, NICU, University of Rochester Medical Center, 2006-present

Robert J. Swantz, M.D.
Pediatric Education Committee, 1995 - present
Curriculum Steering Committee, University of Rochester School of Medicine and Dentistry, 2006 – 2008
Admissions Committee, University of Rochester School of Medicine and Dentistry, 2007 – 2011
Third and Fourth Year Instruction Committee: vice-chair, 2006-2007; Chair, 2007– 2008
Medical Student Promotion and Review board, University of Rochester School of Medicine and Dentistry, 2008 - present

Jennifer L. Young, PhD
Abstract/Poster Reviewer, Toxicology Research Day, University of Rochester, 2010

VI. Three-Year Bibliography (2009-2012)

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