

Neonatal-Perinatal Fellowship Program

UW Medicine
SCHOOL OF MEDICINE

The Neonatal-Perinatal Medicine Fellowship Training Program at the University of Washington was initiated in the mid-1960s. As of 2004, 41 physicians have successfully completed their clinical and research training and 76% have pursued an academic career. The program's primary objective is to train neonatologists committed to a career in academic neonatology. We have designed our program to ensure ample protected time for scholarly activities. Our research "areas of excellence" are diverse and we have identified strong research mentors both within and outside the neonatology division. Our fellows may choose to combine an MPH with their Neonatal-Perinatal training. In such cases, our Division supports the tuition and fees for the MPH program.

Applicants interested in applying for a fellowship position and who would like to be considered for an interview, please submit:

- Personal Statement
- Curriculum Vitae
- Application Form
- 3 Letters of Recommendation

Send application materials to:

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Applicants are required to have completed an ACGME accredited pediatric residency training in the United States in order to be considered for a fellowship position. Our program is committed to training academic neonatologists who develop outstanding competence in research. We fully expect that our graduates will be actively recruited to faculty positions at prestigious university medical centers and will become certified by the American Board of Pediatrics in Neonatal-Perinatal Medicine.

ESSENTIAL REQUIREMENTS

The University of Washington Neonatal-Perinatal Fellowship Program provides training in neonatal-perinatal medicine in accordance with the general and the special requirements of the Accreditation Council for Graduate Medical Education (ACGME, www.acgme.org). The certification provided by the Neonatal-Perinatal Medicine Training Program is undifferentiated and certifies the acquisition of general knowledge, skills and attitudes in all aspects of neonatal-perinatal medicine. Satisfactory completion of the training qualifies the fellow to take the qualifying exams of the American Board of Pediatrics in Neonatal-Perinatal Medicine (www.abp.org).

Incoming fellows in neonatal-perinatal medicine must adhere to the essential requirements of medical education as defined by the University of Washington School of Medicine and to the relevant policies and procedures of the University of Washington, the Medical School, the Department of Pediatrics, and the Affiliated Hospitals.

Successful applicants must be proficient in the six general competencies as defined by the American Board of Pediatrics:

Patient Care

Residents must be able to provide family centered patient care that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

Medical Knowledge

Residents must demonstrate knowledge about established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, and the application of this knowledge to patient care.

Interpersonal and Communication Skills

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and professional associates.

Practice-Based Learning and Improvement

Residents must be able to use scientific methods and evidence to investigate, evaluate, and improve their patient care practices.

Professionalism

Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

Systems-Based Practice

Residents must practice quality health care and advocate for patients in the health care system.

GENERAL OBJECTIVES & GOALS

- Understand the physiology of the normal fetus and neonate and the pathophysiology of the sick infant
- Diagnose and manage problems seen in the continuum of fetal development through prenatal, intrapartum, and neonatal periods (including follow-up)
- Demonstrate excellent teaching and administrative skills
- Develop competence and complete a research project as approved by your chosen scholarship oversight committee. Demonstrate this competence by compiling a manuscript and/or a grant award application

SPECIFIC OBJECTIVES & GOALS

- Demonstrate knowledge in the identification of high-risk pregnancies and the evaluation of fetal well-being and maturation
- Effectively counsel families with high-risk pregnancies about neonatal outcomes and initial management
- Demonstrate expertise in newborn (delivery room) resuscitation, including certification as a regional instructor in the Newborn Resuscitation Program (NRP) of the AAP/AHA
- Demonstrate expertise in the management of critically ill newborn infants, including:
 - general principles of critical care
 - techniques of neonatal resuscitation
 - procedures needed in the care of critically ill neonates:
 - venous and arterial access
 - bag and mask ventilation, endotracheal intubation
 - chest tube placement
 - nutritional support
 - respiratory care for preterm and term neonates including various modes of ventilator management (including high-frequency ventilation)
 - preparation of a neonate for transport
 - indications for, and principles of ECMO
 - diagnosis and stabilization of surgical problems such as diaphragmatic hernia, tracheal-esophageal fistula, necrotizing enterocolitis, midgut volvulus, gastroschisis, and omphalocele
 - diagnosis, stabilization, pre- and post-operative management of neonates with cardiac anomalies
 - CNS pathology (IVH, AVM, stroke, malformations)

- Actively participate in the long-term follow-up of infants at high risk for neurodevelopmental disability; become skilled in their evaluation and management; and become aware of the socioeconomic impact and the psychosocial stress that such infants may place on a family
 - Understand the laboratory techniques essential to the care of the high-risk infant
 - Obtain experience in tabulating and evaluating institutional and regional fetal and neonatal morbidity/mortality data
 - Demonstrate expertise in both short- and long-term outcomes for neonatal disease states including:
 - idiopathic respiratory distress syndrome, bronchopulmonary dysplasia
 - asphyxia
 - sepsis
 - congenital anomalies
 - inborn errors of metabolism
 - neurodevelopmental consequences of prematurity, including intracranial hemorrhage and periventricular leukomalacia
 - Critically evaluate various modalities of therapy and apply them to evidence-based clinical practice
 - Actively participate in scheduled seminars, multidisciplinary conferences, courses, and develop outstanding presentation skills
 - Each Fellow will organize their own Scholarship Oversight Committee, and under the guidance of a research mentor, will develop and demonstrate special competence in a specific research area, including:
 - the ability to critically review and interpret the discipline's literature
 - the design of a research project to be completed during the fellowship
 - acquisition of specific methodological skills necessary to complete the project
 - data analysis and science writing skills necessary to write a manuscript for peer-review publication
 - grant-writing skills needed to successfully compete for awards needed to fund a research project
- ❖ Many of our fellows choose to combine an MPH with their Neonatal-Perinatal training. Our Division supports the tuition and fees for both years of the MPH program.

MENTORED RESEARCH/TRAINING OPPORTUNITIES**Mentor: Shilpi Chabra, MD**

Dr. Chabra's scholarly interests include neonatal lymphocyte subsets and steroid effects, chronic lung disease in preterm infants and its association with Vitamin A, and epidemiology of birth defects, particularly gastroschisis. She is also involved in quality improvement projects in the Overlake NICU and has helped establish the post-discharge nutrition clinic at Overlake Hospital. Dr. Chabra also coordinates the Division's regional outreach activities.

Mentor: Michael Cunningham, MD, PhD*Developmental Pathogenesis of Human Craniosynostosis*

Research funded by NIH (Institute of Dental & Craniofacial Research), endowments from Children's Hospital & Regional Medical Center, and private gifts. Our research focuses on the molecular and developmental pathogenesis of craniosynostosis and other rare craniofacial anomalies. We use a combination of human mutational analysis, molecular genetics, and developmental biology to investigate the fundamental causes of craniofacial malformation syndromes. Collaborative research projects within the Division of Craniofacial Medicine include the use of genetic association studies and genotype phenotype correlations as tools for understanding complex craniofacial traits.

Mentor: Christine A. Gleason, MD*Cerebrovascular Effects of Neonatal Morphine*

Neonatal rat and mouse models are utilized to study the long-term cerebrovascular, neuropathologic, and behavioral effects of neonatal narcotic exposure similar to that experienced by preterm infants in our NICUs. Morphine is used increasingly in the management of non-surgical ELBW babies and yet little is known about its effects on the developing brain. Behavioral, neuropathological, and microcirculatory studies are performed in adult offspring exposed to morphine and/or stress as neonates.

Mentor: Carmen M. Herrera, MD*Weaning Preterm Infants from Mechanical Ventilation*

Research funded by NIH (Institute of Child Health and Human Development)

Dr. Herrera's research focuses on weaning and extubation of extremely low birth weight premature infants using two complementary approaches. Phase A will define objective parameters that lead to successful extubation. The prospective validation of these parameters will be performed in another group of infants with similar characteristics to the ones in whom the original data is obtained. Next, a randomized controlled trial, Phase B, will be carried out to show how the use of validated parameters to guide time of extubation can decrease extubation failure, morbidity, mortality, and hospital costs. Studying new ventilatory modalities with potential applications in newborns is also an integral part of Dr. Herrera's research. For this purpose, she has developed a neonatal bench model for testing new modes of mechanical ventilation such as automatic tube compensation.

Mentor: W. Alan Hodson, MD

Dr. Alan Hodson (Emeritus Professor and former Division Head) has an extensive research and clinical background in neonatal respiratory disorders. His former research focused on developmental biology of the lung and the effects of lung injury (e.g. bronchopulmonary dysplasia) on subsequent lung growth and development. He currently oversees the fellows' weekly core lecture series, which is intended to provide a comprehensive review of all clinically relevant problems as well as preparation for board examinations.

Mentor: J. Craig Jackson, MD

After 15 years of basic and clinical research in the lung diseases of newborns, Dr. Jackson recently changed his direction from research to neonatal medical direction services. To improve his administrative skills, he is currently enrolled in the executive Masters in Health Administration at the University of Washington. He plans to continue his primary administrative activity as neonatal medical director at CHRMC, including quality improvement activities, as well as working with leaders in Perinatology at UW to build its program in Maternal-Fetal Medicine and fetal diagnostic services. He serves as leader of the division's clinical activities, providing support for the division's neonatal medical directors at CHRMC, UWMC, Providence Everett Medical Center, and Overlake Hospital in Bellevue. The clinical programs of the division include direction of the CHRMC infant ground transport team and medical support for the CHRMC Neonatal Nurse Practitioner program. He also participates in the educational research activities led by Dr. Tom Strandjord in comparing different methods of teaching neonatal resuscitation.

Mentor: Sandra E. Juul, MD, PhD*Neurodevelopment and Neuroprotection*

Research funded by March of Dimes and Children's Hospital

Dr. Juul's research focuses primarily on the neurodevelopmental and neuroprotective effects of erythropoietin (Epo) in neonatal models of brain injury. She has identified Epo and its receptor in the developing human brain, demonstrated the functionality of the Epo receptor on cultured neurons, and documented Epo in the spinal fluid of human neonates. Her research shows that systemically administered Epo can cross the blood brain barrier, and that it can protect the neonatal brain from injury due to hypoxia and oxidative injury. Using a variety of approaches, Dr. Juul is working to identify mechanisms of Epo neuroprotection, and how to optimize its function in the developing brain at risk for injury. Her ultimate goal is to bring this new treatment from the laboratory to the bedside. Additional activities in her laboratory include the study of possible interactions between Epo and retinopathy of prematurity, as well as the long-term effects of neonatal stress on adult parameters including learning and memory.

Mentor: David Loren, MD

The focus of Dr. Loren's teaching and research interests revolve around practical medical ethics, quality improvement and communication. He has developed a parent-as-faculty program in our Infant ICU at Children's Hospital that helps medical teams

improve their communication skills with families. His work in quality of care has focused on how culture and individual behavior support or inhibit strategies for process improvement. He is passionate about innovation in education and is a participant in the inaugural Pediatric Academic Society's Educational Scholars Program. He is currently leading a research project to develop a web-based educational program for pediatric residents on safe and effective practices for disclosing medical errors.

Mentor: Dennis E. Mayock, MD

Dr. Mayock's research interests include clinical interventions aimed at decreasing the incidence and severity of bronchopulmonary dysplasia (BPD). A trial project examines the effect of booster doses of exogenous surfactant on BPD. An NIH funding decision is pending for expansion of this trial into a multicenter collaborative project in which fellows are welcome to participate. Other interests include the effects of NICU environmental changes on provision of care and family satisfaction and the effects of fetal or neonatal drug exposure on cerebrovascular reactivity.

Mentor: Michael D. Neufeld, MD, MPH

Longterm Follow-Up

Dr. Neufeld is interested in long-term neurodevelopmental outcomes of premature infants. His recent research has focused on the possible association between maternal infection and cerebral palsy in term and preterm infants, on markers of inflammation, and the risk of severe retinopathy of prematurity. He helps manage the division's clinical database and is developing a database of the patients seen in the High Risk Infant Follow-up Clinic. Other interests include quality improvement and medical education.

Mentor: Craig E. Rubens, MD, PhD

Pathogenesis of Streptococcal Infections

Research funded by NIH (Institute on Allergy and Infectious Diseases), private industry, and gifts

Research projects are designed to define the various virulence traits of group B streptococci important for the pathogenesis of infections in pregnant women and newborn infants. This work has required the development of molecular tools for genetically dissecting this pathogen, identification of the genes encoding the various virulence determinants, regulation of gene expression, characterization of the gene products, and investigating their function in both *in vitro* and *in vivo* models of disease. A primary goal has been to understand the nature of how these bacteria cause disease in the newborn and young child. In addition, projects on how the bacteria interacts with the placental membrane in the pathogenesis of premature labor have begun. New targets for vaccine development and antibiotic intervention have also resulted from these efforts.

Mentor: Kendra Smith, MD

Dr. Smith's focus in research historically has been in lung injury and prevention of such injury in the preterm neonate. She has studied ventilator techniques and different ventilation support modalities and currently is working on clinical strategies to minimize

lung trauma in infants requiring ventilation due to respiratory failure at birth. Because of this interest she serves as the Manager of Divisional Respiratory Care Programs with the goal of promoting improved ventilation strategies for neonates requiring ventilatory support in our region. Dr. Smith is also interested in brain injury in the neonate and is the site investigator at Providence Everett Medical Center for clinical trials in preterm infants at risk for altered neurological outcome using erythropoietin as a potential neuroprotective agent.

Mentor: Thomas Strandjord, MD

Quality Improvement and Medical Education

Dr. Strandjord's primary research interests are in quality improvement and medical education in newborn care and resuscitation. His current projects include the use of video-recording of newborn resuscitations in education of newborn care-givers. He is also studying the use of computerized simulations of newborn resuscitation and infant arrests in the training of medical personnel in Newborn Resuscitation Program and advanced life support. He also assists in the management of a clinical database of all infants admitted to the University of Washington Medical Center Neonatal ICU. This database serves as a resource for quality improvement projects and clinical research projects.

Mentor: Peter Tarczy-Hornoch, MD

Biomedical and Health Informatics

Research funded by NIH (Biomedical and Health Informatics)

Dr. Peter Tarczy-Hornoch serves as Director for the UW NIH-funded Biomedical and Health Informatics Research Training grant, Biomedical Informatics Director of the UW planning process for an Institute for Clinical and Translational Science, and Director of Web Application Development for the UW Medicine Information Technology Services Group. Dr. Tarczy-Hornoch's research has included: a) real time biomedical instrumentation control system, b) bench research and mathematical modeling of liquid ventilation, c) clinical information systems, and d) electronic clinical knowledge resources. His current research on methods and models in collaboration with computer scientists focuses on data integration of biomedical and health data including looking at ways of handling semi-structured data, representing uncertainty at various levels in the system, and doing computerized reasoning over integrated data. The challenges and opportunities his research is applied to arise from collaborations with biologists and clinical researchers looking at: a) large scale functional gene annotation of bacteria and protozoans, b) single nucleotide polymorphisms for elucidation of disease mechanisms, c) expression array experiment analysis, and d) collaborative integrated analysis of a combination of clinical data, experimental biological data, and clinical/translational research study data.

Mentor: Michelle Williams, ScD

Public Health and Epidemiology

Dr. Williams' primary research interests are in reproductive and perinatal epidemiology. Current research involves identifying genetic and non-genetic biological markers of placental pathology and relating those markers to potentially modifiable exogenous risk factors of adverse pregnancy outcomes including preterm delivery, abruptio placentae, pregnancy-induced hypertension (preeclampsia), and gestational diabetes. As Co-Director of the Center for Perinatal Studies at Swedish Medical Center, Dr. Williams' current research includes clinical epidemiological studies such as assessment of prenatal screening protocols for diagnosing birth defects and infant chromosomal abnormalities. Her other research interests include intergenerational and life-course risk factors of cardiovascular disease and type 2 diabetes.

Mentor: David E. Woodrum, MD*Biomedical Ethics*

There are opportunities for scholarly activity with a focus on such issues as the limits of parental autonomy or factors involved in clinical decision making. Fellows emphasizing biomedical ethics would be involved in institutional ethics committee activities, ethics consultations, teaching rounds, a targeted reading program, ethics/philosophy course work and, if appropriate, enrollment in a Masters of Public Health program.

CORE CLINICAL TRAINING SITES

Children's Hospital Neonatal Intensive Care Unit (CH-NICU)

Children's Hospital and Regional Medical Center

Medical Director: J. Craig Jackson, MD

The CH-NICU, renovated in December 1999, has a capacity of 19 beds. There are about 520 admissions per year with an average length of stay of 8 days. The average NICU census is 15 of which about 9 are on the Neonatology service, 3 on the Critical Care team, 2 on the Cardiac ICU service, and 2 on General Surgery. Half are admitted in the first day of life, two-thirds in the first week, and 80% in the first month. Patients up to 44 weeks' corrected gestational age are admitted to the neonatal service. The ten most common diagnoses in descending order of the number of patient days are: Infant respiratory distress syndrome, congenital diaphragmatic hernia, necrotizing enterocolitis, meconium aspiration syndrome, perinatal intestinal perforation, newborn respiratory distress (other than RDS), bronchiolitis, perinatal infection, primary pulmonary hypertension, and birth asphyxia. 36% of our patients come from King County, 21% from Snohomish County, 20% from the rest of Western Washington, 15% from Eastern Washington, and 8% from Montana, Alaska, Idaho, and beyond. In addition to caring for the patients on the Neonatology service, the neonatology team (attending neonatologist, neonatal fellow, NNP, and 3 senior pediatric residents) rounds daily on the neonates on the Cardiac ICU and General Surgery teams.

University of Washington Neonatal Intensive Care Unit (UW-NICU)

University of Washington Medical Center

Medical Director: Dennis Mayock, MD

The NICU at the University of Washington Medical Center is a 32 bed unit with approximately 500 admissions per year. The average NICU census is 26 infants. Over 95% of admissions are inborn from the UWMC High-Risk Perinatal Program. Patient care is managed in a multidisciplinary fashion by highly trained nurses, respiratory therapists, Neonatal Nutritionist, Neonatal Pharmacist, neonatal nurse practitioners, Pediatric residents, Neonatal fellows, and Neonatal faculty attendings. Two medical teams provide care to infants. One team manages acute patients and a second team manages normal newborn infants and convalescing preterm infants. Delivery room resuscitation duties are shared by the two medical teams. Daily patient care rounds are directed by the Attending Neonatologist and Neonatal Fellows. Most patients are low birth weight or very low birth weight infants with respiratory difficulties. Neonatal Fellows have ample opportunity to perfect resuscitation and patient management skills. Additionally, Fellows participate in the High Risk Perinatal service and prenatal consultations.

SAMPLE CLINICAL SCHEDULE

Call duty will include in-house call at the Children's Hospital and Regional Medical Center neonatal intensive care unit (CH NICU) and at the University of Washington Medical Center neonatal intensive care unit (UW NICU). Scheduling of clinical duties for Fellows are individualized, but the minimum requirement is 52 weeks of clinical service during the three years of fellowship.

Year 1: 20 Weeks

(4) Four Week NICU blocks
 (1) Two Week Peds Surgery block
 (1) Two Week Perinatology block
 (1) Half Day per Month of High-Risk Infant F/U

Year 2: 20 Weeks

(4) Four Week NICU blocks
 (1) Four Week Cardiac Intensive Care block
 (1) Half Day per Month of High-Risk Infant F/U

Year 3: 12 Weeks

(6) Two Week NICU blocks as Junior Attending
 (1) Half Day per Month of High-Risk Infant F/U

Sample schedules for the three years of Fellowship are shown below.

Goal Rotations and Call**1st Year, 20 weeks clinical duty**

Rotation	Weeks of Service	CH NICU Call Frequency	CH NICU Calls	UW NICU Call Frequency	UW NICU Call Totals
CH NICU	8 wks	q4	14	q0	0
UW NICU	8 wks	q0	0	q4	14
Perinatology	2 wks	q0	0	q4	4
Peds Surgery	2 wks	q4	4	q0	0
Research	29 wks	q6	24	q6	10
Vacation	3 wks	q0	0	q0	0
Nights of Call			42		28
Total Call					70

2nd Year, 20 weeks clinical duty

Rotation	Weeks of Service	CH NICU Call Frequency	CH NICU Call	UW NICU Call Frequency	UW NICU Call Totals
CH NICU	8 wks	q4	14	q0	0
UW NICU	8 wks	q0	0	q4	14
CICU	4 wks	q4	7	q0	0
Research	29 wks	q7	22	q7	7
Vacation	3 wks	q0	0	q0	0
Nights of Call			45		21
Total Call					66

3rd Year, 12 weeks clinical duty

Rotation	Weeks of Service	CH NICU Call Frequency	CH NICU Call	UW NICU Call Frequency	UW NICU Call Totals
CH NICU	6 wks	q4	11	q0	0
UW NICU	6 wks	q0	0	q4	11
Research	37 wks	q8	22	q8	10
Vacation	3 wks	q0	0	q0	0
Nights of Call			33		21
Total Call					54

CONFERENCES

Fellows actively participate in and contribute to the following conferences:

- Pediatric, OB/GYN, and Medicine Grand Rounds (as appropriate)
- Perinatal Pathology Conference
- Morbidity & Mortality Conference
- Research Seminar
- Controversies in Neonatal-Perinatal Care Conference
- Clinical Conference (Cases from all 4 hospitals)
- OB/UW-NICU Case Conference
- Fellows' Curriculum Conference (Comprehensive review of Neonatal Board Topics over 3 years)
- Neonatology-Surgery Conference
- Prenatal Genetics and Fetal Therapy
- Fellows Research Day

A core fellows' curriculum designed for all Fellows in the Department of Pediatrics includes:

- Biostatistics
- Ethics (patient care and clinical research)
- Clinical and laboratory research methodology, study design
- How to write a Grant application and fill out IRB and SAC applications
- How to write an Abstract and a Manuscript for peer review
- Critical literature review
- Principles of evidence-based medicine
- Achievement of proficiency in teaching

OPTIONAL COURSEWORK AND STUDIES

Biostatistics 524: Description of Medical Studies

Epidemiology 521: Maternal/Infant Child Health Problems

MEBI* 552: Clinical Decision Support

MEBI 540: Critically appraising and applying evidence in health care

MEBI 541: Introduction to systematic reviews and meta analysis of evidence

MEBI sessions on teaching geared towards School of Medicine

*Medical Education and Bio-Informatics

PROGRAM FACULTY

Harris Baden, MD

Assistant Professor, Division of Pediatric Critical Care Medicine/Department of Pediatrics
Director, Cardiac Intensive Care, Children's Hospital & Regional Medical Center

Thomas J. Benedetti, MD, MHA

Professor, Division of Perinatal Medicine/Department of Obstetrics & Gynecology
Vice-Chair, Department of Obstetrics & Gynecology

F. Curt Bennett, MD

Professor, Department of Pediatrics
Director, Clinical Training Unit, Center on Human Development & Disability (CHDD) and
High-Risk Infant Follow-Up Clinic (HRIF)

Robert Boucek, MD

Professor and Head, Division of Pediatric Cardiology/Department of Pediatrics
Head of Cardiology, Heart Center, Children's Hospital & Regional Medical Center

Shilpi Chabra, MD

Assistant Professor, Division of Neonatology/Department of Pediatrics
Medical Director, Neonatal Services, Overlake Hospital Medical Center

Gordon Cohen, MD

Associate Professor, Surgery, Division of Pediatric Surgery
Chief, Congenital Heart Surgery, Children's Hospital & Regional Medical Center

Michael L. Cunningham, MD, PhD

Associate Professor and Head, Division of Craniofacial Medicine/Department of
Pediatrics
Clinical Medical Director, Craniofacial Program, Children's Hospital & Regional Medical
Center

Thomas Easterling, MD

Professor, Division of Perinatal Medicine/Department of Obstetrics & Gynecology

Richard Ellenbogen, MD

Professor and Chair, Department of Neurological Surgery

David A. Eschenbach, MD

Professor and Chairman, Department of Obstetrics & Gynecology

Christine A. Gleason, MD

Professor and Head, Division of Neonatology/Department of Pediatrics

Michael G. Gravett, MD
Director of Division of Perinatal Medicine, Department of Obstetrics & Gynecology
Vice-Chair, Department of Obstetrics & Gynecology

Carmen H. Herrera, MD
Assistant Professor, Division of Neonatology/Department of Pediatrics

W. Alan Hodson, MD
Professor Emeritus, Division of Neonatology/Department of Pediatrics

J. Craig Jackson, MD
Professor, Division of Neonatology/Department of Pediatrics
Medical Director, Neonatal Intensive Care Unit, Children's Hospital & Regional Medical Center

Sandra E. Juul, MD, PhD
Associate Professor, Division of Neonatology/Department of Pediatrics
Director, Neonatal-Perinatal Medicine Fellowship Training Program

David Loren, MD
Assistant Professor, Division of Neonatology/Department of Pediatrics

Dennis E. Mayock, MD
Professor, Division of Neonatology/Department of Pediatrics
Medical Director, Neonatal Intensive Care Unit, University of Washington Medical Center

Vincent Mosca, MD
Associate Professor and Chief of Pediatric Orthopaedics, University of Washington Medical Center
Director, Department of Orthopaedics, Children's Hospital & Regional Medical Center

Michael Neufeld, MD, MPH
Clinical Assistant Professor, Division of Neonatology/Department of Pediatrics
Associate Medical Director, Neonatal Services, Providence Everett Medical Center

Craig E. Rubens, MD, PhD
Professor and Chief, Division of Infectious Diseases, Immunology, and Rheumatology/Department of Pediatrics

Robert Sawin, MD
Professor, Department of Surgery
Surgeon-in-Chief, Pediatric Surgery, Children's Hospital & Regional Medical Center

Kendra Smith, MD

Clinical Assistant Professor, Division of Neonatology/Department of Pediatrics
Medical Director, Neonatal Services, Providence Everett Medical Center
Medical Director, Transport Program, Children's Hospital & Regional Medical Center
Assistant Director of Clinical Training, Neonatal-Perinatal Medicine Fellowship Training Program

Thomas P. Strandjord, MD

Associate Professor, Division of Neonatology/Department of Pediatrics
Associate Medical Director, Neonatal Services, Overlake Hospital

Peter Tarczy-Hornoch, MD

Professor, Division of Neonatology/Department of Pediatrics
Division Head and Professor, Division of Biomedical Informatics/Department of Medical Education

John Waldhausen, MD

Associate Professor and Fellowship Program Director, Pediatric Surgery, Department of Surgery, University of Washington Medical Center, Children's Hospital and Regional Medical Center

Michelle Williams, ScD

Professor, Department of Epidemiology
Co-Director, Center for Perinatal Studies, Swedish Medical Center

David E. Woodrum, MD

Professor, Division of Neonatology/Department of Pediatrics

CURRENT FELLOWS

Maneesh Batra, MD, MPH (2004-07)
Pediatric Resident and Chief 2000-04
UWMC and CHRMC, Seattle WA

Pamela Statler Chapman, MD (2005-08)
Pediatric Resident 2002-04
University of Nebraska, Omaha NB

Marcella Mascher Denen, MD (2005-08)
Pediatric Resident 2002-05
Texas A&M University/Driscoll Children's Hospital, Corpus Christi, TX

Maren Olson, MD (2006-09)
Pediatric Resident 2003-06
UWMC and CHRMC, Seattle WA

Jessica Perkins, MD (2006-09)
Pediatric Resident 2003-06
Brown University/Hasbro Children's Hospital, Providence RI