

Neonatal / Perinatal Fellowship Program at Cedars-Sinai Medical Center

Introduction

The fellowship program in Neonatal / Perinatal Medicine at Cedars-Sinai Medical Center combines opportunities for training in clinical perinatal, fetal and neonatal medicine, and in various areas of perinatal research. The

Fellowship is designed for postdoctoral training of individuals with an MD, MD/Ph.D., or equivalent degrees, who are highly motivated toward academic careers in the field of Neonatal/Perinatal Medicine.

The training program offers a large number of clinical and basic science research mentors in neonatology thereby providing a wide scope of research opportunities in the field of cell &

molecular biology, neurosciences, perinatal endocrinology & metabolism, perinatal pulmonology & immunology, developmental biology, genetics, and epidemiology.



Table of Contents

- **Introduction**
- **Overview of Cedars-Sinai Medical Center Educational Program**
- **Facilities at CSMC**
- **Our Neonatology Faculty and Ongoing Research Programs**
- **Clinical Training**
- **Research Training**
- **Core Curriculum'**
- **Lecture Series**
- **Research Experience and Funding**
- **Overview of the Three-year Program**
- **Eligibility**
- **Contact Information**

Overview of Cedars-Sinai Medical Center and Educational Program

Cedars-Sinai Medical Center (CSMC) is affiliated with the University of California at Los Angeles (UCLA) and is a general hospital with 800 beds. Its Pediatric Residency Program is considered of top quality among the pediatric residencies available in the greater Los Angeles area. UCLA medical students rotate through regular introductory clerkships in pediatrics, and in the past few years the neonatal elective program has been considered among the best of all electives in the UCLA system.

The Department of Pediatrics is chaired by Dr. Charles F. Simmons, Jr., who is also the Director of the division of Neonatology and Director of the NICU at Cedars-Sinai Medical Center. Dr. Ricardo Azziz, a superb perinatologist widely recognized nationally and internationally, chairs the OB/GYN department and The Maternal-Fetal Medicine division is headed by Dr. Calvin Hobel, a world renowned clinician and investigator in the area.

Facilities Available for Training at Cedars-Sinai Medical Center:

Cedars-Sinai Medical Center (CSMC) has approximately 750 beds and two large research buildings. The Pediatrics Department in-patient ward has 40 beds, a Pediatric intensive care unit of 8 beds and 70 beds in the Well Baby Nursery. There are 4 meeting/classrooms within the Pediatrics Department itself and an ample number of other meeting facilities available throughout the hospital. The Pediatric Ambulatory Care serves a population from a wide variety of cultural and ethnic backgrounds. There are approximately 3,000 patients seen each year with a total of 7,000 patient visits.

There are approximately 7000 deliveries per year at CSMC, the largest delivery service in the state of California. A new, state-of-the-art Newborn Unit has opened. There are approximately 650 admissions to the NICU per year, of which about 110 are VLBW infants. The Unit has state of the art ventilatory equipment including HFJV, HFO, and bedside pulmonary function capabilities. Also available for patient care is nitric oxide, still under investigational use. Major collaboration exists with Genetics and Neonatal-Fetal Medicine. In addition, there is a new NICU transport program here at Cedars.



Research Facilities at Cedars-Sinai

The Steven Spielberg Pediatric Research Center has approximately 12,600 square feet in total for research laboratories (collagen research, molecular hematology, skeletal dysplasia research, a cell line repository), which includes a common equipment room as well as liquid nitrogen and tissue storage, three offices and a copy room. The Cytogenetics Laboratory is about 1,200 sq. ft. with a newly acquired computer assisted karyotyper. The HLA laboratory has 1,132 square feet on the second floor of this building. There are 2,500 sq. feet of office and computer space on the third floor of the Spielberg Building, the home of the common disease research unit. There are also computers, support staff, and a genetics library available. The new Davis Research Building houses an additional two molecular laboratories and has 2,561 sq. ft.

Steven Spielberg Pediatric Research Center



The Davis Research Building



The division of Neonatology has 500 square feet of lab space, and is equipped to perform experiments in molecular biology and protein biochemistry. This includes protein gel electrophoresis, western blotting, PCR, gene cloning, sequence analysis, and southern and northern blotting. In addition, the lab is equipped to perform careful immunohistochemical analysis and in situ hybridization analysis. The lab space is in the Davis Research Building at The Cedars-Sinai Medical Center, and is in close proximity to the animal housing facility, which will house the animals. The Lab is also equipped to measure Nitric Oxide both in the liquid and gas phase. Electron Microscopy is shared with Genetics.

Neonatology Faculty and Ongoing Research Programs in the Division of Neonatology
ONGOING RESEARCH IN DIVISION OF NEONATOLOGY

Charles F. Simmons, Jr., M.D. Dr. Simmons' major areas of research interest include: **1) Developmental Biology of Myofibroblasts and Smooth Muscle** - his laboratory is interested in the developmental biology of two specialized cell types found in virtually every organ of the body, the myofibroblast and the smooth muscle cell. These ubiquitous cells are involved in disease states that involve inflammation and abnormal muscle reactivity in blood vessels or hollow organs such as the reproductive tract, GI tract, and lung. Of note, disease states involving these cell types include such diverse diseases as asthma, pulmonary hypertension, atherosclerosis, preterm labor, chronic lung disease, retinopathy, inflammatory bowel disease, cirrhosis, and congestive heart failure. Indeed, many of these diseases significantly contribute to morbidity and mortality in the newborn period. The long-range goal is to use the transgenic mouse model, which Dr. Simmons' laboratory team developed, to discover strategies that can modulate myofibroblast and smooth muscle development, allowing new approaches to prevent or treat common disease in the newborn and adult. **2) Neonatal-Perinatal Fellowship Training** - Major challenges will confront Neonatal-Perinatal fellowship training over the next decade, including changes in steady-state vs. growth mode manpower requirements, diversification of research fields and career trajectories, and the neonatology content of general pediatrics residency training curricula. Continued future success in our field will depend upon wise decisions regarding the scope and focus of fellowship training. These decisions will, in turn, rely upon accurate data regarding career choices and career development of recent trainees. Dr. Simmons is internationally recognized for his academic career development of over 85 trainees in Neonatal-Perinatal Medicine during the last 12 years, thus providing a framework for leading local, regional, and national trends in fellowship training. **3) Human Genetic Research and Therapy** - In order to reap the fruits of the Human Genome Project, consistent and ethical review of human genetic research protocols must be performed by Institutional Review Boards. Genetic screening of newborns will create an increasingly important interface between basic knowledge about our genetic makeup and the societal mores that guide the ethical use of this vital information. Dr. Simmons has led local and regional efforts to educate IRBs about the challenges and opportunities posed by IRB review of human genetic research protocols.

Representative Publications:

1. Breitfeld PP, **Simmons CF, Jr**, Strous GJAM, and Schwartz AL. Cell biology of the Asialoglycoprotein receptor system: A model of receptor-mediated endocytosis. *Int Rev Cytol.* 1985; 97:47-95.
2. Fallon R, **Simmons CF, Jr**, Geuze NJ, Strous GJAM, and Schwartz AL. Mechanisms of recycling of the asialoglycoprotein receptor: insights from the pathway inhibitors primaquine and phorbol esters. *UCLA Symposia.* 1986; 96:117-127.
Geuze NJ, Van der Donk JAWM, **Simmons CF, Jr**, Slot JW, Strous GJAM, and Schwartz AL. Adsorptive endocytosis in liver parenchymal cells. *Int Rev Exp Pathol.* 1986; 29:113 - 171.
3. Van der Ende A, duMaine A, **Simmons CF**, Schwartz AL, and Strous G. Iron metabolism in BeWo choriocarcinoma cells: transferring mediated uptake and release of iron. *J Biol Chem.* 1987; 262:8910-16.
4. Lee B, **Simmons CF**, Wileman T, and Geha RS. Intracellular cleavage of newly synthesized low affinity Fce receptor (Fce R₂) provides a second pathway for the generation of the 28 KD soluble Fce R₂ fragment. *J Immunol.* 1989; 142:1614-20.

5. **Simmons CF.** The development of cellular polarity in transport epithelia. *Semin Perin.* 1992; 16:78-89.
6. Alper SL, Stuart-Tilley A, **Simmons CF**, Brown D, and Drenckhahn D. The fodrin-ankyrin cytoskeleton of choroid plexus preferentially colocalizes with apical Na⁺, K⁺ -ATPase rather than with basolateral anion exchanger AE2. *J Clin Inv* 93(4):1430-8, 1994.
7. Shannon KM, Keith JF III, Mentzer WC, Ehrenkrantz RA, Brown MS, Widness JA, Gleason CA, Bifano EM, Millard DD, Davis CB, Stevenson DK, Alverson DC, **Simmons CF**, Brim M, Abels RI and Phibbs RH. Recombinant human erythropoietin stimulates erythropoiesis and reduces erythrocyte transfusions in very low birth weight preterm infants. *Pediatrics.* 95: 1-10, 1995.
8. **Simmons CF**, Clancy TE, Quan RW, and Knoll JHM. The oxytocin receptor gene (OXTR) localizes to human chromosome 3p25 by fluorescence in situ hybridization and PCR analysis of somatic cell hybrids. *Genomics* 26, 623-5, 1995.

Books, Chapters

1. **Simmons, CF** and Jose, J: Fluid and electrolyte management of the newborn. In: *Manual of Neonatal Care*, A Stark and J Cloherty, ed. Little Brown & Co Boston, MA. 1985. 435-446.
2. **Simmons, CF** and Ichikawa, I. Normal water and electrolyte homeostasis: external balance of water and electrolytes. In: *Pediatric Textbook of Fluids and Electrolytes*, I. Ichikawa, ed. Williams and Wilkins, Baltimore, MD. 1990. pp 21-30.
3. **Simmons, CF.** Fluid and electrolyte management of the newborn. In: *Manual of Neonatal Care*, A Stark and J Cloherty, ed. Little, Brown and Co. Boston, MA. 1991. pp 457-468.
4. **Simmons, CF.** Fluid and electrolyte management of the newborn. In: *Manual of Neonatal Care*, A Stark and J Cloherty, ed. Little, Brown and Co. Boston, MA. 1996.
5. Nethersole, S, Foreman, S, and **Simmons, CF.** Principles of normal newborn, well child, and adolescent care. In: *Manual of Pediatric Therapeutics.* Graef, J et al., ed. Lippincott-Raven Publishers Co. New York, NY. 6th edition. 1997. pp 17-62.
6. Hansen, A and **Simmons, CF.** Management of the sick newborn. In: *Manual of Pediatric Therapeutics.* Graef, J et al., ed. Lippincott-Raven Publishers Co. New York, NY. 6th edition. 1997. pp 165-218.
7. **Simmons CF.** Genetic diagnosis of the surgical newborn. In: *Manual of Intensive Care of the Surgical Newborn.* Hansen, A and Puder, M ed. Submitted March 2002.
8. **Simmons CF** and Jennings R. Fetal Diagnosis and Therapeutics. In: *Manual of Intensive Care of the Surgical Newborn.* Hansen, A and Puder, M ed. Submitted March 2002.
9. Lin, PW and **Simmons, CF.** Fluid and electrolyte management of the newborn. In: *Manual of Neonatal Care*, A Stark and J Cloherty, ed. Little Brown & Co. Boston, MA. Submitted.

Crisitina Bertolotto, M.D.

Dr. Bertolotto studies the development of hearing and causes of deafness during development. Synaptogenesis, biochemistry and morphology in neurons and sensory cells during development. Morphological study of the neural fibers during development, adulthood and aging in central and peripheral nervous system.

Representative Publications:

1. D. D. Simmons, **C. Bertolotto**, and Narins, P. M (1994). Morphological gradients in sensory hair cells of the amphibian papilla of the frog, *Rana pipiens pipiens*. *Hearing Research*. 80:7178
2. R-H Liu, **C. Bertolotto**, J.K. Engelhardt and M.H. Chase (1996). Age related changes in soma size neurons in the spinal cord motor column of the cat. *Neuroscience Letters* 211: 163-166.
3. Simmons, D.D., **C. Bertolotto**, J.H. Kim, J. Raji-Kubba, and N.B. Mansdorf (1998). Choline acetyltransferase expression during a putative developmental waiting period. *Journal of Comparative Neurology*. 397:281-295.
4. Simmons, D.D., **C. Bertolotto**, K. Typpo, M. Wu, and A. Clay (1998) Differential onset, growth and distribution of cholinergic neurons in the developing hamster superior olive. *Anatomy and Embryology*. (In Press)

Andre Vanderhal, M.D.

Dr. Vanderhal's areas of interest include high frequency ventilation, patient triggered ventilation, and pulmonary mechanics and function monitoring, especially as related to teaching optimal management of patients maintained on and weaning from ventilators. He is also responsible for interpretation of cardio respiratory control studies during sleep, home apnea monitoring and support services after ALTE. His other interest is calcium and phosphorus retention during TPN for preterm and sick infants.

Representative Publications:

1. **Van der Hal AL**, Rodriguez AM, Sargent CW, Platzker ACG, and Keens TG: Hypoxic and hypercapnic arousal responses and prediction of subsequent apnea in apnea of infancy. *Pediatrics* 75:848-854, 1985
2. Davidson Ward SL, Nickerson BG, **van der Hal AL**, Rodriguez AM, Jacobs RA and Keens TG: Absent hypoxic and hypercapnic arousal responses in children with myelomeningocele and apnea. *Pediatrics* 78:44-50, 1986
3. Davidson Ward SL, Keens TG, Chan LS, Chipps BE, Carson SH, Deming DD, Krishna V, MacDonald HM, Martin GI, Meredith KS, Merritt TA, Nickerson BG, Stoddard RA **and van der Hal AL**: SIDS in infants evaluated by apnea programs in California. *Pediatrics* 77:451-455, 1986
4. Keens TG and **van der Hal AL**: Use of hypoxic and hypercapnic arousal responses in evaluation of infant apnea. *Perinatology-Neonatology* 8:29, 1984
5. **Vanderhal A**, Chow L, Raber J, Sola A: Tidal volume measurements in neonates: are they reliable? *Pediatr Res* 45(4):324A, 1999.
6. Chow L, **Vanderhal A**, Raber J, Sola A: Tidal volume measurements in neonatal pressure control ventilation: are they meaningful? *Pediatr Res* 45(4):297A, 1999.
7. **Vanderhal A**: Eliminating the "Multiple Crash Syndrome" or how to teach ventilatory management. *Pediatr Res* 45(4):79A, 1999.

Arie Leon Alkalay, M.D.

Dr. Alkalay is the Associate Director of the Well Baby Nursery and Clinical Professor of Pediatrics UCLA School of Medicine. A recipient of the "humanitarian award" and the "teaching award" from CSMC and the Department of Pediatrics, he is the primary creator of the following guidelines for the WBN and NICU: Neonatal non-persistent hypoglycemia, Neonatal Hyperbilirubinemia, Infants of substance abuse mothers, Discharge guidelines from WBN, Intrauterine growth retarded infants, Neonatal universal hearing screen, Pain management for non-ritual neonatal circumcision. He is the author of over 30 papers.

Research interests:

Remodynamic of anemia of prematurity researched by echocardiography and Doppler studies
Neonatal non-persistent hypoglycemia Hypothalamic-pituitary-adrenal axis in newborns
The research in these three areas is clinical-type research.

Representative Publications:

1. **Alkalay AL**, Mogilner BM, Nissim F, Edelstein S. Production of the hydroxylated metabolites of vitamin D in neonate with single hypoplastic dysplastic kidney. *Archives of Diseases in Childhood.* 58: 66-8, 1983.
2. Garty R, **Alkalay AL**, Bernheim JL. Parathyroid hormone secretion and responsiveness to parathyroid hormone in primary hypomagnesemia. *Israel Journal of Medical Sciences.* 19: 345-8, 1983.
3. Stark H, **Alkalay AL**, Ben-Bassat M, Hazaz B, Joshua H. Levam induced glomerulonephritis: a possible role for direct complement activation in situ. *The Journal of Experimental Pathology.* 66: 165-71, 1985.
4. **Alkalay AL**, Pomerance JJ, Edelstein S. Osteopenia of prematurity: a preventable disease. *Journal of Perinatology.* 6: 27-32, 1986.
5. Hurvitz CH, **Alkalay AL**, Sloninsky L, Kallus M, Pomerance JJ. Cyclophosphamide therapy in life-threatening vascular tumors. *The Journal of Pediatrics.* 109: 360-3, 1986.
6. **Alkalay AL**, Pomerance JJ, Rimoin DL. Fetal varicella syndrome. *The Journal of Pediatrics* 111: 320-2, 1987.
7. **Alkalay AL**, Pomerance JJ, Puri AR, Lin BJC, Vinstein AL, Neufeld ND, Klein AH. Hypothalamic-pituitary-adrenal axis function in very low birth weight infants treated with dexamethasone. *Pediatrics.* 86: 204-10, 1990.
8. **Alkalay AL**, Klein AH, Nagel RA, Pomerance JJ. Evaluation of hypothalamic-pituitary adrenal axis in premature infants treated with dexamethasone. *American Journal of Perinatology.* 13:473-7, 1996.
9. **Alkalay AL**, John M. Graham, Jeffrey J Pomerance. Evaluation of neonates with intrauterine growth retardation: review and practice guidelines. *Journal of Perinatology* 18:142-51, 1998.
10. **Alkalay AL**, Sola A. Analgesia and local anesthesia for non-ritual circumcision in stable healthy newborns. *Neonatal Intensive Care* 13:19-22, 2000
11. **Alkalay AL**, Sola A. Neonatal jaundice guidelines. *Neonatal Intensive Care* 13:15-25, 2000
12. **Alkalay AL**, Galvis S, Moffett N. Universal Neonatal Hearing Screening. *Neonatal Intensive Care* 14:24-27, 2001
13. **Alkalay AL**, Sharon Galvis, David Ferry, Richard Krueger. Hemodynamic changes in anemic premature infants: are we allowing the hematocrits to fall too low? 2002 (submitted)

Soledad D. Austin, M.D.

Dr. Austin has been involved in clinical research grants from the Immunex Corporation as a participating principal investigator investigating the use of Granulocyte-Macrophage Colony-Stimulating and from Cedars-Sinai Medical Center to evaluate predictive indices of end-stage liver disease in infants with TPN cholestasis. Currently initiating a clinical protocol to determine if “Parathyroid Hormone-Related Protein Levels are Predictive of the severity of RDS and Chronic Lung Disease in the newborn infant” (in association with John Torday, Ph.D. and C. Hobel, M.D.)

Asha Puri, M.D.

Dr. Puri is the Associate Clinical Director of the NICU. She has been the leader for application of new strategies of ventilation and has been responsible for introducing and establishing Neonatal Pulmonary Function testing and Inhaled Nitric Oxide Therapy. She has also been involved in several multicenter research protocols. She has an ongoing research project, measuring Nitric Oxide metabolites in the neonate, and INO for prevention of CLD.

Representative Publications:

1. Alkalay AL, **Puri AR**, Pomerance JJ, Kallus M, Gans SL, Hurvitz CH, Farber SJ and Sloninsky L. Mesenchymal hematoma of the liver responsive to cyclophosphamide therapy: Therapeutic approach. *J Pediatric Surgery* 20: 125, 1985.
2. **Puri AR**, Alkalay AL, Pomerance JJ, Neufeld ND and Thangavel M. Neonatal hypoglycemia associated with umbilical artery catheters positioned at T8-9. *American J Perinatol* 4:195-197, 1987.
3. **Puri AR**, Neonatal meningitis. *J of Perinatol* 9: 454-455, 1989.
4. Alkalay AL, Pomerance, JJ, **Puri AR**, Lin BJC, Vinstein AL, Neufeld ND and Klein AH. Hypothalamic-pituitary-adrenal axis function in very- low- birth- weight infants treated with dexamethasone. *Pediatr* 86:204-210, 1990.
5. Keszler M, Donn SM, Bucciarelli RL, Alverson DC, Hart M, Lunyong V, Modanlou HD, Noguchi A, Pearlman SA, **Puri AR**, Smith D, Stavis R, Watkins MN and Harris TR. Multicenter controlled trial comparing high frequency jet ventilation and conventional ventilation in newborn infants with pulmonary interstitial emphysema. *J Pediatr* 119:85-93, 1991.
6. Berry D, Long W, and the American Exosurf Neonatal Study Group II (**Puri A**, at CSMC): Comparison of the effect of three doses of a synthetic surfactant on the alveolar-arterial oxygen gradient in infants weighing >1250 gm with respiratory distress syndrome. *J Pediatr* 124:294-301, 1994.
7. Corbet A, Gerdes J, and **Puri A**. Double blind, randomized trial of one versus three prophylactic doses of synthetic surfactant in 826 neonates weighing 700-1100 grams: Effects on mortality rate. *J Pediatr* 1995; 126:969-78..
8. Gerdes J, and the American Exosurf Neonatal Study Groups I and II (**Puri A**, at CSMC): Health and neurodevelopment outcome at 1-year adjusted age in 508 infants weighing 700 to 1100 grams who received prophylaxis with one versus three doses of synthetic surfactant. *J Pediatr* 1995;126:s26-32.
9. Courtney S, Long W, and the American and Canadian Exosurf Neonatal Study Group I-IV (**Puri A**, at CSMC): Double-blind 1-year follow-up of 1540 infants with respiratory distress syndrome randomized to rescue treatment with two doses of synthetic surfactant or air in four clinical trials. *J Pediatr* 1995; 126:S43-52.
10. M Baserga, **A Puri**, A Sola. The use of Topical Nitroglycerin Ointment to treat Peripheral Tissue Ischemia Secondary to Arterial Line Complications in Neonates. *Journal of Perinatology*, in print

11. **Puri A**, Duncan R, Forbis S, Hobel C, Sola A: Prenatal Factors Influencing Survival of Infants Born at 24-26 Weeks Gestation. APS/SPR, 1998 (presented).
12. **Puri A**, Baserga M, Arora C, Bui T, Hobel C, Sola A: Nitric Oxide levels in Term Fetal Circulation, Relation to the presence of Labor. WSPR, 1999 (presented).
13. **Puri A**, Baserga M, Arora C, Bui T, Hobel C, Sola A: Nitric Oxide levels in Term Fetal Circulation, Relation to the presence of Labor. SPR, 1999 (presented). AAP, 2000 (presented)
A randomized, Multicenter Masked comparison Trial of Curosurf and Survanta in the treatment of established Respiratory Distress Syndrome in Preterm Infants. R Ramanathan, The North American Study Group – **A Puri** Presented at the Society for Pediatric Research April 2002

Sabitha Sehgal, M.D.

Dr. Sehgal is the Co-Director of the Infant Progress Clinic and is responsible for all morbidity and mortality conferences, as well as the Neonatal/Maternal-Fetal Medicine Conferences. She will also be focusing on Proposition 10 endeavors about Infant Progress Clinic services within the community.

Clinical Training

Our program offers extensive training in all aspects of clinical neonatal perinatal medicine including maternal fetal exposure to patients with in vitro diagnosis of various and diverse conditions and all clinical problems seen in neonatology, including extreme low gestation age, lung disorders, congenital heart disease, surgical anomalies, etc.

Dr. Charles Simmons has been recently appointed as the Director of the Division, having been the Director of the NICU at Children's Hospital in Boston and the Director of the Neonatal-Perinatal Fellowship Training Program at Children's Hospital, Brigham & Women's Hospital, Beth Israel Deaconess Medical Center, and Massachusetts General Hospital for the past 13 years.

As a division, we have implemented a program of nitric oxide treatment and all techniques for mechanical ventilation are available for infants treated in this nursery. We conduct weekly clinical conferences with about three hours of program and weekly educational activities for members of the division. Furthermore, while on clinical services there are daily x-ray rounds with pediatric radiologists and active interaction with inter-consultants from all pediatrics subspecialties.

Research Training

The organization and large number of patients allow for excellent learning and research opportunities. According to the fellows' interest, the research programs are tailored. In general, topics include general epidemiological perinatal issues, clinical research related to pulmonary disease, central nervous system and gastrointestinal abnormalities, and outcomes research. Collaboration with clinical and laboratory facilities from the maternal fetal division are related to maternal stress and early labor, and stress and adrenal function in the immediate neonatal period. The genetic laboratories in the Steven Spielberg Research Center are state of the art and can provide fellows exposure to all relevant research in basic science and subcellular molecular technologies. Current and potential studies include effects of nitric oxide on small airway muscle, changes in the extracellular matrix of the developing brain in response to injury, changes in brain oxygenation during acute illness, ischemic hypoxic events, high frequency mechanical ventilation, and CO₂ changes.

Core Curriculum Lecture Series

Clinical Neonatology Core Lecture Series covering all systems

Physiology Lecture series covering all systems

Journal Club sessions – include latest developments in Neonatology

Research Lecture series – to cover ethics in research, study design, biostatistics, introduction to cellular and molecular biology, how to write an abstract, how to present an abstract, how to write a manuscript, how to write a grant application. In addition, fellows will be expected to take the necessary radiation safety, animal care, and IRB-related courses offered by the institutions. The core curriculum will consist of assigned speakers with expertise in the different areas, the speakers will arise from the division of Neonatology and beyond. Attending conferences at UCLA are supported and encouraged.

Research Experience and Funding

All fellows will be exposed to a mentor-based program. Fellows will be expected to develop a research project, apply for IRB or animal care approval, formulate a grant application to offset their salary during year 2 & 3. (Upon success with an institutional training grant, some of the fellows will be eligible for funding through this mechanism.) During the three years, the fellows will be expected to present their results at National meetings, and formulate manuscripts. It is expected that they will be assimilated into the culture of the mentor's laboratory/clinical research program. The fellows will be expected to attend regularly scheduled laboratory meetings/clinical research project meetings.

Overview Of The Three-Year Program

The 36 months are divided into 39 "periods" of 4 weeks each

1. Clinical:

- A. Neonatal clinical service Primary patient care responsibility: up to 11 periods. In addition, during the third year of training the residents may be asked to spend one period as acting attending neonatologist ("junior neonatologist"). "back-up" patient care responsibility: up to 6 periods (night call, high-risk resuscitation).

- B. Infant Progress Clinic
20- 30 clinics, Thursdays 7:30 a.m. - 1:00 p.m.

1Research: A total of 18 periods (plus partially protected time in 5 - 6 periods)

Administration:

At least 54 hours (divided in 1 1/2 hours per week during 3 months per year and during 1 period in 3rd year of training).

2Vacation: Three periods over the 3 year program

3Attendance to regional and national clinical and research meetings 5-8 during the entire 3 year program.

Summary of distribution of major activities during the three-year program Eligibility

Fellowship year	1st Year	2nd Year	3rd Year	Total Periods
RESEARCH	6-7 periods	7-8 periods	7-8 periods	21-23 periods
CLINICAL				
Primary patient care				
Blue team	3 periods	1 period	1 period	5 period
Gold team	2 periods	1-2 period	1 period	4-5 period
“Junior Attending”			1 period	1 period
“Back-patient up” care				
esusc “set-up”	1 period	1 period	1-2 periods	3-4 periods
“Second call”	1 period	1 period	0-1	2-3 periods
On call				
Nights	31	25	20	76 nights
Weekends	15	1	16	46 week days
Infant Progress Clinic	10	10	10	25-30 clinics
MEETINGS	2-3 /wk	2-3 /wk	2-3 /wk	
EDUCATIONAL	1-2/yr	1-3/yr	1-3/yr	4-8
MEETINGS				
VACATION	3-4 wk	3-4 wk	4 wk	

All candidates should have completed a three-year American Board accredited Pediatric Residency training program and become eligible for the American Board of Pediatrics. In addition, the candidates should have an aptitude for an academic career or have demonstrated experience in research (e.g. previous publications, abstract presentations, hold a Ph.D, etc.). Finally, the candidate must have or be eligible for a California medical license. Application procedures require submission of a curriculum vitae, and three letters of recommendation, including one from your Residency Director or his Associate. If you have any questions, please do not hesitate to contact us.

Contact Information

All information should be sent to:

**Charles F. Simmons, Jr., M.D.,
 Director of Neonatal-Perinatal Fellowship
 Professor of Pediatrics, David Geffen School of Medicine at UCLA.
 Cedars-Sinai Medical Center
 8700 Beverly Blvd., Suite 4226
 Los Angeles, CA 90048
 Tel. (310) 423-4434 FAX (310) 423-0460
 E-mail to carlos.castellon@cshs.org or Kathy.temple@cshs.org**