Innovations in Neonatology



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28 PEOPLE

Drs. Carroll, Suttner assume new positions



<u>Jeanne Carroll, M.D.</u>, a neonatologist at Rady Children's Hospital-San Diego and an assistant clinical professor of pediatrics at UC San Diego School of Medicine, has recently joined the <u>Rady Children's Institute for Genomic Medicine</u>.

Dr. Carroll will be working alongside the Institute's scientists to help advance precision care for critically ill neonates in Rady Children's Hospital's neonatal intensive care unit. Her area of interest is genetic etiologies of lung disease and pulmonary hypertension.

The Institute was recently featured in *Time* magazine for its groundbreaking work with rapid whole genome sequencing (rWGS) in newborns. The <u>article</u> highlights the cases of two critically ill newborn patients at Rady Children's in which rWGS led to lifesaving care

in one case and valuable clinical information in the other. Currently, rWGS is available only as part of clinical research trials being conducted by the Institute; genomic testing is being offered only to patients receiving intensive care at Rady Children's and patients at children's hospitals participating in the Institute's research studies.



<u>Denise Suttner, M.D.</u>, clinical director of Rady Children's neonatal intensive care unit and director of the San Diego Regional ECMO Program, will begin her new position as the Hospital's chief of staff in January.

During her two-year term, she will oversee the operations of the medical staff, serve as a liaison between the Hospital board and the medical staff, and facilitate relationships between the medical staff and allied health professionals.

Dr. Suttner has also been elected the new chapter representative of the District 9 Section on Neonatal-Perinatal Medicine (SONPM) of the American Academy of Pediatrics (AAP). The Section, with a membership of nearly 3,500 physicians, is the AAP's largest specialty subgroup.



Doctors spearhead global health initiatives

Neonatologists Jose Honold, M.D., medical director of international services at Rady Children's Hospital, and Carlos Ramos, M.D., are collaborating with institutions in Mexico and around the world to organize pediatric



conferences. They are also leading the efforts on a new pediatric residency global health program.

Dr. Honold organizes the annual Neosimposium in Mexico every other year and helps organize the CONAPEME pediatric conference, where over the last two years, he has invited Rady Children's specialist to give lectures. Additionally, he and other members of the Neonatology division helped organize the largest neonatal conference in Latin America, which attracts more than 2,000 attendees. Recently, Dr. Honold organized the third conference of the International Neonatal Association, held in Lyon, France, where he was a moderator and speaker.

Dr. Ramos has been traveling internationally to forge relationships with other countries, which he has established in China with the Fudan University and in Nicaragua with the Hospital Nacional La Mascota.

The doctors, along with infectious diseases specialist Chris Cannavino, M.D., also recently launched a pediatric residency global health program as an international clinical elective. A binational exchange is in place between Rady Children's/UC San Diego and Universidad de Guadalajara in Mexico of pediatric residents and fellows for a one-month rotation. Two pediatric residents from UC San Diego and two from Universidad de Guadalajara have already completed rotations. After the first year, the program is planned to expand to other countries. Other international electives currently offered include an international research elective, volunteering at a free clinic in Tijuana and the Global Health Journal Club.



RECOGNITION

Division achieves No. 5 ranking in national survey

Rady Children's Division of Neonatology was ranked as the fifth best in the nation for 2017-18 by U.S. News & World Report.

In its "Best Children's Hospitals" survey, U.S. News ranked 50 pediatric centers on the care of fragile newborns. Breast milk at discharge, 30-day readmissions and patient volume, along with other data collected from a detailed clinical survey of children's hospitals, produced 85 percent of each



hospital's score. The other 15 percent reflects nominations from pediatric specialists and subspecialists who responded to surveys









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in 2015, 2016 and 2017 and recommended the hospital for serious cases in their specialty.

The Division scored "excellent" on the following measurements:

- Ability to prevent infections throughout hospital (success in minimizing infections through hand hygiene, vaccination and other proven measures)
- Keeping breathing tube in place (success in preventing breathing tube from being removed by patient or inappropriately by care provider)
- Matching breast milk with correct infants (success in ensuring that newborns receive breast milk from the correct source)
- Tracking of growth metrics for treated patients (success in tracking growth metrics for treated patients prior to discharge or transfer)
- ECMO availability (additional credit for formally trained ECMO team)
- Advanced clinical services offered (such as pediatric trauma center, intensive-care pharmacist and neonatal nutritionist)
- Clinical support services offered (such as rapid-response team and programs in pediatric pain management and anesthesia)
- Specialized clinics and programs available (such as metabolic team, home ventilator management team and NICU-specific palliative care program)
- Has full-time subspecialists available (such as neonatologists)
- Commitment to quality improvement (such as collecting and analyzing data to improve quality of care)
- Adoption of health information technology (use of electronic medical records and computerized physician order entry to improve patient safety and care)
- Active fellowship programs (to provide advanced training in 15 programs such as neonatal-perinatal medicine and infectious diseases)
- Commitment to clinical research (participation in selected treatment and quality improvement networks)
- Enlists families in structuring care (such as through a parent advisory committee that meets frequently)

For all 10 years it has been surveyed, the Division has been ranked as one of the nation's best.



RESEARCH

Doctors earn prestigious travel awards

Four members of the Division of Neonatology at Rady Children's Hospital and UC San Diego have garnered Mead Johnson Travel Awards to the 2018 Western Society of Pediatric Research Meeting. They will present their abstracts at a subspecialty session of the meeting.



Typically, a total of five to six awards are given annually to

neonatologists across the country, says division chief <u>Lawrence</u> (<u>Lance</u>) <u>Prince</u>, <u>M.D.</u>, <u>Ph.D.</u> "For one division to receive four in a single year is truly outstanding."

The recipients and their abstracts are as follows:

Sandra Leibel, M.D.

Rescue of Surfactant Protein B Deficiency in Patient-specific Induced Pluripotent Stem Cell Derived Alveolar Type II Cells Using Lentiviral Gene Therapy

Dr. Leibel is studying human lung development using an in vitro model of lung organoids derived from patient-specific induced pluripotent cells. Her focus is on surfactant protein deficiencies, which can be lethal in the newborn period, and correcting the mutations using gene therapy. If she is successful in fixing the mutations, she plans to transplant the corrected cells back into the lungs of affected babies as a bridge to transplant or potentially as a cure for their disease.

Enikő Sajti, M.D., Ph.D.

Genomic Assessment Reveals Marked Differences in the Inflammatory Response of Mononuclear Phagocytes in the Lung

The Sajti lab's primary interests are to understand the molecular and cellular mechanisms controlling the development of the neonatal innate immune system. This project investigates the role of specific subsets of lung innate immune cells, lung macrophages and monocytes during acute lung injury. To understand the relative contribution of these innate immune cells to lung inflammation, the lab employs genome-wide approaches and computational analyses to identify transcriptional and epigenetic mechanisms unique to each cell type. By elucidating disease- and cell-type-specific gene regulatory networks, the lab hopes to develop targeted therapies tailored to the needs of individual patients.

Janessa Law, M.D., (third-year fellow) Hypothermia Impairs Human Neural Stem Cell Proliferation and Migration In Vitro

Dr. Law's project focused on the effect of whole-body hypothermia (HT) on human neural stem cell (hNSC) function in vitro to help understand how, and more importantly when, hNSCs should be used in conjunction with HT to improve neurologic outcomes in babies with perinatal hypoxic ischemic injury (HII). Although whole-body HT has become the standard of care in treating perinatal HII, it is ineffective in severe cases. Prior data supports the use of an hNSC-based intervention that salvages the injured brain and improves outcomes. None of these studies, however, evaluated hNSCs under the hypothermic conditions used in HT.

Kathryn Anderson, M.D. (second-year fellow) Differential Inflammatory Responses in Fetal Macrophage Populations

Dr. Anderson is using a mouse model to test the hypothesis that

two macrophage populations – one derived from the yolk sac and the other derived from the fetal liver – have distinct inflammatory properties. Her goal is to better understand the relative roles of these macrophage populations in tissue injury and repair. An improved understanding could have important implications in neonatal disease.

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