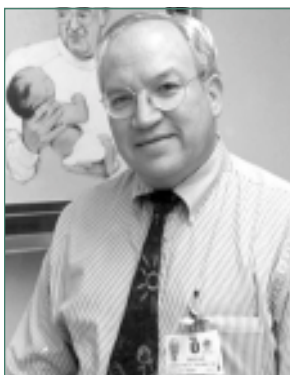




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From the Section of Neonatology, Department of Pediatrics, Baylor College of Medicine, Houston, Texas

Vol. 2 No. 3, March 2002



## Faculty Spotlight

**Gerardo Cabrera-Meza, MD**

**D**r. Cabrera-Meza (“Lalo”), a native of Guatemala, graduated from the San Carlos University School of Medicine and completed pediatric training at Roosevelt Hospital in Guatemala City. After a fellowship in perinatal/neonatal medicine at Baylor College of Medicine, Lalo returned to Guatemala and soon was Head of the Newborn Section at Roosevelt Hospital, the nation’s largest hospital with 13,000 births per year. In 1991 he became Executive Director of the hospital.

Patient care and education were challenging, but Lalo persevered.

- He taught basic neonatal care, reorganized newborn services, and introduced mechanical ventilation, and the neonatal mortality rate fell from 26 to 13 of 1000 live births.
- He introduced the Kangaroo Mother Program and became a passionate advocate of breastfeeding, especially for low birth weight infants.
- He signed a US \$9-million contract to remodel the maternity building (built in 1955), now one of the best maternity units in Latin America.
- He was a founder and second president of the Guatemalan Perinatal/Neonatal Association.
- He organized an annual International Perinatal and Neonatal Course with participation of Baylor faculty as lecturers.
- He helped to institute national perinatal care guidelines and continuous medical education activities in newborn care.

In 1993, Dr. Cabrera-Meza left his country to join the Neonatology Section at Baylor where

see Spotlight, page 2

## The Front Line

### *Neonatal nutrition: the importance of training*

by Diane M. Anderson, PhD, RD, CSP, FADA

**Optimal management of high-risk neonates** must include appropriate nutritional support to achieve the best physical growth and developmental outcome. To achieve this, a trained, multidisciplinary nutrition team is necessary. The Neonatology Section, Baylor College of Medicine, has established a national Neonatal Nutrition Training Center, which is supported in part by the Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau (Project



*Diane M. Anderson, PhD*

#7-T79MC00023-01). The goals of the Center are to improve the nutritional management of high-risk infants in the hospital and community settings and to prepare health care professionals to become leaders in maternal and child health nutrition. Three programs are offered at the Center.

**1. Annual Neonatal Nutrition Conference:** for physicians, dietitians, nurses, and other health care professionals working with high-risk infants. This program, held in March, provides state-of-the-art information on nutrition management of the premature infant including their specific nutrient requirements, optimal parenteral and enteral nutritional support with particular emphasis on the use of human milk, breastfeeding, and nutritional management related to disease.

**2. A one-week Neonatal Nutrition Update Practicum:** for dietitians/nutritionists employed in newborn care intensive care units (NICUs) or working in the community with infant gradu-

see Nutrition, page 4

## Breaking news

### *New construction at Texas Children’s Hospital Newborn Center*

by James M. Adams, Jr., MD

**Over the past 29 years**, the Texas Children’s Hospital NICU grew from a humble 4-bed unit to a 120-bed Newborn Center that is a regional ECMO center and a center for acute and chronic respiratory disease management. The growth was key to continually upgrading care and services to a fragile patient population.

The present 120-bed Newborn Center opened in 1991. It consists of 56 NICU beds and 38 Level 2 beds on the 4th floor of the new West Tower building and an additional 26 Level 2 beds on the 3rd floor of the Abercrombie building. All Level 2 beds were designed to meet NICU specifications, thus allowing for increased patient care flexibility.

However, these units reached capacity by the dawn of the new millennium and again there is need for new construction. Plans include both new construction and extensive remodeling in three phases.

- **Phase 1:** A new Level 2 nursery on the West Tower 4th floor that will subsequently replace the current Premature Nursery and Infant Care Unit.

see Construction, page 2

## Editor's Corner: From the laboratory

A message from

### Dr. Ralph D. Feigin

President, Baylor College of Medicine and  
Chairman, Department of Pediatrics

**Research** at Baylor College of Medicine is an integral part of the school's mission, which also includes education, health care and community outreach. While all are equally important, often research drives the rest. For example,



Ralph D. Feigin, MD

- Research in the U.S. Department of Agriculture/Agricultural Research Service Children's Nutrition Research Center at Baylor College of Medicine will enable tomorrow's pediatrician to give new mothers better advice on how and what to feed their children.
- Investigation in adolescent and sports medicine may help determine the right message to give young mothers about the importance of folic acid in preventing neural tube defects.
- Research in the area of neonatology at Baylor could help physicians prevent intracranial hemorrhage in very small neonates or protect the lungs of youngsters whose survival depends on use of ventilators in the first critical months of life.
- Research at the basic level will help identify the genes that cause often-devastating illnesses in youngsters, and the cellular mechanisms that leave some people prey to disease while protecting others.

Recently, Baylor ranked number one in the nation in research and development expenditures in the area of biological sciences—a designation that is a clear demonstration of its dedication to the goal of better medical treatment for all its patients. At Baylor, the gap between bench finding and bedside use is ever narrowing. Work ongoing in Baylor laboratories today will translate into better treatment for the next decade's premature infants and ultimately, healthier, longer lives for all youngsters, including those born too soon.



James M. Adams, Jr., MD

## Construction (continued from page 1)

- **Phase 2:** A parent support facility adjacent to the NICU on the 4th floor of the Abercrombie Building. This facility will be operated by the staff of The Ronald McDonald House and will include a kitchen, library, hospitality room, and 20 sleep rooms for parents.
- **Phase 3:** The current NICU and Infant Care Unit sites will be completely remodeled and converted into a new Level 3 unit.

The new nursery will provide family-centered care in a carefully controlled environment featuring extensive use of sound-deadening material and custom lighting control, enhancing the developmental care process already provided. Despite a 50-percent increase in bedside space, family privacy will be significantly enhanced. Each new nursery will feature completely redesigned headwalls, including a designated area for extended family visits with storage cabinets for parents' belongings. Family involvement with daily care will be integral in this bedside environment. Extensive use will be made of virtual workstations and digital communication tools. Additional conference rooms will be available for family meetings and educational activities. An updated physiologic monitor system will aid in optimal delivery of state-of-the-art, multidisciplinary care.

Project completion will be in about 18 months. Then the Newborn Center will provide 150 beds supported by a full range of diagnostic capabilities and all available medical and surgical subspecialties. Also, referral patients will have expanded access to the Texas Children's Neonatal Transport Team Kangaroo Crew® ground and air transport system.

## Spotlight (continued from page 1)

he now is an Associate Professor of Pediatrics and is Medical Director of International Neonatology at Texas Children's Hospital.

His international reach continues as a Regional Advisor in the Americas for the Pan-American Health Organization/World Health Organization (PAHO/WHO) Integrated Management of Childhood Illness (IMCI) strategy, and he coordinates the Guatemala elective rotation for Baylor pediatric residents and medical students.

For all he has done for his country and children of the world, the Guatemalan government gave Dr. Cabrera-Meza the Orden Dr Rodolfo Robles, the highest national award in the field of medicine and health care (April 1996) and the Orden del Quetzal en el Grado de Gran Cruz, equivalent to the U.S. Presidential Medal of Freedom (December 1999). Also, the Pediatric House Staff has honored him with the Outstanding Teaching Attending Award (May 1997), and the Department of Pediatrics gave him the Baylor Pediatric Award of Excellence in Teaching (August 1998).

Dr. Cabrera-Meza has been dedicated to teaching and patient care and continues to influence the lives of his students, peers, and patients worldwide.

## Research Highlights

### Events

**Joseph Garcia-Prats, MD**, received the Award of Distinction from the Texas Gulf Coast Chapter of the March of Dimes for his longstanding and outstanding contribution to that organization.

**Charleta Guillory, MD**, received the 2001 Mary Owen Greenwood Award from the Texas Gulf Coast Chapter of the March of Dimes.

**Karen Johnson, MD**, spoke before the American Women's Business Association in November on "The Business of Health Care."

**Donough O'Donovan, MD**, received the American Academy of Pediatrics (AAP) Young Investigators Award in October.

**Joseph Schneider, MD**, was elected Alternate Delegate to the Texas Medical Association from the Harris County Medical Society in October.

**Michael E. Speer, MD**, received the National Award for Individual Contribution to Maternal and Child Health at the National Perinatal Association annual meeting (Nov. 29–Dec. 1, 2001).

### Grants / Funding

**Couroucli, X.** Cytochrome P450 regulation by hyperoxia and nitric oxide; National Institutes of Health, \$598,825 (5-year grant).

**Karpen, H.** Role of caveolin-1 in regulation of

see Highlights, page 3



William Clark, MD

# Journal Review

Casey BM, McIntire DD, Leveno KJ. The continuing value of the Apgar score for the assessment of newborn infants. *New Engl J Med* 2001; 344(7): 467-471.

by William Clark, MD

**Introduction:** The 10-point Apgar score has been used worldwide to assess the condition and prognosis of infants for almost 50 years. The value of Apgar scores has been questioned because of attempts to use it as a predictor of neurologic development, for which it was never intended. Some investigators propose that pH measurement in umbilical-artery blood is a more objective method of assessing newborns. This study examined whether the original intent of the Apgar system, to predict survival during the neonatal period, remains pertinent.

This study examined whether the original intent of the Apgar system, to predict survival during the neonatal period, remains pertinent.

**Methods:** This was a retrospective cohort analysis of 151,891 live-born singleton infants without malformations who were delivered at  $\geq 26$  weeks' gestation at an inner-city hospital between January 1988 and December 1998. Paired Apgar scores and umbilical-artery blood pH values were available for 145,627 infants. The primary outcome measure was death in the first 28 days of life.

**Results:** Of the 13,399 preterm infants (26–36 weeks' gestation) with 5-minute Apgar scores of 0–3, the neonatal mortality rate was 315/1000 infants, compared to a rate of 5/1000 for preterm infants with 5-min. Apgar scores of 7–10. For 132,228 term infants ( $\geq 37$  weeks' gestation), the mortality rate was 244/1000 for infants with 5-min. Apgar scores of 0–3 compared with a mortality rate of 0.2/1000 infants with 5-min. Apgar scores of 7–10. The risk of neonatal death in term infants with 5-min. Apgar scores of 0–3 (relative risk, 1460; 95% CI, 835–2555) was 8 times the risk in term infants with umbilical-artery blood pH values  $< 7.0$  (relative risk 180; 95% CI, 97–334). The severity of umbilical-artery acidemia did not appreciably modify the relative risk of neonatal death associated with 5-min. Apgar scores of  $< 3$  in either preterm or term infants. But, a combination of 5-min. Apgar scores  $< 3$  and pH value  $< 7.0$  did increase the risk of neonatal death in both preterm and term infants. The relative risk of neonatal death in term infants with 5-min. Apgar scores  $< 3$  and umbilical-artery blood pH of  $< 7.0$  was 3204 (95% CI 1864–5508).

**Discussion:** This large study enrolled over 150,000 infants in 10 years. One study limitation is the few infants with a 5-min. Apgar score  $\leq 3$  (178 of the 145,627 study infants). However, study results suggest that a very low 5-min. Apgar score (0–3), although rare, remains strongly predictive of early neonatal death. Another study limitation is the 6264 infants from whom umbilical-artery blood gas values were not available. These infants had an incidence of neonatal death of 4.5/1000 compared with 1.2/1000 in infants for whom blood gas analysis was performed. Finally, possible differences in treatment of very immature infants might alter the predictive value for low Apgar scores in this cohort. For example, very immature infants with very low Apgar scores might have been treated less aggressively than infants of similar maturity with higher Apgar scores. This would potentially overestimate the value of very low Apgar scores as a predictor of neonatal mortality in this group.

In 1952, Apgar reported that neonatal survival through 28 days was related to the condition of the infant in the delivery room. This study results validate that the Apgar scoring system remains a good predictor of neonatal mortality.

## Highlights (continued from page 2)

the hedgehog signaling pathway; Child Health Research Center, New Development Award, National Institutes of Health, \$35,000.

**Moorthy, B.** Molecular mechanisms of atherogenesis by polycyclic aromatic hydrocarbons; \$7,500 (storm loss supplement).

**Ramsay, P.** Calcitonin gene-related peptide: Lung growth and repair; Child Health Research Center, New Development Award, National Institutes of Health, \$35,000.

## Publications

**Abrams SA, Griffin IJ, Davila P, Liang L.** Calcium fortification of breakfast cereal enhances calcium absorption in children without affecting iron absorption. *J Pediatr* 2001;139(4):522–526.

**Adams JM, Garcia-Prats JA, Schanler RJ, et al.** *Guidelines for the Acute Care of the Neonate*. 9th ed. Houston: Baylor College of Medicine; 2001.

## Contact Us

The Baylor College of Medicine Section of Neonatology has staff at four hospitals in Houston's Texas Medical Center and in the local community.

*To request a neonatal consultation at any of our locations, call 1-877-NEONATE (1-877-636-6283)*

### Texas Medical Center locations:

#### Texas Children's Hospital

6221 Fannin Street, Houston TX 77030  
Director of Nurseries: James M. Adams, MD

**For neonatal transport, call the Kangaroo Crew:**

In Houston: 832-824-5550  
Toll-free: 1-877-770-5550

#### St. Luke's Episcopal Hospital

6720 Bertner Avenue, Houston TX 77030  
Director of Nurseries: Michael E. Speer, MD

#### The Methodist Hospital

6565 Fannin Street, Houston TX 77030  
Director of Nurseries: Michael E. Speer, MD

#### Ben Taub General Hospital

1504 Taub Loop, Houston TX 77030  
Director of Nurseries: Joe Garcia-Prats, MD

### Community locations:

#### Bayou City Medical Center—South

6700 Bellaire Blvd, Houston TX 77074

#### Woman's Hospital of Texas

7600 Fannin Street, Houston TX 77056

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## Fellowship Opportunities Available

The Baylor College of Medicine Neonatal-Perinatal Medicine Fellowship Program accepts applications year-round.

### For information

- visit our website: [www.neonate.net](http://www.neonate.net)
- send email to: [fellowship-program@neo.bcm.tmc.edu](mailto:fellowship-program@neo.bcm.tmc.edu)
- write to Dr. Leonard Weisman at the address on page 4 of this newsletter.

Leonard E. Weisman, MD  
Professor of Pediatrics  
Head, Section of Neonatology

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**Nutrition** (continued from page 1)

ates from a NICU. This program is held 3 times during the fall and is limited to 4 participants per session to facilitate interaction. Topics discussed during the week, including reference texts and articles, relate to the nutrition support of premature infants and ill, term neonates.

**3. A three-month Neonatal Nutrition Fellowship:** for registered dietitians to develop expertise in nutritional management of infants in the NICU and post discharge. Fellowships begin in January and April each year and are limited to 2 participants per session. Fellows may be employed in a NICU or be seeking employment to work with high-risk neonates. The fellowship provides a basic block of nutrition information of neonatal nutrition principles and clinical applications. The program consists of assigned readings with discussions and completion of case studies, special projects, and in-service education presentations. Clinical work is performed in the hospital, clinic,

and home settings. Fellowship graduates have obtained employment as neonatal nutritionists, pediatric nutritionists, pediatric nutrition researchers, faculty members, and public health nutritionists.

All programs are evaluated by participants, and that aids in planning future sessions. One positive attribute of the programs that is always noted is networking with others from across the nation. For the new neonatal nutritionist, these training opportunities provide a foundation of knowledge and skills to effectively administer nutrition care and the development of self-efficacy.

**Coming in April 2002 —**

- 11th Annual Texas Children's Hospital International Colloquium, April 22–24, 2002. For information, contact: Valdemar Garza 832-824-2574
- 24th Annual Baylor College of Medicine Pediatric Postgraduate Symposium, April 25–27, 2002. For information, contact the Baylor College of Medicine, Office of Continuing Medical Education 713-798-8237

**Neonatal Nutrition Fellowship Opportunities**

The Baylor College of Medicine Neonatal Nutrition Fellowship Program (for Registered Dietitians with clinical experience) accepts applications year-round for two training periods (January–March and April–June).

**For additional information contact Diane Anderson, PhD, RD**

- email: [dianea@bcm.tmc.edu](mailto:dianea@bcm.tmc.edu)
- telephone: 832-824-1346
- mail: to the address at the top of this page

Supported in part by the Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau (Project #7-T79MC0023-01)

**Neonatal Nutrition Symposium**

Addressing nutritional management issues of the  
low birth weight and/or premature infant.

**March 3-6, 2002**

**Sheraton Suites Houston**  
2400 West Loop South • Houston, Texas

**For information, contact**

Myrthala Guzman or Diane Anderson PhD, RD  
telephone 832-824-1360 • facsimile 832-825-2799  
[dianea@bcm.tmc.edu](mailto:dianea@bcm.tmc.edu)

[www.neonate.net](http://www.neonate.net) (Click: Neonatal Nutrition Symposium)

This conference qualifies for 18 hours in category 1 credit toward the  
AMA Physician's Recognition Award.

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