

**DIVISION OF NEONATOLOGY  
DEPARTMENT OF PEDIATRICS & HUMAN DEVELOPMENT MICHIGAN STATE  
UNIVERSITY COLLEGE OF HUMAN MEDICINE**

**Description of Fellowship Program--2008**

**Introduction**

The Division of Neonatology at Michigan State University College of Human Medicine is a major regional academic center for clinical and research training. The MSU Neonatology Training Program is a fully accredited 3-year fellowship, with 13 months dedicated to NICU clinical experience and the remainder to research opportunities, electives, and follow-up clinic. Clinical training is offered in the Neonatal Intensive Care Unit and the Developmental Assessment Clinic at Sparrow Hospital. The State of Michigan has a regional referral system for the transport and care of high-risk mothers and sick newborn infants. Sparrow Hospital is the State-designated center for Mid-Michigan.

Many opportunities in both clinical and basic research are available for our fellows. The Program is designed to give more time for research in the 2<sup>nd</sup> and 3<sup>rd</sup> years of fellowship. The Fellowship Program has positions for 1-2 fellows per year, for a total of 4 fellows; it is anticipated that an expansion of the Program to 5 fellows will occur in the not distant future. There are currently 5 full-time Neonatologists in the Division; a 6<sup>th</sup> is being actively recruited.

Research facilities are located on the campus of Michigan State University (MSU), a Big-Ten University with an enrollment of 42,000 students and home to the College of Human Medicine and the College of Osteopathic Medicine. The MSU campus is only 1.5 miles from Sparrow Hospital. The research efforts of the Division of Neonatology involve close collaboration with the Departments of Epidemiology, Physiology, Microbiology, and Veterinary Medicine on the MSU campus.

**Faculty**

**Modupe T. Awonuga, M.D., MPH, MRCP (UK), MRCPCH, FAAP**

Assistant Professor  
M.D. University of Lagos, Nigeria  
Residency: Lincoln Medical and Mental Health Center, The Bronx, New York  
Fellowship: Medical College of Georgia

Research: Fetal and Neonatal Endocrinology; nutrition and growth; neonatal resuscitation program; medical education

**Ira H. Gewolb, M.D.**

Professor & Division Chief  
Director, Fellowship Training Program  
Associate Chair for Research, Department of Pediatrics  
M.D.: Yale University  
Residency: Harvard University, The Children's Hospital, Boston  
Fellowship: Yale University

Research: Development of rhythmic suckle feeding; gastro-esophageal reflux; cervical accelerometry; influences of probiotics and the fecal bacterial micro-environment on necrotizing enterocolitis; surfactant physiology; multi-center trials; international collaboration.

**Mark Kadrofske, M.D., Ph.D.**

Assistant Professor  
M.D. Michigan State University College of Human Medicine  
Ph.D. Michigan State University Department of Biochemistry  
Residency: Case Western Reserve University Children's Hospital  
Fellowship: Case Western Reserve University, Children's Hospital  
  
Research: Mechanisms of neonatal gastrointestinal injury; neonatal nutrition.

**Padmani Karna, M.D.**

Professor  
M.D.: R.N.T. Medical School, Udaipur, India  
Residency: Wayne State University, Children's Hospital of Michigan  
Fellowship: Wayne State University, Children's Hospital of Michigan  
  
Research: High frequency ventilation and pulmonary function testing; brain injury in preterm infants; multicenter trials; collaborative QI in NICUs.

**Burra V. Madhukar, Ph.D. (divisional affiliate)**

Associate Professor  
Ph.D.: University of Delhi, New Delhi, India  
  
Research: Biochemical and molecular toxicology of environmental carcinogens; anti-cancer drug development for targeted therapy.

**Nicholas Olomu, M.D.**

Assistant Professor  
Associate Director, Fellowship Training Program  
M.D.: University of Ibadan, Nigeria  
Residency: University of Benin Teaching Hospital  
Michigan State University  
Fellowship: Stanford University  
  
Research: Salivary cortisol and stress in neonates; perinatal brain injury; ventriculomegaly and long-term outcome

**Said A. Omar, M.D.**

Associate Professor  
M.D.: Ain Shams University, Cairo, Egypt  
Residency: State University of New York at Stony Brook  
Fellowship: State University of New York at Stony Brook  
  
Research: Development of the neonatal hematopoietic immune system; fluid and electrolyte management of VLBW infants; oxygen exposure and long-term hematologic outcomes; neonatal fecal microbial flora; prostacyclin and pulmonary hypertension.

**Nigel Paneth, M.D., M.P.H. (divisional affiliate)**

Professor (of Epidemiology and Pediatrics)  
Associate Dean of Research, College of Human Medicine  
Chairman Emeritus, Department of Epidemiology

M.D.: Harvard Medical School

M.P.H. Columbia University School of Public Health

Research: Causes and prevention of neurodevelopmental handicap; neonatal cerebral hemorrhage; neonatal thyroid status; public policy implications of different ways of managing infants born at the limits of viability; perinatal epidemiology training.

**The Neonatal Fellows**

3<sup>rd</sup> year: **Abdellatif Abdelwahab, M.D. (7/1/05-6/30/08)**

Residency: St. Joseph's Medical Center, New Jersey

2<sup>nd</sup> year: **Vadim Ivanov, M.D. (12/1/06-11/30/09)**

Residency: St. Joseph's Medical Center, New Jersey

1<sup>st</sup> year: **Ayo Ajibola, M.D. (7/1/07-6/30/10)**

Residency: Michigan State University

Incoming: **Pramod Mallipalli, M.D. (7/1/08-6/30/11)**

Residency: Michigan State University-Kalamazoo Program

Incoming: **Babatunde Sobowale, M.D. (7/1/08-6/30/11)**

Residency: New York Methodist Hospital

**Clinical Experience**

**Sparrow Hospital**

1. **Neonatal Intensive Care Unit:** The Sparrow Hospital Neonatal Intensive Care Unit, a 35-bed unit, admits 500-600 sick neonates each year. Approximately 80% of these admissions are from the Sparrow Hospital facility with its 4000 annual deliveries. The remaining 20% are transported from our referral centers around the state of Michigan. A full range of state-of-the-art ventilatory modalities is available in the NICU, including nitric oxide therapy, high frequency ventilation, etc. Pediatric Residents, NNPs, and Physician Assistants are fully integrated into the daily routine in the NICU.

2. **Developmental Assessment Clinic (DAC):** The DAC is a weekly clinic organized to provide coordinated follow-up assessment and care for infants discharged from the NICU and considered to be at risk for residual handicap or developmental delay. Infants are followed for up to 3 years post-NICU discharge. In depth assessment is provided by neonatologists, neonatal fellows, nurse coordinators, psychologists, occupational and physical therapists, and audiologists. Approximately 15 infants are seen each week.

3. **Sparrow Regional Neonatal Transport Program:** A highly trained Neonatal Transport Nurse team, with support from Respiratory Therapists and EMTs, staffs the Sparrow-MSU Neonatal Transport Program, which serves the entire Mid-Michigan region. For critically ill infants, or those with complex or multiple system disorders the neonatal fellow (or Neonatal Nurse Practitioner) accompanies the primary team.

4. **Computerized Neonatal Database:** A computerized medical record system (Medical Data Systems) is in use in the NICU and the DAC. In addition, the MSU Program is part of the Vermont-Oxford Network. Access to archived data is available for fellows for research and/or quality improvement projects. Each fellow is expected to utilize the database as a resource to complete a review of a pertinent clinical issue.

### **Research Experience**

An expanding list of both basic and clinical research opportunities is available to our Fellows. Major clinical research interests of the current neonatology faculty include the physiology of suck-swallow-breath coordination during infant feeding, cervical accelerometry, gastroesophageal reflux, feeding and oxygen desaturation, predictors of brain injury and long-term neurodevelopmental disability, fluid and electrolyte issues, and necrotizing enterocolitis. In the basic sciences, research of divisional members includes the microbial ecology of the neonatal intestine, probiotic therapy, in vitro mechanisms of neonatal gastrointestinal injury, hyperoxia and long-term hematopoietic injury, and mechanisms of apoptosis in neonatal lung. Members of the Division have been involved in recent multicenter clinical trials, including the ELGAN (brain injury & biomarkers) Study, the ICE trial (hypothermia and neuroprotection), Surfaxin in the prevention of BPD, the Inhibitex Trial (prevention of staphylococcal disease), and ongoing Vermont-Oxford sponsored Quality Improvement trials. There is also ongoing international collaboration with NICUs in Russia and China, and collaborative research with sites in India.

Both basic and clinical research opportunities are available with members of other Divisions and Departments at MSU, including the Departments of Epidemiology, Physiology, Microbiology, and Pharmacology.

We are most proud that our current 1<sup>st</sup> year fellow, Ayo Ajibola, M.D., has been awarded a National Pediatric Scientist Development Program Grant to study the genetics of congenital cerebellar hypoplasia..

As the Sub-board of Neonatal-Perinatal Medicine has modified requirements and increased the emphasis on research achievement, our program has expanded the research experience for our fellows.

In the first year each fellow is asked to review the literature on a research topic, and, with faculty mentorship, develop protocols or research plans which will occupy the fellow for the remainder of his/her fellowship. Fellows are expected to be intimately involved in the design of the project, the writing of protocols, the day-to-day running of the project, analysis of data, and preparation of a formal seminar, as well as submission of results for publication and presentation at regional and national meetings. Intramural and extramural sources of funding are available to our fellows.

Consolidated blocks of time for completion of the research projects are allocated in the second and third years.

Our current fellows are involved in basic research on mechanisms of chronic apoptotic injury in neonatal lung, effects of meconium on neonatal lung tissue, and genetics of cerebellar hypoplasia.

### **Preceptorship and Evaluations**

Each fellow has a faculty member as a preceptor who meets with the fellow on a regular basis to provide on-going evaluation of performance and help with clinical and research efforts, in addition to a Scientific Mentorship group that provides ongoing critiques of the work in progress.

At the end of each clinical rotation, evaluations are completed by the NICU attending and then discussed with the fellow by his preceptor. In addition, each fellow meets 2-3 times a year with the Division Chief to review progress in all areas.

**Electives**

Fellows have a number of elective/selective options during the fellowship. In the second or third year, all fellows are required to do a month of Pediatric Cardiology/Cardiac Surgery/ECMO at University of Michigan in Ann Arbor. Options at MSU include high-risk obstetrics, genetics, other pediatric subspecialties and epidemiology.

**Formal Teaching Conferences**

Weekly:

- 1) Neonatology/Perinatology Liaison Conference
- 2) Pediatric Grand Rounds
- 3) Neonatal Physiology Seminar: Formal lectures and seminars weekly throughout the three-year program.
- 4) Faculty/Fellow Meetings: Journal Clubs, Quality Assurance reviews, State-of-the-Art talks, Protocol Reviews (in rotation).

Monthly:

- 1) Neonatology Research Seminars: speakers from the Division, Department, and outside the University presenting recent research findings. Fellows present “research updates” once or twice a year.
- 2) Neonatal Morbidity/Mortality Conference

Annual:

- 1) Statistics and Research Design Course
- 2) Introduction to Epidemiology

**On-Call Schedule**

Every fifth night in-house call in the Sparrow NICU, with an attending on call as back-up.

**Approximate Allocation of Time**

	Year 1	Year 2	Year 3
A. Clinical service months			
1. Fellow Role-	5	4	3
2. “Fellow-Attending” Role			1

B. Research/Elective months	6	7	7
C. Vacation	3 wk	3 wk	3 wk

**University Fringe Benefits**

- a. Health care coverage for individual; group rates for family
- b. Malpractice coverage
- c. Vacation (4 weeks per year plus holidays)
- d. Workmen's Compensation
- e. Social Security
- f. Parking

**Divisional Benefits**

- a. Education stipend toward expenses for attending research meetings
- a. Research "seed" money to facilitate research efforts
- b. Secretarial assistance
- d. Desk and filing space in the Division
- e. Purchase and laundry of lab coats
- f. Computer availability in Fellow office and in laboratories
- g. On-line medical literature search capability in Fellow office

**Application Process**

The Neonatology Fellowship Program at MSU currently admits one Fellow per year, although plans to increase to the total Fellow complement to 4-5 from the current 3 are underway. Positions begin in July and continue for 3 years, although in some cases exceptions can be made. Interviews for July 2005 positions began in March 2004.

Applicants should have completed an approved residency program in pediatrics in the U.S. and should be Board eligible/certified by the American Board of Pediatrics.

Interested individuals can send a letter requesting an application packet to:

Ira H. Gewolb, M.D.  
 Professor & Chief, Division of Neonatology  
 Michigan State University  
 Sparrow Hospital Neonatology  
 1215 East Michigan Avenue  
 P.O. Box 30480  
 Lansing, MI 48909

OR

Isoken Olomu, M.D.  
 Associate Program Director, Fellowship Training Program  
 Division of Neonatology

Michigan State University  
Sparrow Hospital Neonatology  
1215 East Michigan Avenue  
P.O. Box 30480  
Lansing, MI 48909

Alternatively, an application packet can be requested via e-mail. Send requests to either:

[gewolb@msu.edu](mailto:gewolb@msu.edu) or [agnes.milashus@sparrow.org](mailto:agnes.milashus@sparrow.org)

Application forms can also be obtained through the MSU Neonatology Web Site:

[www.msu.edu/user/phd/navigation/neo\\_fellowship.htm](http://www.msu.edu/user/phd/navigation/neo_fellowship.htm)

Applications should include:

1. A cover letter
2. Current curriculum vitae
3. 2-4 letters of recommendation
4. Certified copy of medical school diploma
5. USMLE certificate and score
6. Visa status (if non-U.S. citizen)
7. Certified copy of ECFMG certificate & scores (if applicable)