



An ER Physician Reflects on a Scientific Career

In her keynote address at the Minnesota Academy of Science's Annual Meeting, Dr. Michelle Biros dug up the predictions she and her colleagues made in 1974 about the future of emergency medicine. Thirty-five years later Dr. Biros is an attending emergency physician at Hennepin County Medical Center (HCMC), Professor of Emergency Medicine at the U of M and HCMC, Associate Research Director of Emergency Medicine at HCMC, and Vice Chair of Research for Emergency Medicine at the U of M. Her primary research interests are neurological emergencies, biomedical ethics, and psychosocial aspects of emergency care.

Dr. Biros is also very interested in the teaching of research concepts and principles. Besides developing a lecture series on the "Fundamentals of Research," she lectures routinely on the art of scientific writing. She has served as editor-in-chief for the journal, *Academic Emergency Medicine*. In 1994, she founded and co-chaired the Coalition of Acute Resuscitation Researchers assisting the FDA in redesigning the regulations that govern human subjects research in the US.

Dr. Biros' predictions for changes she would see during her career included: the work week reduced to 20 hours; the United States becoming totally green; and computers dominating the work place, schools and home.

As it turns out, it wasn't all wishful thinking. While not everything she predicted in 1974 came true, Dr. Biros has seen many changes in emergency medicine over the years which she shared during her keynote address.

Among those she cited were social changes that have had a major impact on her work. The leading cause of trauma death in children under the age of one year? Intentionally inflicted trauma resulting from the

increasing violence in our society. The demographics of her patient population have changed — one-third of her patients do not speak English at home. The impact of the developing world can be seen in her Emergency Department; she is treating cases of diseases she never thought she would encounter in her career — Avian Flu, drug resistant Tuberculosis and Dengue Fever. She has also seen the failure of primary care. Insurance companies have become the gatekeepers of medical care forcing many uninsured patients to seek treatment in an emergency room thus creating significant overcrowding in emergency departments.

Specific case management is different in the 21st century. Procedures have changed in the immediate response and treatment of patients brought in suffering from such problems as stroke, myocardial infarction and trauma. In 2005, the MN Legislature approved and funded a state trauma system. Trauma centers make it possible for the effective management of disaster cases such as the successful treatment of 25 critical patients brought into the HCMC Emergency Department within two hours of the collapse of the 35W bridge last August.

A patient with a heart attack can now be transported from Grand Rapids to a Minneapolis hospital and be in a catheterization lab within 120 minutes using medical helicopters situated throughout the state. Ultrasound equipment is common at bedside during the ED assessment, allowing quicker, more accurate initial diagnoses thus decreasing the average time to operating room and increasing patient survival rates considerably.

By Celia Waldock, Executive Director



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The Academy thanks Dr. Biros for sharing photographs from her presentation taken by emergency personnel during the 35W Bridge collapse. The picture on page 1 is also hers.