



Thursday, April 15, 2004

Michael Chopp

Distinguished Professor of Physics, CAS

Michael Chopp is one of the world's most prominent specialists in medical physics and neuroscience. Since joining the Physics Department at Oakland University in 1976, he has produced more than 300 research publications that have been cited thousands of times in professional literature. His work has been supported by grant funding amounting to more than \$20 million and has resulted in significant contributions in the areas of magnetic resonance imaging, the physics of stroke, neurological disease and injury, treatment of brain tumor, and brain repair and remodeling.

Chopp pursues his research in specially equipped labs in the Neurology Department of Henry Ford Hospital, making possible a partnership that opens important opportunities for Oakland University doctoral students in medical physics. He has directed 10 doctoral dissertations in medical physics, with more in progress.

The basic and applied research carried on by Chopp and his students includes a number of important "firsts." He pioneered the concept of brain remodeling through the development of therapies to enhance and restore neurological function after injury, stroke or disease. This work received major recognition throughout the world and was recognized by the American Heart Association as one of the top 10 medical advances of 2001.

Other "firsts" include developing methods for making cell therapy visible using magnetic resonance imaging; identifying molecular triggers and associated pharmacological agents to induce brain plasticity; discovering that delayed treatment of neural injury by trophic factors provides therapeutic benefit; developing therapies to enhance the function of thrombolytic agents to open clots after stroke; providing fundamental biophysical insight into why thrombolytic therapy has a three-hour therapeutic window; developing many aspects of magnetic resonance technology now commonly in use worldwide; identifying and measuring the role of nitric oxide in brain injury; demonstrating novel mechanisms of cell death, including suicide processes after stroke and brain injury; and discovering the profound effects of brain temperature on stroke and neural injury, spawning a worldwide research effort.

More than 160 of Chopp's publications include Oakland University medical physics students as coauthors, attesting to his energetic devotion to teaching and nurturing students' development in research at the graduate level.

SUMMARY

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Created by CareTech Administrator (webservices@caretechsolutions.com) on Thursday, April 15, 2004
Modified by CareTech Administrator (webservices@caretechsolutions.com) on Thursday, April 15, 2004
Article Start Date: Friday, April 9, 2004