

**SZTE SZAOK**  
**(Institute of Surgical Research)**

**TDK topics (2025/2026):**

Supervisor(s)	Topics
Prof. Dr. Mihály Boros, MD, PhD, D.Sc., professor; Dr. habil. Gabriella Varga, PhD, associate professor, Dr. habil. Dániel Érces, MD, PhD, associate professor	Protective effects of biological gases in circulatory disorders.
Prof. Dr. Mihály Boros, MD, PhD, D.Sc., professor; Dr. Szabolcs Péter Tallósy, PhD, assistant professor	Acting mechanism and interplay of biologically active gases in sterile inflammation and <i>in vitro</i> systems.
Dr. László Juhász, PhD, research fellow, Dr. Attila Rutai, PhD., assistant lecturer	Therapeutic possibilities of the microcirculatory and mitochondrial dysfunction in septic condition.
Dr. Marietta Zita Poles, PhD, research fellow	The effects of methane in sepsis-associated cerebral mitochondrial dysfunction and blood–brain barrier disruption
Dr. László Juhász, PhD, research fellow	Assessment of mitochondrial function in local and systemic inflammatory diseases.
Dr. habil. Andrea Szabó, MD, PhD, associate professor, head of department; Dr. Marietta Zita Poles, PhD, research fellow	Assessment and modulation of the biochemical and microcirculatory consequences of urogenital diseases.
Dr. habil. Andrea Szabó, MD, PhD, associate professor, head of department; Dr. Marietta Zita Poles, PhD, research fellow	Assessment and modulation of the injury of endothelial glycocalyx caused by circulatory disorders.
Prof. Dr. Mihály Boros, MD, PhD, D.Sc., professor; Dr. Szabolcs Péter Tallósy, PhD, assistant professor	Non-bacterial methane production: molecular mechanism and significance in clinical diagnostics.
Dr. habil. Gabriella Varga, PhD, associate professor, Dr. habil. Dániel Érces, MD, PhD, associate professor	Non-invasive investigation of the lung and gastrointestinal microcirculation.
Dr. habil. Gabriella Varga, PhD, associate professor, Dr. habil. Dániel Érces, MD, PhD, associate professor	Investigation of the effects of organ preservation in a large animal model of kidney transplantation.

Dr. Szabolcs Péter Tallósy, PhD, assistant professor, Dr. Attila Rutai, PhD., assistant lecturer	Formation of neutrophil extracellular traps and therapeutic influence in circulatory failure.
Dr. habil. Andrea Szabó, MD, PhD, associate professor, head of department; Dr. Marietta Zita Poles, PhD, research fellow	State-of-the-art assessment methods for quantification of surgical skills.
Dr. László Juhász, PhD, research fellow	Alterations of brain mitochondrial function upon genetic and pharmacological inhibition of tryptophan metabolism.