

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Barry W. Festoff, M.D.	POSITION TITLE Professor		
eRA COMMONS USER NAME BFESTOFF			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Florida, Gainesville, FL	BA	1962	Political Science
Univ. of Miami School of Medicine, Miami, FL	MD	1966	Medicine
Duke University Medical Center, Durham, NC		1966-1967	(Intern) Medicine
Duke University Medical Center, Durham, NC		1967-1969	Postdoctoral Fellow

A. Positions and Honors .

Positions and Employment

1969-71: Resident, Neurology, University of Miami-Jackson Memorial Hospital, Miami, FL

1971-73: Clinical Associate, Medical Neurology Branch, NINDS, NIH, Bethesda, MD

1973-76: Associate Investigator, Medical Neurology Branch, NINDS, NIH, Bethesda, MD

1976-: Associate Professor, Professor (**1980**) and Vice-Chair, Dept of Neurology, University of Kansas Medical Center, Kansas City, KS (KUMC)

1976-85: Chief, Neurology Service, VA Medical Center, Kansas City, MO (KCVAMC)

1976-: Director, Neurobiology Research Laboratory, KCVAMC

1985-92: Medical Investigator, National VA Career Development Award, KCVAMC

1992-: Staff Neurologist, KCVAMC

1998-: Prof, Dept of Pharmacology, Toxicology & Therapeutics, KUMC

Professional Memberships

Society for Neuroscience; American Academy of Neurology, Active Member (1975), Fellow (1982); American Neurological Association (1980); Federation of American Scientists; American Association for Advancement of Science; American Society for Neurochemistry (Publ./Education Comm. 1989-91); International Society for Neurochemistry; Sigma Xi (Charter member, UKMC); American Federation of Clinical Research; American Society of Biological Chemists (1980); Medical Society of London; American Association of University Professors; American Society for Clinical Investigation ("Young Turks", 1984; Emeritus); Neurotrauma Society; International Society of Developmental Neuroscience; American Society for Neurorehabilitation (Charter certificate); *Professeur de l'Académie des Sciences Française*; Molecular Medicine Society

Honors (1994-2005): **1994-2000:** *Chaire et Professeur de l'Académie des Sciences Française* (Elf Aquitaine funded); *Chercheur Associé*, CNRS and INSERM, U 153, Paris, FR; Ed Board, Synapse; Chair, Extravascular Effects of Thrombin, FASEB Summer Res Conf, Copper Mountain, CO; Chair, Neurobiol and Beyond, FASEB Summer Res Conf, Thrombin and Vascular Med, Saxton's River, VT; Symp Speaker, Proteases and the Nervous System, Amer Soc of Neurochem, Denver; *Chercheur Associé, Poste Vert*, ERS 5644 du CNRS, *Université de Montpellier II*; Elected, Hall of Fame, Univ of Miami Med School; Invited speaker, Fondation Ipsen, Symp on Protein Aggregation in Neurodegeneration, Paris, FR; Organizer and invited speaker, Congress on Neuroprotection and Neurorepair, Magdeburg, Germany; Invited speaker, Transglutaminases and Neurodegeneration, Amer Soc Neurochem.; Faculty Sr. Res Award, KUMC. 2002: Session Chair, Invited Speaker, PARs in Neurodegeneration, Pain and Neurotrauma, Amer Soc for Neurochem; Invited Speaker, 7th Intl Mtg of Transglutaminase and Protein Cross-linking Reactions, Ferrara, Italy; Invited Speaker, INSERM Unit 289, *Hôpital de la Salpêtrière*, Paris, France. **2003:** Invited speaker, Thrombin/PAR signaling in neurons and glial cells and proinflammatory responses to CNS injury, Euroglia 2003: VI Euro Meeting on Glial Cell Function in Health and Disease, Berlin, Germany. **2004:** Scientific Advisory Comm, Western ALS; Amer Soc Neurorehab Program Comm.; Visiting Professor, Neuropathology, Columbia P&S, NYC; Visiting Prof. Neurotrauma, Oxford Univ., Oxford, UK. **2005:** Visiting Prof. Neurorehab, U KY, Lexington, KY; Visiting Prof. Neurorehab., UTMB, Galveston, TX; Visiting Prof. The Miami Project, Univ. of Miami, FL.

B. Selected peer-reviewed publications (last 5 years in chronological order of 150)

- Citron, B.A., Arnold, P.M., Sebastian, C., Qin, F., Malladi, S., Ameenuddin, S., Landis, M., Festoff, B.W.: Rapid upregulation of caspase-3 in rat spinal cord injury: mRNA, protein and cellular localization correlates with apoptotic cell death. *Exp. Neurol.* 166:213-26, 2000.
- Citron, B.A., Smirnova, I.V., Arnold, P.M., Festoff, B.W.: Upregulation of neurotoxic serine proteases, prothrombin and protease-activated receptor 1 early after spinal cord injury. *J Neurotrauma* 12: 1191-203, 2000.
- Citron, B. A., SantaCruz, K.S., Davies, P.J., A. Festoff, B.W.: Intron-exon swapping of tissue transglutaminase splice variants in Alzheimer's disease brains. *J. Biol. Chem.* 276: 3295-3301, 2001.
- Smirnova, I.V., Citron, B.A., Arnold, P.M., Festoff, B.W.: Neuroprotective signal transduction in motor neurons exposed to thrombin: G-protein modulation effects on neurite retraction, cell rounding and apoptosis. *J. Neurobiology* 48:87-100, 2001.
- Festoff, B.W., Suo, Z., Citron, B.A.: Plasticity and stabilization of neuromuscular and CNS synapses: Interactions between thrombin protease signaling pathways and tissue transglutaminase. *Intl. Rev. Cytol.* 211:153-77, 2001.
- Citron, B.A., Suo, Z., SantaCruz, K., Davies, P.J.A., Qin, F., Festoff, B.W.: Protein crosslinking, tissue transglutaminase, alternative splicing and neurodegeneration. *Neurochem. International.* 40:69-78, 2002.
- Suo, Z., Wu, M., Ameenuddin, S., Anderson, H., Zoloty, J.E, Citron, B.A., Andrade-Gordon, P., Festoff, B.W. Participation of protease-activated receptor 1 in thrombin-induced microglial activation. *J. Neurochem.* 80:655-66, 2002.
- Festoff, B.W., SantaCruz, K., Arnold, P.M., Sebastian, C.T., Davies, P.J.A., Citron, B.A.: Injury-induced 'switch' from GTP-regulated to novel GTP-independent isoforms of tissue transglutaminase in the rat spinal cord. *J. Neurochem.* 81:708-18, 2002.
- Citron B.A, Arnold, P.M., Ameenuddin, S., Festoff, B.W.: Spinal cord injury and neuronal cell death: apoptosis and implications for future treatment. *Sem. in Spine Surgery* 14:182-192, 2002.
- Suo, Z., Wu, M., Citron, B.A., Festoff, B.W.: Persistent protease-activated receptor 4 signaling mediates thrombin-induced microglial activation. *J. Biol. Chem.* 278:1177-83, 2003.
- Suo, Z., Wu, M., H., Zoloty, J. E., Citron, B. A., Palazzo, R.E., Festoff, B. W.: Rapid induction of neurofibrillary tangle formation in HT22 hippocampal neurons by thrombin activation of protease-activated receptors. *J. Biol. Chem.* 278:37681-9, 2003.
- Festoff, B.W.: Proteinase-activated receptors in the nervous system: Roles in neuroplasticity and neurotrauma. *Drug Dev Res* 60:58-64, 2003.
- Suo, Z., Wu, M., Citron, B. A., Wong, G. T. Wong, Festoff, B. W.: Abnormality of G-protein-coupled receptor kinases at prodromal and early stages of Alzheimer's disease: an association with early β -amyloid accumulation. *J Neurosci*, 24:3444-52, 2004.
- Suo, Z., Citron, B.A., Festoff, B.W.: Thrombin: A potential proinflammatory mediator in neurotrauma and neurodegenerative disorders. *Current Drug Targets: Inflammation & Allergy* 3:103-112, 2004.
- Festoff, B. W., Ameenuddin, S., SantaCruz, K.S., Morser, J., Citron, B. A., Arnold, P. M.: Neuroprotective effects of recombinant thrombomodulin in controlled contusion spinal cord injury implicates thrombin signaling. *J. Neurotrauma*, 21:907-22, 2004.
- Citron, B.A., Zoloty, J., Suo, Z., Festoff, B.W.: Tissue transglutaminase during mouse central nervous system development; Lack of alternative RNA processing and implications for its role(s) in murine models of neurotrauma and neurodegeneration. *Molec. Brain Res.* 135: 122-33, 2005.
- Bilgen, M., Al-Hafez, B., Farooque, M., Festoff, B.W.: Magnetic resonance angiography of mouse spinal cord. *Magnetic Res. in Medicine* 54:1226-31, 2005.
- Farooque, M., Suo, Z., Arnold, P.M., Wulser, M.J., Chou, C-T., Vancura, R.W., Fowler, S., Festoff, B.W: Gender related differences in recovery of locomotor function after spinal cord injury in mice. *Spinal Cord* 44:182-7, 2006.
- Festoff, B.W., Farooque, M., Ameenuddin, S., Arnold, P.A., Wong, A., SantaCruz, K. S. and Citron, B.A.: Minocycline neuroprotects, reduces microgliosis, and inhibits caspase protease expression early after spinal cord injury. *J. Neurochem.* 97:1314-26, 2006.

C. Research Support

Ongoing Research Support

Festoff, Barry W. (PI) 04/01/03 – 03/31/08

Department of Veterans Affairs/VA Merit Review

“Injury, neuronal hypoxia and thrombin signaling: Adaptation or death?”

The *long-term goal* of this ongoing project is to influence the proteinase: inhibitor balance regulation in the CNS after trauma and in degenerative conditions by defining components that shift the balance from plasticity to neuronal death.

Suo, Zhiming (PI) 10/01/02 – 09/30/06

Festoff, Barry W. (Co-I)

Department of Veterans Affairs/VA Merit Review

“Soluble Beta Amyloid Induced Microglial Hyper Reactivity: Role of GRKs”

This project will investigate molecular mechanisms underlying sA β -induced microglial hyper-reactivity with particular focus on determining roles of GRKs.

Festoff, Barry W. (PI) 06/01/06 – 05/30/08

Bryon Riesch Paralysis Foundation:

“Novel therapeutic approaches to SCI: siRNA and thrombin Signaling” -07/01/06-06/30/08

Our work and that of others indicates that thrombin is a concentrated and early arriving modulator of neural function in the injured CNS. Its effects are manifested on all neural cells as well as on invading inflammatory cells (neutrophils, monocytes) are mediated via one or more PAR receptors. Our goal is to determine which are critical in blocking or promoting endogenous recovery and repair establishing the preclinical conditions for using the specific RNAi translational therapeutic trials by administering shRNA for individual PARs.

Festoff, Barry W. (PI) 07/01/06 – 06/31/08

Wings for Life Spinal Cord Research Foundation 2005-2006 Individual Research Grant Application.

“SCI translational treatment with siRNA for proteinase-activated receptors”

What this proposal is designed to provide is essential information determining which, if any, of the thrombin-responsive PARs specifically impacts recovery after traumatic SCI. We propose to accomplish this by administering novel small interfering RNA (siRNA) molecules intrathecally into cerebrospinal fluid (CSF) in rats and to monitor their recovery using quantitative behavioral estimates. We will confirm these behavioral effects with terminal histology.

Completed Research Support

Citron, Bruce A. (PI) 09/01/02 – 08/31/05

Festoff, Barry W. (Co-I)

The Alzheimer’s Association

“Regulation of transglutaminase expression and its substrates in AD neurodegeneration”

This project will seek to better understand the neurodegenerative mechanisms associated with tTG.

Festoff, Barry W. (PI) 01/15/03 – 01/14/05

Christopher Reeve Paralysis Foundation

“Functional recovery by minocycline and its mechanism in acute spinal cord injury”

Our goal is to develop effective treatment to limit the nerve cell destruction and minimize permanent damage to promote greatest recovery following SCI.

Citron, Bruce A. (PI) 10/01/01 – 09/30/04

Festoff, Barry W. (Co-I)

Department of Veterans Affairs/VA Merit Review

“Early Gene Triggers of Neurodegeneration”

The major goals of this project are to investigate serine proteases and related genes in a mouse model of motor neuron degeneration.