

Frances Rena Bahjat, Ph.D.

Curriculum Vitae

Department of Molecular Microbiology and Immunology, L220
Oregon Health & Science University
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Education

- 2002 – 2004 Post-doctoral fellowship at Nereus Pharmaceuticals, Inc., San Diego, CA
- 1998 – 2002 Doctorate in Biomedical Sciences from University of Florida College of Medicine
Departments of Surgery and Pathology, Immunology, and Laboratory Medicine
Gainesville, FL
- 1993 – 1997 Bachelors of Science in Biology, Magna Cum Laude from Benedictine University,
Lisle, IL

Research and Professional Experience

- 2009 – Present Research Assistant Professor, Department of Molecular Microbiology & Immunology
Oregon Health & Science University, Portland, OR
Research focus: Determining the molecular mechanisms of preconditioning in
rodent and nonhuman primate models of cerebral ischemia. Identification,
characterization, and preclinical development of preconditioning agents for clinical
use.
- 2008 – Present Scientific consultant, Small Molecule and Biologics Preclinical Drug Development
Specialist. Client list proprietary. Portland, OR
*Provide scientific expertise regarding drug target selection and preclinical drug
development of novel small molecule inhibitors and biologics.*
- 2005 – 2008 Associate Director, Pharmacology Research & Development at Rigel
Pharmaceuticals, Inc., South San Francisco, CA
*Responsible for directing the preclinical development and mechanism of action
studies with novel small molecule target-selective kinase inhibitors for oncology,
metabolic disease, autoimmunity, and various immunology-related indications
leading to clinical studies in man.*
- 2004 – 2005 Scientist II, Biology Research and Immunotherapeutics at Nuvelo, Sunnyvale, CA
*Directed the development and execution of rodent models of inflammatory disease
and cancer to test novel protein and antibody therapeutics.*
- 2004 Scientific advisor, Inflammation and Autoimmunity Research for Corgentech, South
San Francisco, CA
*Provided scientific expertise for design and implementation of preclinical in vivo
inflammation models and in vitro assays for development of NF κ B oligonucleotide
decoys.*

- 2002 – 2004 Research Scientist II, Research and Development at Nereus Pharmaceuticals, San Diego, CA
Project Leader for Anti-Inflammatory Small Molecules Development and Proteasome Inhibitors.
- 1998 – 2002 Doctoral Candidate, laboratories of Lyle L. Moldawer, PhD and Michael J. Clare-Salzler, MD, Departments of Surgery, Pathology, Immunology and Microbiology, University of Florida College of Medicine, Gainesville, FL
- 1997 – 1998 Research Technician, laboratory of M.J. Clare-Salzler, M.D., Department of Pathology, University of Florida College of Medicine, Gainesville, FL
Project: Defects in Activation-Induced Cell Death (AICD) in the Nonobese Diabetic (NOD) Mouse.
- 1995 – 1997 Technician and teaching assistant, laboratory course for Monica Tischler, PhD, Department of Microbiology, Benedictine University, Lisle, IL

Professional Organizations and Committees

- 2002 Past President, College of Medicine Graduate Student Organization, University of Florida College of Medicine
- 2001 – 2002 Chairman of College of Medicine Career Development Committee, 2001-2002, University of Florida College of Medicine
- 2001 – 2002 **Director** of Alternative Careers in Science Seminar Series, University of Florida College of Medicine
- 2001 President, College of Medicine Graduate Student Organization, University of Florida College of Medicine, Gainesville, Florida
- 2001 – Present Member, American Association of Immunologists

Honors and Awards

- 2000 – 2001 NIH Fellowship, T32 NIH Training Grant, 2000-2001, Department of Rheumatology, University of Florida College of Medicine, Gainesville, Florida
- 1995 – 1997 Award for Excellence in the field of Biology, Benedictine University, 1995-1997, all semesters
- 1995 – 1997 St. Benedict Award and Academic Scholarship for academic achievements, Benedictine University
- 1995 – 1997 Dean's list, Benedictine University
- 1994 Award for Excellence in Chemistry, Indiana University

Teaching Experience

- 2009 – Present Instructor, BBOD courses for Medical Students, Oregon Health & Science University
- 1996 – 1997 Teaching Assistant, Microbiology Laboratory, 1996-1997, Benedictine University,

Administrative Skills

Departmental representative for cross-functional project teams comprised of key research scientists from multiple disciplines in a corporate research environment.

Over 10 years of management experience in the laboratory (8 years industry) supervising PhD scientists, graduate students, residents, junior scientists, and research associates.

Federal Grants

None

Publications

H. Urbanski, S.G. Kohama, G.A. West, C. Glynn, R.L. Williams-Karnesky, E. Earl, M. Neuringer, L. Renner, A. Weiss, M.P. Stenzel-Poore, **F.R. Bahjat**. Changes in spontaneous activity assessed by accelerometry correlate with extent of cerebral ischemia-reperfusion injury in the nonhuman primate. *Translational Stroke Research*. 2012;3(4):442-451.

A.B. Packard, P.Y. Leung, K.B. Vartanian, S.L. Stevens, **F.R. Bahjat**, M.P. Stenzel-Poore. TLR9 bone marrow chimeric mice define a role for cerebral TNF in neuroprotection induced by CpG preconditioning. *J Cereb Blood Flow Metab*. 2012;32(12):2193-2200.

R. Gesuete, A.B. Packard, K.B. Vartanian, V.K. Conrad, S.L. Stevens, **F.R. Bahjat**, Tao Yang, M.P. Stenzel-Poore. Poly-ICLC preconditioning protects the blood-brain barrier against ischemic injury in vitro through type I interferon signaling. *Journal of Neurochem*. 2012;123 (suppl. 2):75-85.

A.B. Packard, J. Hedges, **F.R. Bahjat**, S.L. Stevens, M. Conlin, A.M. Salazar, M.P. Stenzel-Poore. Poly-IC preconditioning protects against cerebral and renal ischemia-reperfusion injury. *Journal of Cereb Blood Flow and Metab*. 2012. 32(2):242-24.

F.R. Bahjat, R.L. Williams-Karnesky, S.G. Kohama, G.A. West, K.P. Doyle, M.D. Spector, T.R. Hobbs, M.P. Stenzel-Poore. Proof of concept: pharmacological preconditioning with a Toll-like receptor agonist protects against cerebrovascular injury in a primate model of stroke. *J Cereb Blood Flow Metab*. 2011 May;31(5):1229-42.

G.M. Deng, L. Liu, **F.R. Bahjat**, P.R. Pine, G.C. Tsokos. Inhibition of spleen tyrosine kinase suppresses skin and kidney disease in lupus prone mice. *Arthritis & Rheumatism*. 2010 July 62(7): 2086–2092.

S. Krishnan, B. Chowdhury, A. Magilavy A., C.U. Fisher, H. Nguyen, M.P. Nambiar, V. Kytтарыs, A. Weinstein, **F.R. Bahjat**, P. Pine, V. Rus, A. Magilavy, Y. Juang, George C. Tsokos. Differential Expression and Molecular Associations of Syk in Systemic Lupus Erythematosus T cells. *J Immunol*. 2008 Dec 1;181(11):8145-52.

F.R. Bahjat, P. Pine, A. Reitsma, G. Cassafer, E. Grossbard, D. Daikh. An Orally Bioavailable Kinase Inhibitor Delays Disease Progression in a Murine Model of Systemic Lupus Erythematosus (SLE). *Arthritis & Rheumatism*. 2008 May 58(5):1433-1444.

F.R. Bahjat, J.R. DeBernardis, A. Abouhamze, R. Ungaro, L. Morel, M.J. Clare-Salzler, and L.L. Moldawer. Genetic Determinants of NOD Resistance to TNF- α and D-Galactosamine-Mediated Lethality and Hepatocellular Apoptosis *J Immunol*. May 2008 (*Manuscript accepted with revisions*).

Ta-Hsiang Chao, Thanh Lam, Binh G. Vong, Paqui G. Traves,[Sonsoles Hortelano, Chinmay Chowdhury, **F. Rena Bahjat**, G. Kenneth Lloyd, Lyle L. Moldawer, Lisardo Bosca, Michael A. Palladino, and Emmanuel A. Theodorakis. A New Family of Synthetic Diterpenes that Regulates Cytokine Synthesis by Inhibiting I κ B- α Phosphorylation. *Chem Bio Chem* 2005, 6, 133 – 144.

M.A. Palladino, **F.R. Bahjat**, E.A. Theodorakis and L.L. Moldawer. Anti-TNF α Therapies: The Next Generation. *Nature Reviews Drug Discovery*. 2003 Sept; 2(9): 736-46.

P.A. Efron, A. Martins, D. Minnich, K. Tinsley, R. Ungaro, **F.R. Bahjat**, R. Hotchkiss, M.J. Clare-Salzler, L.L. Moldawer. Characterization of the systemic loss of dendritic cells in murine lymph nodes during polymicrobial sepsis. *J Immunol*. 2004 Sep 1;173(5):3035-43.

K. Blenman, **F.R. Bahjat**, L.L. Moldawer, and L. Morel. Aberrant signaling in the TNF/TNF receptor 1 pathway of the NZM2410 lupus-prone mouse. *Clinical Immunology*. 110 (2004) 124-133.

T. Lam, T. Ling, C. Chowdhury, T.H. Chao, **F.R. Bahjat**, G.K. Lloyd, L.L. Moldawer, M.A. Palladino, E.A. Theodorakis. Synthesis of a novel family of diterpenes and their evaluation as anti-inflammatory agents. *Bioorg Med Chem Lett*. 2003 Oct 16; 13(19): 3217-21.

V.R. Dharnidharka, Y. Van Patten, **F.R. Bahjat**, M. Clare-Salzler. Fas stimulation results in selective islet infiltrate apoptosis in situ and reversal of diabetes. *Ann N Y Acad Sci*. 2002 Apr; 958: 160-2.

C. Oberholzer, A. Oberholzer, K. Bahjat, R. Ungaro, C. Tannahill, M. Murday, **F.R. Bahjat**, Z. Abouhamze, D. LaFace, B. Hutchins, L.L. Moldawer and M.J. Clare-Salzler. Increased survival in murine polymicrobial sepsis induced by local lymph node expression of human interleukin-10. *J Immunol*. 2002 Apr 1; 168(7): 3412-8.

C. Oberholzer, A. Oberholzer, **F.R. Bahjat**, R.M. Minter, C.L. Tannahill, A. Abouhamze, D. LaFace, B. Hutchins, M.J. Clare-Salzler and L.L. Moldawer. Targeted adenovirus-induced expression of IL-10 decreases thymic apoptosis and improves survival in murine sepsis. *Proc Natl Acad Sci U S A*. 2001 Sep 25; 98(20): 11503-8.

R.M. Minter, M.A. Ferry, M. Murday, C. Tannahill, **F.R. Bahjat**, C. Oberholzer, A. Oberholzer, D. LaFace, B. Hutchins, S. Wen, J. Shinoda, E.M. Copeland, and L.L. Moldawer. Adenoviral delivery of human and viral IL-10 in murine sepsis. *J Immunol*. 2001 Jul 15; 167(2): 1053-9.

R.M. Minter, M.A. Ferry, **F.R. Bahjat**, A. Oberholzer, C. Oberholzer, D. LaFace, V. Tsai, I. Ahmed, B. Hutchins, R. Moyer, E.M. Copeland, III, L.L. Moldawer. Extended Lung Expression and Increased Tissue Localization of Viral IL-10 with Adenoviral Gene Therapy. *Proc Natl Acad Sci U S A*. 2001 Jan 2; 98 (1): 277-82.

F.R. Bahjat, V.R. Dharnidharka, K. Fukuzuka, L. Morel, J.M. Crawford, M.J. Clare-Salzler, L.L. Moldawer. Reduced susceptibility of nonobese diabetic mice to TNF-alpha and D-galactosamine-mediated hepatocellular apoptosis and lethality. *J Immunol*. 2000 Dec 1; 165(11): 6559-67.

M. Nowak, G.C. Gaines, J. Rosenberg, R. Minter, **F.R. Bahjat**, J. Rectenwald, S.L.D. MacKay, C.K. Edwards, III, L.L. Moldawer. Lipopolysaccharide-induced liver injury in D-galactosamine-sensitized mice requires secreted TNF-alpha and the TNF p55 receptor. *Am J Physiol Regul Integr Comp Physiol*. 2000 May; 278(5): R1202-9.

M.D. Josephs, **F.R. Bahjat**, K. Fukuzuka, R. Ksontini, C.C. Solorzano, C.K. Edwards, III, C.L. Tannahill, S.L.D. MacKay, E.M. Copeland, III, L.L. Moldawer. Lipopolysaccharide and D-galactosamine-induced hepatic injury is mediated by TNF-alpha and not by Fas ligand. *Am J Physiol Regul Integr Comp Physiol*. 2000 May; 278(5): R1196-201.

Chapters and Reviews

Bahjat FR, Gesuete R, Stenzel-Poore MP. "Steps to Translate Preconditioning from Basic Research to the Clinic." *Translational Stroke Research*. 2012; 10.1007/s12975-012-0223-4. NIHMSID: 419172.

Bahjat F.R., Vartanian K.B., A.G. West, M.P., Stenzel-Poore MP. "Toll-like receptor agonists as antecedent therapy for ischemic brain injury: advancing preclinical studies to the nonhuman primate," in *Translational Stroke Research: from target selection to clinical trials*. Lapchak, Paul A.; Zhang, John H. (Eds.) 2012, XXIV; chapter 10:p.205-230.

M.A. Palladino, **F.R. Bahjat**, E.A. Theodorakis and L.L. Moldawer. Anti-TNF α Therapies: The Next Generation. *Nature Reviews Drug Discovery*. 2003 Sept; 2(9): 736-46.

Invited Lectures or Conference Presentations

- 2012 F. R. Bahjat. Invited lecture. 19th Annual Blood Brain Barrier Consortium Meeting, Skamania, WA.
- 2011 **F.R. Bahjat**, R.L. Williams-Karnesky, G.A. West, S.G. Kohama, H.F. Urbanski, M.P. Stenzel-Poore. Activity measured by accelerometer correlates with infarct volume and neurological behavior in a rhesus macaque ischemic stroke model. XXVth International Symposium on Cerebral Blood Flow, Metabolism and Function and the Xth International Conference on Quantification of Brain Function with PET meeting. Barcelona, Spain.
- 2011 **F.R. Bahjat**, G.A. West, S.G. Kohama, C. Glynn, D. Deane, R.L. Williams-Karnesky, T.R. Hobbs, L. Martin, S. Stevens, and M.P. Stenzel-Poore. Preclinical development of CpG ODNs as antecedent therapy for ischemic brain injury. Molecular Microbiology and Immunology Annual Retreat, OHSU, Portland, OR.
- 2010 R.L. Williams-Karnesky, **F.R. Bahjat**, C. Glynn, G.A. West, T.R. Hobbs, L. Martin, S.G. Kohama, M.D. Spector, M.R. Grafe, S. Stevens, Roger P. Simon, and M.P. Stenzel-Poore. CpG ODNs: A Novel Therapeutic Strategy for Ischemic Brain Damage. 16th Annual Blood-Brain Barrier (BBB) Consortium meeting, International BBB Society. Stevens, WA.
- 2010 R.L. Williams-Karnesky, **F.R. Bahjat**, C. Glynn, G.A. West, T.R. Hobbs, L. Martin, S.G. Kohama, M.D. Spector, M.R. Grafe, S. Stevens, Roger P. Simon, and M.P. Stenzel-Poore. CpG ODNs: A Novel Therapeutic Strategy for Ischemic Brain Damage. Molecular Microbiology and Immunology Annual Retreat, OHSU, Portland, OR.
- 2009 Murigenics, Inc., Berkeley, CA
- 2008 Medarex, Inc. Milpitas, CA
- 2007 V. Markovtsov, D. Yu, M. Gelman, W. Lang, V.C. Taylor, S. Huynh, R. Frances, S. Fang, J. McLaughlin, S. Bhamidipati, J. Clough, R. Singh, G. Park, D. Sweeney, E. Tonkin, **F.R. Bahjat**, B. Chang, P. Pine, R. Daniel, D.G. Payan, S. Holland, and Y. Hitoshi. Targeting Myeloproliferative Diseases with JAK2 Inhibitors. *Blood*. **Abstract**. Nov 2007; 110: 3550.
- 2006 **F.R Bahjat**, A. Reitsma, G.Cassafer, P. Pine, E. Grossbard, D. Daikh. An Orally Bioavailable Kinase Inhibitor Delays Disease Progression in a Murine Model of Systemic Lupus Erythematosus (SLE). *Arthritis & Rheumatism*. 54 (9):S453. **Abstract**. Annual ACR meeting, Washington, DC, 2006.
- 2005 **F.R. Bahjat** and P. Pine, B. Chang, Y. Hitoshio, P. Pine, E. Grossbard. An Orally Bioavailable Inhibitor of FLT3 and Syk Kinases Prevent Tumor Growth in Subcutaneously Implanted Human Tumor Xenografts and Promotes Cell Death of FLT3 Mutant AML Cells. **Oral presentation**. 48th Annual ASH Meeting. Atlanta, Georgia. 2005
- 2004 J.C. Cusack, Jr., Rong Liu, Lijun Xia, D. Ljungman, **F. R. Bahjat**, and M.A. Palladino, Jr. NPI-0052—a novel orally administered marine product that promotes chemosensitivity in a

- colon cancer xenograft model via proteasome inhibition. **Abstract.** EORTC-NCI-AACR Meeting, 2004.
- 2004 B. Miller, **F.R. Bahjat**, Ta-Hsiang Chao, B. Nicholson, S.T. Neuteboom, G.K. Lloyd, M.A. Palladino, Jr. Development of a structurally and biologically novel, oral proteasome inhibitor. **Abstract.** 95th Annual AACR Meeting, 2004.
- 2004 B. Nicholson, **F.R. Bahjat**, P. Borgstrom, S.T. Neuteboom, M.A. Palladino, Jr., G.K. Lloyd. NPI-2358, a novel diketopiperazine, induces tubulin depolymerization in vitro and tumor vascular collapse in vivo. **Abstract** . 95th Annual AACR Meeting, 2004.
- 2004 M.A. Palladino, B. Nicholson, **F. R. Bahjat**, P. Borgström*, S.T.C. Neuteboom, and G. K. Lloyd. NPI-2358, A Novel Diketopiperazine that induces Tumor vascular collapse. **Abstract.** 2nd International Vascular Targeting Conference, 2004.
- 2004 T.H. Chao, **F.R. Bahjat**, B. Nicholson, S.T.C. Neuteboom, M.A. Palladino. (2004) NPI-0052, A novel potent Proteasome inhibitor. **Abstract.** AACR Meeting, 2004.
- 2003 M.A. Palladino, P. Borgström, A. Deisseroth, B. Nicholson, **F.R. Bahjat**, S.T.C. Neuteboom, G.K. Lloyd. (2003) The Halimides, a novel family of diketopiperazines with vascular targeting properties. **Abstract.** AACR Meeting, 2003.
- 2002 **F.R. Bahjat**, J. DeBernardis, L. Morel, M. J. Clare-Salzler and L.L. Moldawer. Genetic determinants of TNF-mediated liver injury in NOD mice. **Abstract.** Experimental Biology 2002, New Orleans, LA, 2002.
- 2001 M.E. Murday, **F.R. Bahjat**, R.M. Minter, R. Ungaro, J. DeBernardis, L.L. Moldawer. Adenoviral expression of IL-10 promotes a dose-dependent survival advantage to zymosan-induced ARDS. **Abstract.** The Cytokine Odyssey, Maui, Hawaii, 2001.
- 2000 **F.R. Bahjat**, M.J. Clare-Salzler, L.L. Moldawer. Genetic polymorphisms in the response to lipopolysaccharide and D-galactosamine in the mouse. **Oral Presentation.** Surgical Infection Society Meeting, Providence, Rhode Island, 2000.
- 2000 **F.R. Bahjat**, M.J. Clare-Salzler, L.L. Moldawer. Genetic determinants of TNF-alpha-mediated liver apoptosis. **Abstract.** 5th World Congress on Trauma, Shock, Inflammation and Sepsis. **Abstract.** Munich, Germany, 2000.
- 1999 K.S. Bahjat, **F.R. Bahjat**, D.S. Whittaker, T. Xie, E. Wakeland, T. Aufferberg, L. Moldawer and M.J. Clare-Salzler. Defect in AICD in the NOD mouse. **Abstract.** Keystone Symposium: Autoimmunity and Tolerance, Keystone, Colorado, 1999.