

## CURRICULUM VITAE

1. Date: Update- 10/15/2020

2. PERSONAL:

2. Name: Nancy Grace Klimas

3. ACADEMIC EMPLOYMENT: Nova Southeastern University

3a. Office Address: NSU Institute for Neuro-Immune Medicine  
3321 College Ave Suite #405 Davie, FL 33314

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Miami, FL 33125

3b. Office Phones: (305) 575-7000 (VA); 305-262-2866 (NSU)  
Email: nklimas@nova.edu

3c. Current Academic Rank: Professor

3d. Primary Department: Medicine

3e. Academic and Professional Appointments:

### **Current:**

10/1/2016 - present: Assistant Dean of Research, KPCOM, Nova Southeastern University, Davie, FL

12/1/2011 – present: Chair, Department of Clinical Immunology, KPCOM, Nova Southeastern University, Davie, FL

12/1/2011 – Present; Director, NSU Institute for Neuro-Immune Medicine, NSU, Davie, FL

3/1/2012 – Present; Medical Director, NSU Neuro-Immune Medicine Clinics

12/1/2011 – Present; Professor of Medicine, Nova Southeastern University College of Osteopathic Medicine, Davie, FL

12/1/2011 - Present; Professor Emerita (active), Departments of Medicine, Psychology,

Microbiology and Immunology, University of Miami School of Medicine, Miami, FL

1987 – Present; Director of AIDS Research, and Co-Director of the AIDS Clinical Research Unit, Miami VA Medical Center

1999 – Present; Director, VAMC/NSU CFS/GWI Multidisciplinary Research Center (initiated with NIH Center funding, U01 AI45940)

1985 – Present; Co-Director, E.M. Papper Clinical Immunology Laboratory, Miami VA Medical Center and Department of Medicine, University of Miami School of Medicine

2011 – Present; Director, GWI and CFS/ME Clinics VA Medical Center, Miami

1/1/2015 - 12/31/2015: Member of Budget Subcommittee, Miami VA Healthcare System

1/1/2015 - 12/31/2015: Member of Space Subcommittee, Miami VA Healthcare System

**Past:**

1984 - 2011: Director, VA Allergy and Immunology Clinic

1996 - 2011: Professor of Medicine, University of Miami Miller School of Medicine, Miami, FL (primary)

1997 - 2011: Professor of Psychology, University of Miami College of Arts and Sciences

1999 – 2011: Professor of Microbiology and Immunology, University of Miami Miller School of Medicine

1987 –2011: Director, University of Miami Diagnostic Immunology and Chronic Fatigue Clinics

2001 – 6 month sabbatical, Centers for Disease Control and Prevention, National Center for Infectious Diseases/ Division of Viral and Rickettsial Diseases, Viral Exanthems and Herpesviruses Branch, “Empiric Case Definition of CFS” working group.

1996 – 1998: Director, West Palm Beach VAMC Allergy Clinic

1991 - 1996: Associate Professor of Medicine, University of Miami School of Medicine

1994 - 1999: Associate Professor of Microbiology and Immunology, University of Miami School of Medicine,

1993 - 1997: Associate Professor of Psychology, University of Miami College of Arts and Sciences

1985 - 1991: Instructor and Assistant Professor of Medicine, University of Miami School of Medicine

1984 - 2011 National Cancer Institute Research Fellow; Clinical Immunology Lab, Department of Medicine, University of Miami School of Medicine

#### 4. HIGHER EDUCATION

##### 4a. Institutional:

Virginia Commonwealth University 9/1972 - 6/1973

University of South Florida, 9/1973 - 6/1976

University of Miami, M.D., 8/1976 - 6/1980

Baylor University Hospitals and Clinics, Medical Internship, 6/1980 – 6/1981

University of Miami Hospitals and Clinics, Medical Residency, 6/1981 – 6/1983

NCI Fellow; Post-Doctoral Fellowship in Diagnostic Laboratory Immunology, E.M. Papper Laboratory of Clinical Immunology, University of Miami, 6/1983 - 6/1984

#### 5. PROFESSIONAL ACTIVITIES

##### 5a. Certification, Licensure:

National Boards Part I, II and III

Florida State Medical License, 1983- current (ME41879)

American Board of Internal Medicine, 1984

ABIM Certification in Diagnostic Laboratory Immunology, 1986

Current hospital affiliations:

Miami Veteran Affairs Carter Medical Center  
University of Miami Hospital,  
Jackson Memorial Hospital

## 5b. Publications

### Books Published:

1. Chronic Fatigue Syndrome, P. Goodnik and N.G. Klimas, eds., American Psychiatric Press, Washington, D.C., 1993.
2. Clinical Management of Chronic Fatigue Syndrome, N. Klimas, MD and R Patarca, MD PhD, eds., The Haworth Medical Press, New York • London ,1995
3. Disability and Chronic Fatigue Syndrome. Clinical, Legal and Patient Perspectives. Klimas, N.G., Patarca, R, eds Haworth Press, Inc., New York • London, 1997

### Books currently contracted:

Chronic Fatigue Syndrome: A Patient's Guide  
Johns Hopkins Press; Nancy Klimas, MD

### Invited Book Chapters Published:

1. Fletcher, MA, Barnes Z, Broderick G and **Klimas NG**. Psychoneuroimmunology and natural killer cells: the chromium release whole blood assay. In *Protocols in Psychoneuroimmunology*. Yan, Q, ed., Humana Press, 2012.
2. **Klimas NG** Gulf War Illness, Encyclopedia of Behavioral Medicine, Springer Press 2011
3. Fletcher, MA, Klimas NG, Cytotoxic Lymphocytes. G. Fink, Ed. In Encyclopedia of Stress, 2<sup>nd</sup> edition, Academic Press, Oxford, 2007
4. **Klimas, NG**, Fletcher MA and Lawrence R. Psychoneuroimmunology and Fatigue In: Fatigue as a Window to the Brain, J DeLuca, eds 2005.
5. Maher, K, **Klimas, NG** and Fletcher, MA. Immunology of Chronic Fatigue Syndrome. In Handbook of Chronic Fatigue Syndrome. Jason, Fennell and Taylor, eds John Wiley and Sons, 1-38, 2003
6. Fletcher, MA, **Klimas, NG** and Patarca, R. Cytotoxic Lymphocytes, Fink, G., ed in Encyclopedia of Stress, Academic Press, pg. 639-643, 2000.
7. **Klimas, NG** Immune Pathogenesis of HIV/AIDS in Psychosocial and Biomedical Interactions in HIV Infection, KH Knott and K Vedhera, eds; L Temoshok, series Ed. Harwood Academic Publishers, Amsteldijk, The Netherlands. p 1-30, 2000.
8. Fletcher, M.A., Ironson, G., Goodkin, K., Antoni, M., Schneiderman, N. and **Klimas, M.A.** Stress and immune function in HIV-1 disease. In Workman, E. and Hubbard, J., eds. Stress Medicine. CRC Press, Boca Raton, FL, p229-242, 1998
9. **Klimas, N.G.** Delayed-type hypersensitivity. in Manual of Clinical Laboratory Immunology, 5th edition., Rose, N., et al, eds, Amer. Soc. Microbiology. 276-280, 1997

10. Ironson, G., Antoni, M., Schneiderman, N., LaPerriere, A., **Klimas, N.** and Fletcher, M.A. Stress Management Interventions and psychosocial predictors of progression in HIV-1 infection. in K.Goodkin, ed. Pyschoneuroimmunology, Stress, Mental Disorders and Health. American Psychiatric Press, Washington, D.C., 1995
11. Schneiderman, N., Antoni, M., Ironson, G., **Klimas, N.G.**, LaPerriere, A., Kumar, M., Esterling, B. and Fletcher, M.A.. HIV-1, Immunity and Behavior. in Handbook of Human Stress and Immunity. ed by Glaser, R. and Kiecolt-Glaser. Academic Press, Inc. New York, 1995.
12. **Klimas, N.G.**, Morgan, R., Van Riel, F.. and Fletcher, M.A., Clinical Observations Regarding Use of an Anti-Depressant, Fluoxetine in Chronic Fatigue Syndrome, in Chronic Fatigue Syndrome, P. Goodnik and N.G. Klimas, eds., American Psychiatric Press, Washington, D.C., p95-108, 1993.
13. Patarca, R., **Klimas, N.G.**, and Fletcher, M.A. Immunological Correlates of Chronic Fatigue Syndrome. in Chronic Fatigue Syndrome, P. Goodnik and **N.G. Klimas**, eds., American Psychiatric Press, Washington, D.C., p1-22, 1993.
14. Fletcher, M.A., Morgan, R. and **Klimas, N.G.** Immunologic Consequences of Treatment for Drug Abuse in Proceedings of the 2nd International Symposium on Drugs of Abuse, Immunity and AIDS. Friedman, H. et al., eds., Plenum Press, New York, p241-246, 1993.
15. Fletcher, M.A., **Klimas, N.G.**, Morgan, R. and Gjerset, G. Lymphocyte Proliferation Assays. in Manual of Clinical Laboratory Immunology, 4th edition., Rose, N., et al, eds, Amer. Soc. Microbiology. pg. 213219, 1992.
16. **Klimas, N.G.**, Morgan, R., Salvato, F., Van Reil, F., Millon, C. and Fletcher, M.A. Chronic Fatigue Syndrome and Psychoneuroimmunology. In Stress and Disease Progression: Perspectives in Behavioral Medicine. Schneiderman, N., McCabe, P. and Baum, A., eds. Lawrence Erlbaum, Assoc., Hillsdale, NJ, P121-137, 1992.
17. **Klimas, N.G.**, Fletcher, M.A., Walling, J., Garcia-Morales, R., Patarca, R., Moody, D. and Okarma, T. Ex Vivo Expansion, Activation and re-infusion in to Donor with rIL-2 - a Phase 1 Study. in Retroviruses of Human AIDS and Related Diseases, Girard, R, M. and Valette, L., eds, in 8th Colloque des Cent Gardes., pg. 285-290, 1992.
18. **Klimas, N.G.**, Baron, G.C. and Fletcher, M.A. The Immunology of HIV1 Infection. in Stress, Coping and Disease edited by Schneiderman, N., McCabe, P., Fields, T. and Skyler, J. Lawrence Erlbaum and Associates, Hillsdale, N.J. p193209, 1991.
19. LaPerriere, A., Antoni, M., **Klimas, N.G.**, Schneiderman, N. and Fletcher, M.A. Psychoimmunology and Stress Management in HIV1 Infection. in Update in Psychoneuroimmunology, Gorman, J.M. and Kertzner, R.M., eds. Progress in Psychiatry, #35, Spiegel, D. series ed., American Psychiatric Press, Washington, D.C., p. 81112, 1991
20. Fletcher, M.A., Caldwell, K.E. and **Klimas, N.G.** The Use of GlycoproteinLatex Conjugates in a Rapid Slide Test for PaulBunnell (PB) Antibodies in Unabsorbed Sera. in Clinical Immunology Pruzanski, W, Seligmann, M., eds, Elsevier Science Publ., Amsterdam, pg 247250, 1987.

Juried or Refereed Journal Articles:

1. Bose, D., Mondal, A., Saha, P., Kimono, D., Sarkar, S., Seth, R.K., Janulewicz, P., Sullivan, K., Horner, R., **Klimas, N.** and Nagarkatti, M., 2020. TLR Antagonism by Sparstolonin B Alters Microbial Signature and Modulates Gastrointestinal and Neuronal Inflammation in Gulf War Illness Preclinical Model. *Brain Sciences*, 10(8), p.532.
2. Janulewicz, P., Krengel, M., Quinn, E., Heeren, T., Toomey, R., Killiany, R., Zundel, C., Ajama, J., O'Callaghan, J., Steele, L., **Klimas, N.**, Sullivan, K. (2018). The Multiple Hit Hypothesis for Gulf War Illness: Self-Reported Chemical/Biological Weapons Exposure and Mild Traumatic Brain Injury. *Brain sciences*, 8(11), 198. doi:10.3390/brainsci8110198
3. Craddock TJA, Michalovicz LT, Kelly KA, Rice MA Jr, Miller DB, **Klimas NG**, Morris M, O'Callaghan JP and Broderick G (2018) A Logic Model of Neuronal-Glial Interaction Suggests Altered Homeostatic Regulation in the Perpetuation of Neuroinflammation. *Front. Cell. Neurosci.* 12:336. doi: 10.3389/fncel.2018.00336
4. Jaundoo, R., Bohmann, J., Gutierrez, G., **Klimas, N.**, Broderick, G., & Craddock, T. (2018). Using a Consensus Docking Approach to Predict Adverse Drug Reactions in Combination Drug Therapies for Gulf War Illness. *International Journal of Molecular Sciences*, 19(11), 3355. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/ijms19113355>
5. Michalovicz, LT, Locker, AR, Kelly, KA, Miller, JV, Barnes, Z, Fletcher, MA, Miller, DB, **Klimas, NG**, Morris, M, Lasley, SM & O'Callaghan, JP 2019, 'Corticosterone and pyridostigmine/DEET exposure attenuate peripheral cytokine expression: Supporting a dominant role for neuroinflammation in a mouse model of Gulf War Illness' *NeuroToxicology*, vol. 70, pp. 26-32. <https://doi.org/10.1016/j.neuro.2018.10.006>
6. Joshi U, Evans JE, Joseph R, Emmerich T, Saltiel N, Lungmus C, Oberlin S, Langlois H, Ojo J, Mouzon B, Paris D, Mullan M, Jin C, **Klimas N**, Sullivan K, Crawford F, Abdullah L. Oleoylethanolamide treatment reduces neurobehavioral deficits and brain pathology in a mouse model of Gulf War Illness. *Sci Rep.* 2018 Aug 27;8(1):12921. doi: 10.1038/s41598-018-31242-7. PubMed PMID: 30150699; PubMed Central PMCID: PMC6110778.
7. Khalil L, McNeil RB, Sims KJ, Felder KA, Hauser ER, Goldstein KM, Voils CI, **Klimas NG**, Brophy MT, Thomas CM, Whitley RL, Dursa EK, Helmer DA, Provenzale DT. The Gulf War Era Cohort and Biorepository: A Longitudinal Research Resource of Veterans of the 1990-1991 Gulf War Era. *Am J Epidemiol.* 2018 Jul 30. doi: 10.1093/aje/kwy147. [Epub ahead of print] PubMed PMID: 30060060.
8. Trivedi MS, Oltra E, Sarria L, Rose N, Beljanski V, Fletcher MA, **Klimas NG**, Nathanson L. Identification of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome-associated DNA methylation patterns. *PLoS One.* 2018 Jul 23;13(7):e0201066. doi: 10.1371/journal.pone.0201066. eCollection 2018. PubMed PMID: 30036399; PubMed Central PMCID: PMC6056050.
9. Nagy-Szakal D, Barupal DK, Lee B, Che X, Williams BL, Kahn EJR, Ukaijwe JE, Bateman L, **Klimas NG**, Komaroff AL, Levine S, Montoya JG, Peterson DL, Levin B, Hornig M, Fiehn O, Lipkin WI. Insights into myalgic encephalomyelitis/chronic

- fatigue syndrome phenotypes through comprehensive metabolomics. *Sci Rep.* 2018 Jul 3;8(1):10056. doi: 10.1038/s41598-018-28477-9. PubMed PMID: 29968805; PubMed Central PMCID: PMC6030047.
10. Fletcher MA, Barnes Z, Broderick G, **Klimas NG**. Psychoneuroimmunology and Natural Killer Cells: The Chromium-Release Whole-Blood Assay. *Methods Mol Biol.* 2018;1781:209-220. doi: 10.1007/978-1-4939-7828-1\_12. PubMed PMID: 29705850.
  11. Tory Toole J, Rice MA Jr, Craddock TJA, Nierenberg B, **Klimas NG**, Fletcher MA, Zysman J, Morris M, Broderick G. Breaking Away: The Role of Homeostatic Drive in Perpetuating Depression. *Methods Mol Biol.* 2018;1781:121-144. doi: 10.1007/978-1-4939-7828-1\_8. PubMed PMID: 29705846.
  12. Broderick G, Fletcher MA, Gallagher M, Barnes Z, Vernon SD, **Klimas NG**. Exploring the Diagnostic Potential of Immune Biomarker Co-expression in Gulf War Illness. *Methods Mol Biol.* 2018;1781:101-120. doi: 10.1007/978-1-4939-7828-1\_7. PubMed PMID: 29705845.
  13. Tory Toole J, Rice MA Jr, Cargill J, Craddock TJA, Nierenberg B, **Klimas NG**, Fletcher MA, Morris M, Zysman J, Broderick G. Increasing Resilience to Traumatic Stress: Understanding the Protective Role of Well-Being. *Methods Mol Biol.* 2018;1781:87-100. doi: 10.1007/978-1-4939-7828-1\_6. PubMed PMID: 29705844.
  14. McIntosh R, Antoni M, Seay J, Fletcher MA, Ironson G, **Klimas N**, Kumar M, Schneiderman N. Associations Among Trajectories of Sleep Disturbance, Depressive Symptomology and 24-Hour Urinary Cortisol in HIV+ Women Following a Stress Management Intervention. *Behav Sleep Med.* 2018 Feb 20:1-16. doi:10.1080/15402002.2018.1435545. [Epub ahead of print] PubMed PMID: 29461096.
  15. Milrad SF, Hall DL, Jutagir DR, Lattie EG, Czaja SJ, Perdomo DM, Fletcher MA, **Klimas N**, Antoni MH. Depression, evening salivary cortisol and inflammation in chronic fatigue syndrome: A psychoneuroendocrinological structural regression model. *Int J Psychophysiol.* 2017 Sep 14. pii: S0167-8760(17)30162-9. doi:10.1016/j.ijpsycho.2017.09.009. [Epub ahead of print] PubMed PMID: 28918107.
  16. Emmerich, T., Zakirova, Z., **Klimas, N.**, Sullivan, K., Shetty, A., & Evans, J. et al. (2017). Phospholipid profiling of plasma from GW veterans and rodent models to identify potential biomarkers of Gulf War Illness. *PLOS ONE*, 12(4), e0176634. <http://dx.doi.org/10.1371/journal.pone.0176634>
  17. Halpin, P., Williams, M., **Klimas, N.**, Fletcher, M., Barnes, Z., & Ariza, M. (2017). Myalgic encephalomyelitis/chronic fatigue syndrome and gulf war illness patients exhibit increased humoral responses to the herpesviruses-encoded dUTPase: Implications in disease pathophysiology. *Journal Of Medical Virology*, 89(9), 1636-1645. <http://dx.doi.org/10.1002/jmv.24810>
  18. Unger ER, Lin JS, Tian H, Natelson BH, Lange G, Vu D, Blate M, **Klimas NG**, Balbin EG, Bateman L, Allen A, Lapp CW, Springs W, Kogelnik AM, Phan CC, Danver J, Podell RN, Fitzpatrick T, Peterson DL, Gottschalk CG, Rajeevan MS; MCAM Study Group. Multi-Site Clinical Assessment of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (MCAM): Design and Implementation of a Prospective/Retrospective Rolling Cohort Study. *Am J Epidemiol.* 2017 Apr 15;185 (8):617-626. doi: 10.1093/aje/kwx029. PubMed PMID: 28338983.

19. Nagy-Szakal D, Williams BL, Mishra N, Che X, Lee B, Bateman L, **Klimas NG**, Komaroff AL, Levine S, Montoya JG, Peterson DL, Ramanan D, Jain K, Eddy ML, Hornig M, Lipkin WI. Fecal metagenomic profiles in subgroups of patients with myalgic encephalomyelitis/chronic fatigue syndrome. *Microbiome*. 2017 Apr 26;5(1):44. doi: 10.1186/s40168-017-0261-y. PubMed PMID: 28441964; PubMed Central PMCID: PMC5405467.
20. McIntosh RC, Antoni M, Carrico A, Duran R, Hurwitz BE, Ironson G, Fletcher MA, Klimas N, Kumar M, Schneiderman N. Change in urinary cortisol excretion mediates the effect of angry/hostile mood on 9 month diastolic blood pressure in HIV+ adults. *J Behav Med*. 2017 Feb 2. doi: 10.1007/s10865-017-9827-1. [Epub ahead of print] PubMed PMID: 28155001
21. Hall DL, Lattie EG, Milrad SF, Czaja S, Fletcher MA, **Klimas N**, Perdomo D, Antoni MH. Telephone-administered versus live group cognitive behavioral stress management for adults with CFS. *J Psychosom Res*. 2017 Feb;93:41-47. doi: 10.1016/j.jpsychores.2016.12.004. Epub 2016 Dec 8.
22. Milrad SF, Hall DL, Jutagir DR, Lattie EG, Ironson GH, Wohlgemuth W, Nunez MV, Garcia L, Czaja SJ, Perdomo DM, Fletcher MA, **Klimas N**, Antoni MH. Poor sleep quality is associated with greater circulating pro-inflammatory cytokines and severity and frequency of chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) symptoms in women. *J Neuroimmunol*. 2016 Dec 14. pii: S0165-5728(16)30449-0. doi: 10.1016/j.jneuroim.2016.12.008. [Epub ahead of print]
23. Abdullah L, Evans JE, Joshi U, Crynen G, Reed J, Mouzon B, Baumann S, Montague H, Zakirova Z, Emmerich T, Bachmeier C, **Klimas N**, Sullivan K, Mullan M, Ait-Ghezala G, Crawford F. Long title: Translational potential of long-term decreases in mitochondrial lipids in a mouse model of Gulf War Illness. *Toxicology*. 2016 Oct 29. pii: S0300-483X(16)30256-6. doi: 10.1016/j.tox.2016.10.012. [Epub ahead of print]
24. Abdullah L, Evans JE, Joshi U, Crynen G, Reed J, Mouzon B, Baumann S, Montague H, Zakirova Z, Emmerich T, Bachmeier C, **Klimas N**, Sullivan K, Mullan M, Ait-Ghezala G, Crawford F. Translational potential of long-term decreases in mitochondrial lipids in a mouse model of Gulf War Illness. *Toxicology*. 2016 Nov 30; 372:22-33. doi: 10.1016/j.tox.2016.10.012.
25. Barkin JA, Czul F, Barkin JS, **Klimas NG**, Rey IR, Moshiree B. Gastric Enterovirus Infection: A Possible Causative Etiology of Gastroparesis. *Dig Dis Sci*. 2016 Aug; 61(8):2344-50. doi: 10.1007/s10620-016-4227-x.
26. Harvey, J. M., Broderick, G., Bowie, A., Barnes, Z. M., Katz, B. Z., O'Gorman, M. R., Vernon, S. D., Fletcher, M. A., **Klimas, N. G.**, Taylor, R. (2016). Tracking post-infectious fatigue in clinic using routine Lab tests. *BMC pediatrics*, 16(1), 54. (Peer Reviewed: No)
27. Russell L, Broderick G, Taylor R, Fernandes H, Harvey J, Barnes Z, Smylie A, Collado F, Balbin EG, Katz BZ, **Klimas NG**, Fletcher MA. [Illness progression in chronic fatigue syndrome: a shifting immune baseline](#). *BMC Immunol*. 2016 Mar 10;17(1):3. doi: 10.1186/s12865-016-0142-3.
28. White RF, Steele L, O'Callaghan JP, Sullivan K, Binns JH, Golomb BA, Bloom FE, Bunker JA, Crawford F, Graves JC, Hardie A, **Klimas N**, Knox M, Meggs WJ, Melling J, Philbert MA, Grashow R. Recent research on Gulf War illness and other health problems in veterans of the 1991 Gulf War: Effects of toxicant exposures during deployment. *Cortex*. 2016 Jan;



- 74:449-75. doi: 10.1016/j.cortex.2015.08.022. Epub 2015 Sep 25. Review.
29. Craddock TJ, Del Rosario RR, Rice M, Zysman JP, Fletcher MA, **Klimas NG**, Broderick G. Achieving Remission in Gulf War Illness: A Simulation-Based Approach to Treatment Design. *PLoS One*. 2015 Jul 20;10(7):e0132774. doi: 10.1371/journal.pone.0132774. eCollection 2015.
  30. Daniel L. Hall, Michael H. Antoni, Emily G. Lattie, Devika R. Jutagir, Sara J. Czaja, Dolores Perdomo, Suzanne C. Lechner, Jamie M. Stagl, Laura C. Bouchard, Lisa M. Gudenkauf, Lara Traeger, Mary Ann Fletcher & **Nancy G. Klimas** (2015): Perceived fatigue interference and depressed mood: comparison of chronic fatigue syndrome/Myalgic encephalomyelitis patients with fatigued breast cancer survivors, *Fatigue: Biomedicine, Health & Behavior*, DOI:10.1080/21641846.2015.1039289
  31. Craddock TJ, Harvey JM, Nathanson L, Barnes ZM, **Klimas NG**, Fletcher MA, Broderick G. Using gene expression signatures to identify novel treatment strategies in gulf war illness. *MC Med Genomics*. 2015 Jul 9;8:36. doi: 10.1186/s12920-015-0111-3.
  32. Vashishtha S, Broderick G, Craddock TJ, Fletcher MA, **Klimas NG**. Inferring Broad Regulatory Biology from Time Course Data: Have we Reached an Upper Bound under Constraints Typical of In Vivo Studies? *PLoS One*. 2015 May 18;10(5):e0127364. doi: 10.1371/journal.pone.0127364. eCollection 2015.
  33. **N.G. Klimas**, G. Ironson, A. Carter, E. Balbin, L. Bateman, D. Felsenstein, S. Levine, D. Peterson, K. Chiu, A. Allen, K. Cunningham, C.G. Gottschalk, M. Fletcher, M. Hornig, C. Canning, A.L. Komaroff. Findings from a clinical and laboratory database developed for discovery of pathogenic mechanisms in myalgic encephalomyelitis/chronic fatigue syndrome. *Fatigue: Biomedicine, Health & Behavior* 3(2):75-96. DOI:10.1080/21641846.2015.1023652
  34. Hornig, M, Montoya, JG, **Klimas, NG**, Levine, S, Felsenstein, D, Bateman, L, Peterson, DL, Gottschalk CG, Schultz, AF, Che, X, Eddy, ML, Komaroff, AL, Lipkin, WI. Distinct plasma immune signatures in ME/CFS are present early in the course of illness. *Sci Adv*. 2015 Feb 27.
  35. Irlbeck, DM, Vernon, SD, McCleary, KK, Bateman, L, **Klimas, NG**, Lapp, CW, Peterson, DL, Brown, JR, Remlinger, KS, Wilfret, DA, Ferondelis, P. No association found between the detection of either xenotropic murine leukemia virus-related virus or polytropic murine leukemia virus and chronic fatigue syndrome in a blinded, multi-site, prospective study by the establishment and use of the SolveCFS BioBank. *BMC Research Notes*. 2014, Aug 4, 7:461.
  36. Craddock TJA, Miller DB, Fletcher MA, **Klimas NG**, Broderick G. A Role for Homeostatic Drive in the Perpetuation of Complex Chronic Illness: Gulf War Illness and Chronic Fatigue Syndrome. *PLoS One*, Jan 8 2014; 9(1):e84839. doi:10.1371/journal.pone.0084839. PMID: 24416298
  37. Lattie EG, Antoni MH, Fletcher MA, Czaja S, Perdomo D, Sala A, Nair S, Fu SH, Penedo FJ, **Klimas N**. Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Symptom Severity: Stress Management Skills are Related to Lower Illness Burden. *Fatigue*. 2013;1(4). doi: 10.1080/21641846.2013.843255.

38. Smylie AL, Broderick G, Fernandes H, Razdan S, Barnes Z, Collado F, Sol C, Fletcher MA, **Klimas N**. A comparison of sex-specific immune signatures in Gulf War illness and chronic fatigue syndrome. *BMC Immunol*. 2013 Jun 25;14:29. doi: 10.1186/1471-2172-14-29.
39. Broderick G, Ben-Hamo R, Vashishtha S, Efroni S, Nathanson L, Barnes Z, Fletcher MA, **Klimas N** Altered immune pathway activity under exercise challenge in Gulf War Illness: an exploratory analysis *Brain Behav Immun*. 2013 Feb;28:159-69. doi: 10.1016/j.bbi.2012.11.007. Epub 2012 Nov 29.
40. Alter HJ, Mikovits JA, Switzer WM, Ruscetti FW, Lo SC, **Klimas N**, Komaroff AL, Montoya JG, Bateman L, Levine S, Peterson D, Levin B, Hanson MR, Genfi A, Bhat M, Zheng H, Wang R, Li B, Hung GC, Lee LL, Sameroff S, Heneine W, Coffin J, Hornig M, Lipkin WI. A multicenter blinded analysis indicates no association between chronic fatigue syndrome/myalgic encephalomyelitis and either xenotropic murine leukemia virus-related virus or polytropic murine leukemia virus. *MBio*. 2012 Sep 18;3(5). pii: e00266-12. doi: 10.1128/mBio.00266-12. Print 2012.
41. Broderick G, Katz BZ, Fernandes H, Fletcher MA, **Klimas N**, Smith FA, O'Gorman MR, Vernon SD, Taylor R. Cytokine expression profiles of immune imbalance in post-mononucleosis chronic fatigue. *J Transl Med*. 2012 Sep 13;10:191. doi: 10.1186/1479-5876-10-191.
42. Fletcher MA, Barnes Z, Broderick G, **Klimas NG**. Psychoneuroimmunology and natural killer cells: the chromium release whole blood assay. *Methods Mol Biol*. 2012;934:313-24. doi: 10.1007/978-1-62703-071-7\_16.
43. Broderick G, Fletcher MA, Gallagher M, Barnes Z, Vernon SD, **Klimas NG**. Exploring the diagnostic potential of immune biomarker coexpression in Gulf War Illness. *Methods Mol Biol*. 2012;934:145-64. doi: 10.1007/978-1-62703-071-7\_8.
44. **Klimas NG**, Broderick G, Fletcher MA. Biomarkers for chronic fatigue. *Brain Behav Immun*. 2012 Nov;26(8):1202-10. doi: 10.1016/j.bbi.2012.06.006. Epub 2012 Jun 23.
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Articles in popular press:

Klimas NG Expert on Chronic Fatigue Syndrome for New York Times November 2009 – present host of the NY Times CFS focus blog.

Klimas, NG “Could a Virus be the Cause of Chronic Fatigue Syndrome?” *MS Magazine* January 2010

Klimas, NG. “Wake-Up Call. Hopeful new research shows that chronic fatigue syndrome may have a genetic basis”. *Ms. Magazine*, summer issue, 2006.

Invited Lectures (last 10 years)

ME/CFS Miami Support Group, Nova Southeastern University, Fort Lauderdale, FL November 26, 2018

CDC Contractual Meeting: CFS Multisite Clinical Assessment Study CDC Roybal Campus, Bldg. 19 Global Communications Center, Room 245/246 October 22-23, 2018

Medscape CDC ME/CFS: Roundtable Taping - Myalgic Encephalomyelitis/Chronic Fatigue Syndrome: A Primer for HCPs; Emory Conference Center Hotel, 1615 Clifton Road, Atlanta, GA 30329 August 31, 2018

Research Advisory Committee Meeting Intercontinental Mark Hopkins 999 California Street, San Francisco CA 94108 June 25 - 26, 2018

The 9th Conference of the International Coenzyme Q10 Association Faculty House, Columbia University, West 116th Street, New York, on June 21-24, 2018

Society for Epidemiologic Research Annual Meeting and GWWC Study annual meeting Baltimore, Maryland Inner Harbor June 19-22, 2018

Updates in Medicine 2018: Genomics; Margaritaville Hollywood Beach Resort 1111 North Ocean Drive Hollywood, FL 33019 June 1 – 3, 2018

The Montreal 2018 Canadian Collaborative Team Conference on ME/CFS: Advancing an International Research Agenda to Address ME/CFS Research Priorities; *From Biomarkers and modeling to implemented targeted clinical trials: Comparison between Gulf War Illness and ME/CFS*; CHU Sainte-Justine's Hospital Montreal, Canada May 3-5, 2018

ME/CFS Miami Support Group, Nova Southeastern University, Fort Lauderdale, FL April 23, 2018

Gilda's Club 16th Annual Day of Research and Hope Conference at Nova Southeastern University Carl Desantis Building Fort Lauderdale, FL; Solve ME/CFS Presentation; April 21, 2018

American College of Osteopathic Pediatricians (ACOP) and AAP Section on Osteopathic Pediatricians (AAP SOOPe) 2018 Joint Conference Fort Myers, Florida at the Sanibel Harbour Beach Marriott Resort & Spa; April 13, 2018

NIH-VA GWI Deep Phenotyping Study Meeting Washington D.C., Maryland March 26 – 27, 2018

Research Advisory Board Meeting and Gulf War Illness Field Base Meeting Department of Veteran Affairs; Nova Southeastern University Center for Collaborative Research Fort Lauderdale, FL; March 19 – 21, 2018

ME/CFS Clinician Think Tank at the Bateman Horne Center Salt Lake City, Utah; March 2 – 3, 2018

External Advisory Board Meeting for Gulf War Illness Intervention Consortium Fort Detrick, Maryland; November 27 – 28, 2017

Research Advisory Committee on Gulf War Veterans' Illnesses Meeting Department of Veterans Affairs, 810 Vermont Ave. Washington D.C. 20420 (Sonny Montgomery Room 230); October 30, 2017

GWVI Field Based Meeting: Bridging the Gap between Basic Research and Clinical Treatment of Multi-Symptom Disorders as it pertains to GWVI; Department of Veterans Affairs Palo Alto, California; September 22nd, 2017

Meeting of the Research Advisory Committee on Gulf War Veterans' Illnesses Department of Veterans Affairs; GWI Treatments: Update on CoQ10 and Rituximab Trials; InterContinental Mark Hopkins, San Francisco, CA; August 1, 2017

NIH Quantitative Systems Pharmacology and Drug Discovery: Filling the Gaps in Current Models of the R&D. Title: Biomarkers, modeling and therapeutic targets: The CFS/ME and GWI Story. Bethesda North Marriott Hotel & Conference Center, July 26, 2017

Seventh International Biomedical Research into ME Colloquium; Genetic Signature Study-Presenter; London, United Kingdom; June 2, 2017

NIH: Chronic Fatigue Syndrome Special Interest Group meeting, Bethesda, MD April 12, 2017

The Chronic Fatigue Syndrome Special Interest Group meeting, Bethesda, MD, April 12, 2017 Mitochondrial Dysfunction: A Potential Etiology for ME/CFS? Speaker Panelist; 12th IACFS/ME International Conference, Ft. Lauderdale, FL, October 28, 2016

Difficult Clinical Cases: Focus on Fatigue and Pain, Session Chair; 12<sup>th</sup> International IACFS/ME International Conference, Ft. Lauderdale, FL, October 28, 2016.

Modeling strategies to identify therapeutic targets in ME/CFS and GWI, Japanese Institute for Neuroscience National Conference, University of Tokyo, Japan October 2016

Gender differences in Gulf War Illness: VA GWI Research advisory committee, Jan 5 2014

Research advances in ME/CFS Patient conference, NYU, NYC November 15, 2013

Treating Chronic Fatigue Syndrome/ ME and Gulf War Illness, Pri-Med Conference 2012 Miami, FL

Grand Rounds lecture, Endocrine issues in CFS/ME and GWI University of Miami Medical School October 2011



“What’s new? Pathogenesis and Treatment 2011” IACFS/ME 10th International Conference, Ottawa, Canada September 19, 2011

Difficult Case Presentations Chair and panelist, IACFS/ME 10th International Conference, Ottawa, Canada September 19, 2011

Death and Dying, Physician/Patient presentation FIU School of Medicine, March 2011, Miami FL

Immune mechanisms of autoimmune diseases: pathogens, self, and chronic disease. FIU College of Medicine, March 2011

“Gene Expression change in exercise challenge in CFS/ME and GWI”, Opening lecture International Science Symposium On Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS) BOND UNIVERSITY Queensland, Australia December 3 and 4 2010.

8 lecture tour, New Zealand November 2010: Research advances and clinical management of CFS/ME Nov 19 – 30, 2010, Dunedin College of Medicine, and 7 other sites.

Immunology and Biomarker Discovery in ME/CFS. INVEST in ME Science International Science Symposium London, England June 8 2010

Advances in our Understanding of Chronic Fatigue Syndrome, Pri-Med conference Ft Lauderdale Florida Feb 2010

Treatment based on pathogenesis – advances in our understanding of CFS, Fatigue Sciences Conference Calgary Canada Sept 2009

Keynote address (opening) “Immunology of Fatiguing Disorders” 3<sup>rd</sup> International Conference on Fatigue Science, Okinawa, Japan September 3<sup>rd</sup>, 2008

Keynote Address “Research Advances in CFS and ME” Canadian Conference on Fatigue and Illness, Calgary, Alberta Nov 12, 2008

“Biomarker Discovery in CFS” 8<sup>th</sup> annual TMJ Conference Rockville, MD, May 12, 2008

"Research Advances in CFS/ME" Invited lecture Western Pharmacologic Association Kona, Hawaii Jan 29, 2008

Keynote address: Understanding the interactions of the Immune system and the brain in CFS; International CFS/ME Clinical Conference, Oslo, Norway October 8, 2007

Evidence Based Treatment Approaches in CFS/ME; International CFS/ME Clinical Conference, Oslo, Norway October 8, 2007

Advances in our understanding of the immunology of CFS; Keynote 2<sup>nd</sup>International Conference on ME/CFS Biomedical Research, May 25, 2007 Edinburgh, Scotland.

Diagnosis and Management of CFS, Feb 23, 2007 PRIMCARE conference Ft Lauderdale FL, Research Updates, ME/CFS February, 2007, Madrid and Barcelona, Spain, Universad de Catalonia, series of talks to clinicians and patients “

Presidential Address, "New Directions in CFS/ME Research" IACFS/ME 8<sup>th</sup> annual International Research and Clinical meeting, Ft. Lauderdale, FL January 12, 2007.

The Diagnosis and Management of ME/CFS, a series of 10 talks to professionals and patients, across the country September, 2006, New Zealand

The Immunology and Genomics of Gulf War Illness – August 14, 2006 GWI Research Advisory Council, Washington, DC

Research Methodology in Fatiguing Illnesses Keynote Address Aviano, Italy: 1st International Meeting on Chronic Fatigue Syndrome and Cancer-related Fatigue May 5th 2006

Chronic Fatigue Syndrome: From Genomics to Treatment: Keynote Address, Connecticut ME Association Regional Conference, April 30, 2006 Hartford CT

CFS In the Veteran Population: Best Practices in the Continuum of Care: Management of Infectious Disease Little Rock AR. April 26, 2006

Clinical Management of CFS - PANDORA Conference, West Palm Beach, FL Oct 27, 2005

Research Advances in CFS – Keynote Address , OFFER Regional Conference, Salt Lake City ,Utah 4/16/05

Impact of Research Advances on Clinical Management of CFS – Keynote, OFFER Patient Conference, Salt Lake City, Utah 4/16/05

Research Advances in CFS – Keynote Address , CFIDS Asso Regional Conference, Charlotte, NC Nov 13, 2004

Gene Array Technology in CFS – the C<sup>3</sup> Computational Challenge, Cold Spring Harbor, Oct 2005

Immunomodulatory therapies – a review, South Florida Allergy Journal Club, 11/04

CFS – advancing knowledge impact on management, Keynote, AACFS Intl Clinical Conference, Madison Wisconsin 10/04

CFS Pathogenesis Keynote address, Specialization Course on Fibromyalgia and Chronic Fatigue Syndrome International University of Catalonia Barcelona, Spain May 29, 2004. Honorary degree awarded.

Management of CFS Keynote Address, PANDORA Providers and Patient Conference, Ft Lauderdale Fl. May 11, 2004

The Diagnosis and Management of CFS NMA 2003 Annual Convention and Scientific Assembly, Philadelphia, August 2003

Immune Methodologic Issues, invited speaker NIH CFS Methodology Workshop June 2003, Bethesda, MD

CFS and Fibromyalgia – Diagnosis and Management NPACE, May 2003 Orlando Fl

CFS: What we know, what we need to know, and how to get there. New Jersey Medical Association, New Brunswick. May 2003

CFS: What we know, what we need to know, and how to get there., Regional Primary Care Conference Salt Lake City May 2003

CFS – Somatic or Physical? A Debate, Intl Behavioral Medicine Asso, Helsinki, Finland August 2002

Instruments and Design of an Empiric Case Definition Study, CDC CFS Case Definition Workshop, Calloway Gardens, May 2002

Diagnosis and Management of CFS, National American Medical Women's Association Conference, San Antonio, TX Jan 2002

Inclusion and Exclusion Criteria, CDC CFS Case Definition Workshop, Calloway Gardens, May 2001

Immunology of Chronic Fatigue Syndrome, State of the Science Meeting, NIH, October 2000

Current Understanding of CFS Pathogenesis, NIH/CFS Research Priorities Series – Autonomic Dysfunction Conference, October 2000; Neuroendocrine Abnormalities, February 2001; Immunology Conference October 2001

Immune Restoration Post Antiretroviral Therapy, Guest lecturer, Hollywood Memorial Hospital; Baptist Hospital; Mercy Hospital; Broward General Hospital; VAMC, Nashville Tennessee;

Mobile, Alabama; Key West Florida; Jan – April 2005

Global Impact of HIV on Women, National Organization for Women's Global Women's Health Conference, Washington DC June 2001

Housestaff/Medical Student lectures (given regularly throughout all academic years):  
Anaphylaxis; Asthma; Immune Modulatory Therapies; Global Impact of HIV; Immune restoration in HIV infection; Hepatitis C; Hepatitis C; HIV Co-infection; Death and Dying – the Clinician's role; Chronic Fatigue Syndrome; Gulf War Syndrome; Psychoneuroimmunology; Stress and Disease.

Graduate Studies Lectures: Multidisciplinary Clinical Research; Immunology 101; Psychoneuroimmunology and disease; Pathogenesis of HIV/AIDS; Chronic Fatigue Syndrome

Undergraduate Lectures: Careers in clinical research, Death and Dying

### Other Works and Publications

#### Reports

1. IOM (Institute of Medicine). 2015. Beyond myalgic encephalomyelitis/chronic fatigue syndrome: Redefining an illness. Washington, DC: The National Academies Press.

#### Letters to the Editor

1. Klimas, N.G. and Fletcher, M.A. Chronic Fatigue Syndrome. JAMA, 1991.
2. Klimas, N.G., Blaney, N., Morgan, R. and Fletcher, M.A. Methadone and Immune Function, Amer. J. Med. 92:114115, 1991.

#### Editorials

Klimas, N.G. and Patarca, R. The birth of a journal. J. Chronic Fatigue Syndrome. 1:1-2, 1995.

### Abstracts and Presentations at National and International Meetings

1. Rajeev Jaundoo, Jonathan Bohmann, Gloria Gutierrez, **Nancy Klimas**, Gordon Broderick, and Travis Craddock: Structure-Based Repurposing of FDA-Approved Drugs to Identify Specific Small Molecule Inhibitors of TNF-alpha and IL2.

2. Kristina Gemayel, Kelly Gaunt, Ana Del Alamo, Melanie Perez, Irma Rey, Lubov Nathanson, Maria Vera-Nunez, and **Nancy Klimas**: Symptomology in Patients Enrolled in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Gene Study.
3. Kelly Gaunt, Kristina Gemayel, Ana Del Alamo, Melanie Perez, Irma Rey, Lubov Nathanson, Maria Vera-Nunez, and **Nancy Klimas**: ME/CFS Genes Study: Using Social Media as a Participant Recruitment Tool for a De-Identified Subject Population Genetic Database
4. Maria Vera-Nunez, Sophie Chen, and **Nancy Klimas**: Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Patients' Attitudes Towards the use of Web-based, Self-report Instruments for Clinical Evaluation.
5. Stephen G. Grant, Jean J. Latimer, Stefanie Sveiven, Mary Ann Fletcher and **Nancy G. Klimas**: Persistently Elevated Bone Marrow Somatic Mutation as a Biomarker of Clinically Relevant Exposures in Gulf War Illness.
6. Ramesh Govindan, Zachary Barnes, Y. Jo, R. McKean, J.M. Harvey, Travis Craddock, **Nancy Klimas**, Gordon Broderick, Mary Ann Fletcher: Seeking a Quantitative Method to Determine HHV-6 IgG Antibody Levels Using Qualitative ELISA.
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8. Mary G. Jeffrey, Lubov Nathanson, Zachary Barnes, Mary Ann Fletcher, **N.G Klimas**, Gordon Broderick, Travis Craddock: Gene Expression Modules in Chronic Fatigue Syndrome: Interactions of the Inflammatory and Immune System
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116. **Klimas, NG** , speaker: Methodologic Issues Seminar \_ NIH/CFIDS Workshop on Neuroendocrine Dysfunction and CFS, Nov 2001, Washington DC
117. **Klimas, NG** , speaker: Methodologic Issues in the Study of CFS – NIH/CFIDS Association Workshop on Immune Dysfunction and CFS, Feb 2002
118. **Klimas, NG** , speaker: Adherence to Therapy Seminar, 26<sup>th</sup> International Behavioral Medicine Society Conference, Helsinki, Finland, August 2002

119. **Klimas, NG**, debater participant: CFS – physical or somatic disorder? 26<sup>th</sup> International Behavioral Medicine Society Conference, Helsinki, Finland, August 2002
120. **Klimas, NG** , speaker : Methodologic Issues – Immunology of CFS; NIH State of the Science Meeting, Bethesda, MD, May 2003
121. **Klimas NG** and Turgeli, E Assessment Tools in CFS, AACFS Intl Conference Madison Wisconsin, October 2004
122. Jeffrey Greeson, Maria Llabre, **Nancy Klimas**, Peter Lawrence, Alex Gonzalez, Pedro Martin, Neil Schneiderman, Barry Hurwitz Psychological Distress and HIV Disease Progression: Role of Natural Killer Cell Immunity; 2005 Annual Meeting of the American Psychosomatic Society, March 2-5, in Vancouver, Canada
123. Elevations of HHV-6 serology are associated with low NK cell Function, **Nancy Klimas**, Mary Ann Fletcher, Kevin Maher. International Conference on HHV6 Infection, Barcelona Spain May1-3, 2006.
124. **Klimas, NG** and Fletcher MA Neuropeptide Y in CFS and GWI, IACFS International Conference, Fort Lauderdale 2007
125. Vera, M, **Klimas, N**, Garcia L., Fletcher MA Isoprinosine in CFS (presentation) IACFS/ME Research Conference Reno Nevada, March 2009
126. Garcia, L, **Klimas N**, Fletcher MA Incidence of sleep disorders in CFS sample. IACFS/ME Research Conference Reno Nevada March 2009.
127. Broderick G, Fletcher MA, Vernon SD, **Klimas N**, 2009, Isolating Characteristic Immune Signals under Challenge in Gulf War Illness. Int Assoc CFS/ME, Reno, NV, March 12-15: Oral session Abstracts/ Latest Research in Immunology, abstract #3.
128. Fletcher MA., Ironson, G, Antoni, M, Hurwitz, **Klimas N**. Neuropeptide Y (NPY) correlates with symptom severity in chronic fatigue syndrome. 9<sup>th</sup> International IACFS/ME Research and Clinical Conference. Reno, NV. March 2009.
129. Fletcher MA, **Klimas NG** and Broderick G. Neuroimmune biomarkers in CFS. From infection to Neurometabolism: a nexus for CFS, a NIH sponsored workshop. Banbury Center, Cold Springs Harbor Laboratory, Long Island, NY. September, 2009 .
130. **Klimas NG**, Fletcher MA and Broderick G. Immunologic biomarkers for CFS/ME. 5th Annual Invest in ME/CFS Conference in London, 24 May 2010.
131. Katz B, Fletcher MA, Smith FA, Taylor R, Vernon SD, Broderick G. 2010. Cytokine Expression as a Potential Prognostic Indicator in Post-infectious Fatigue. Cytokines 2010;



52(1-2): SS11-7, 81.

132. Fletcher MA, **Klimas NG** and Broderick G Biomarkers for Chronic Fatigue Syndrome and Gulf War Illness, International Science Symposium on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Bond University, Queensland. Australia. 3-4 December 2010.
133. Fletcher MA, **Klimas NG**. Biomarkers in CFS/ME and GWI. IACFS/ME conference. Ottawa, September 22 -25, 2011.

5c. Research (Past 5 years):

Funded:

- |  |                              |                  |
|--|------------------------------|------------------|
| DoD  | 9/30/2018-9/29/2022          | \$7,999,907      |
| “The Gulf War Illness Clinical Trials and Interventions Consortium (GWICTIC)” Role: PI   |                              |                  |
| DoD  | 10/01/2017-09/30/2020        | \$784,374        |
| “The Use of B-Cell Depletion Therapy (BCDT) in Gulf War Illness: A Phase 1/2 Study” Role: PI   |                              |                  |
| VA Foundation  | 09/01/2017-04/30/2020        | \$163,427.83     |
| “Measurement of Biomarkers in Samples Collected in a Coenzyme Q10 Treatment Trial in Gulf War Illness and Control Subjects.” Role: PI                                      |                              |                  |
| DoD  | October 2017- September 2020 | \$556,831        |
| Genomics approach to find gender specific mechanisms of GWI pathobiology”<br>Lubov Nathanson, PI, Nova Southeastern University; Role: CO-I                                 |                              |                  |
| DoD  | October 2017- September 2020 | \$556,831        |
| “Growth Hormone-Releasing Hormone (GHRH) Antagonist: Evaluation of Beneficial Effects for Gulf War Illness” Luis Salgueiro, Nova Southeastern University, FL; Role: Co - I |                              |                  |
| DoD  | October 2017- September 2020 | \$825,612        |
| “The Use of B-Cell Depletion Therapy (BCDT) in Gulf War Illness: A Phase 1/2 Study” Role: PI   |                              |                  |
| DoD  | September 2017- April 2020   | \$163,427.83     |
| “Measurement of Biomarkers in Samples Collected in a Coenzyme Q10 Treatment Trial in Gulf War Illness and Control Subjects.” Role: PI                                      |                              |                  |
| VA Merit   | July 2016- June 2019         | \$1,029,000/year |
| “A Randomized, Double-blind Placebo-controlled Phase III Trial of Coenzyme Q10 in Gulf War   |                              |                  |

Illness” Role: PI

DoD                    September 2016- September 2019                    \$581,742  
“Persistently elevated somatic mutation as a biomarker for clinically relevant exposures in GWI”  
Stephen Grant, PI, Nova Southeastern University; Role Co-I

DoD                    September 2016- September 2019                    \$657,889  
“Improving Diagnostics and Treatments for GWI Females by Accounting for the Effects of  
PTSD” Travis Craddock, PI, Nova Southeastern University; Co- I

DoD                    September 2016- September 2019                    \$593,318  
“Disentangling the Effects of PTSD from GWI for Improved Diagnostics and Treatments”  
Travis Craddock, PI, Nova Southeastern University; Co- I

NIH                    April 2016-March 2018                    \$182,520  
“Male-specific genomic mechanisms of transcriptional regulation of ME/CFS/SEID”  
Lubov Nathanson, PI, Nova Southeastern University; Role Co-I

DoD                    June 2015-June 2019                    \$560,000  
“Testing the Model: A Phase I/II Randomized Double Blind Placebo Control Trial of  
Therapeutics: Liposomal Glutathione and Curcumin.” Role: PI

NIH R15              April 2015- March 2018 (NCE 9/31/2019)                    \$320,000  
“Genomic Approach to Find Novel Biomarkers and Mechanisms of CFS/ME”  
Lubov Nathanson, PI, Nova Southeastern University; Role: CO-I

DoD                    09/30/2015 – 09/29/2019                    \$810,000  
High Fidelity Design of Multi-modal Restorative Interventions in Gulf War Illness  
Broderick/ Whitley; Nova Southeastern University, FL; Role: Co -I

VA Merit              08/01/2015 – 08/01/2019                    \$2,030,000  
A Translational Medicine Approach to Gulf War Illness: From Cells to Therapy  
Role: PI

VA Merit GWI              07/01/2016 – 06/30/2019                    \$1,029,000  
A Randomized, Double-blind Placebo-controlled Phase III Trial of Coenzyme Q10 in Gulf War  
Illness  
Role: PI

Past Funding:

NIH August 2015-July 2016 \$766,133  
 “Microbial Discovery and Immunity in ME/CFS” Role: PI

DOD June 2015-June 2018 \$805,000  
 “An integrated genomics and cell biology approach to correlate novel GWI indicators of infections and neuro-inflammatory mechanisms with targeted drug therapy”  
 Paula Waziry, PI, Nova Southeastern University; Role- CO-I

VA Merit July 2014-July 2018 \$450,000/year  
 “Gender Differences in GWI and Dynamic Modeling” Role: PI

NIH RO1 August 2014 – July 2018 \$450,000/year  
 “Gender Differences in CFS/ME and Dynamic Modeling” Role: Co-PI

DOD September 2013-September 2017 \$4,100,000  
 Gulf War Illness Consortium “Understanding GWI: An Integrative Modelling Approach”  
 Mariana Morris, PI, Nova Southeastern University; Role: Co-PI, Clinical Core PI

DOD September 2014-September 2017 \$190,000  
 Gulf War Illness Consortium “Brain Immune Interactions as the basis for GWI”,  
 Kim Sullivan, PI, Boston University; Role CO-I

CDC Contract:  
 Developing a clinical data base for longitudinal studies in CFS  
 Role site PI, coinvestigator  
 \$230,000/year Start date May 2012, 5 year contract

NIAID RO1 October 2010 – September 2015  
 "Genetic pathway Analysis in ME/CFS" 450,000/year 4 years with one year extension South  
 Florida Veterans Foundation for Research and Education Role: PI

NIH RO1 2010 – 2015  
 “Virtual platforms for CBT in CFS/ME” Mike Antoni, PI, University of Miami; Role: Co-PI

NIAID R21 2011- 2015  
 “Microbial Translocation in ME/CFS” Mary Ann Fletcher, PI, Nova Southeastern University;  
 Role-CO-PI

NIAID RO1 (2011-2012)  
 “The role of XMRV in CFS” PI, Ian Lipkin, Columbia University

Role: National Clinical Core Coordinator and Miami site PI 2 year study local budget \$125,000

DOD 6/2009 – 6/2011, no cost extension through June 2013

"The Use of Comprehensive Molecular Profiling with Network and Control Theory to Better Understand GWI and Model Therapeutic Strategies" Award Number W81XWH-09-2-0071, \$500,000 (direct costs total over 3 years) Role: PI

R01AI065723 - 01 12/1/06 – 11/30/11, no cost extension through 11/30/12

Immunologic Mechanisms, Biomarkers and Subsets in CFS

NIAID (PI MA Fletcher)

Goal of this project is to determine the immunologic basis for CFS pathogenesis

Role: Co-PI

CFI (Chronic Fatigue Initiative): A Clinical and Biosample Database to Enable Discovery of Pathogens and Pathogenic Mechanisms in ME/Chronic Fatigue Syndrome,

Role: PI Funding approx \$1,400,000 over 2 years. 2/2011- 2/2013

R21: 12/01/2008 – 12/31/2011 (continuation year)

Neuropeptide Y and dipeptidyl-peptidase IV (CD26) in chronic fatigue syndrome

NIAAA (PI MA Fletcher)

Goal of this project to determine the relationship of neuropeptide Y and dipeptidyl-peptidase IV to natural killer cell cytotoxicity in CFS.

Role: Co-PI, R21AA016635-01

Merit Review 11/05 – 11/10

Longitudinal follow up of GWI and CFS patients

Veterans Administration

Study of immune function and clinical symptoms in patients with Gulf War Illness.

Role: PI

Merit Review 9/06 -8/10

Gene Array Analysis of Gulf War Illness and Chronic Fatigue

Veterans Administration

Gene Array Analysis of Gulf War Illness and Chronic Fatigue Syndrome

Role: PI

Foundation Research grant 03/07 – 03/09

Mechanisms of Cytotoxic Cell Dysfunction in CFS

CFIDS (PI N Klimas)

Study of killer cells in CFS

Role: PI, 15% UM effort

R01MH066697 09/04/03-6/30/08

Psychobiological Processes and Health in HIV/AIDS

NIMH R01 (PI G. Ironson)

This grant examines psychological and biological (CTL, NK, cortisol) predictors of disease progression in HIV/AIDS.

Role: Co-I. 5% UM effort

R01 9/30/06-8/31/10

Virtual Cognitive Behavioral Therapy in Chronic Fatigue Syndrome

NIMH (PI M Antoni)

Evaluate CBT utilizing phone and web based interventions

Role: Co-I, 5% UM effort

NIH sponsored Clinical Trial 2000 - 2009

Immune Restoration with IL-2 in HIV infection – the ESPRIT study

Role: Site PI

RO1 HL72712 09/30/02-08/31/07

HIV/HCV Co-Infection: HAART and CVD Pathophysiology

NIH/NHLBI (PI Hurwitz)

Role: Co-I

5d. Editorial Responsibilities:

Founding Editor: Journal of Chronic Fatigue Syndrome

Haworth Press (1992-2001)

Editorial Board, Journal of Chronic Fatigue Syndrome (2001 – current)

Ad hoc reviewer, NEJM

Ad hoc Reviewer, Journal of Clinical Immunology

Ad hoc Reviewer, JAMA

Ad hoc Reviewer, Annals of Internal Medicine

Ad hoc Reviewer, AIDS

Ad hoc Reviewer, JAIDS

Ad hoc Reviewer, Psychosomatic Medicine

Ad hoc reviewer, Brain Behavior and Immunity

Ad hoc reviewer, PLoS one

Ad hoc reviewer, Psychoneuroimmunology

5e. Professional and Honorary Organizations:

International Association for CFS/ME (previously AACFS), President 2003-2009

International Academy of Behavioral Medicine

Fellow, Academy for Behavioral Medicine Research

International Association of Psychoneuroimmunology  
American Society for the Advancement of Science;  
Association of Medical Laboratory Immunologists  
Clinical Immunology Society  
Association of Women in Science;  
American Medical Woman's Association  
University of Miami Medical Women  
Florida Medical Association'  
Dade County Medical Association  
Gauze Ceiling Coalition (Miami Dade County Medical Women)

5f. Honors:

2016- World Class Faculty Award recipient by the Greater Fort Lauderdale Alliance  
2015 - NSU Fifth Annual Provost's Research and Scholarship Award  
2013 – IACFS/ME Perpich award for contributions to the field  
2011 – IACFS/ME Nelson Gantz Memorial Award for distinguished clinical service  
2011 - NOW Foundation's second annual Victoria J. Mastrobuono Women's Health Award  
2011 - Distinguished Alumni Award, University of Miami Medical Alumni Association  
2010 - May A Brunson Award for Achievement University of Miami Women's Commission  
2009 – Award named to honor research achievements “Nancy Klimas Research Excellence Award” awarded annually at the IACFS/ME Research Conference  
2004 – Honorary Degree, University of Catalonia, Barcelona Spain.  
1998 - Fellow Academy for Behavioral Medicine Research  
1992 Iron Arrow (University of Miami Honor Association)  
1985 American Cancer Society Institutional Research Award  
1984 National Research Service Award  
1983 Southern Medical Association Research Award  
1982 Finalist Beecham Award, Southern Blood Club  
1982 Finalist BurroughsWellcome Young Investigator Award

5g. Other Professional Activities:

Miami VAMC AIDS Clinical and Research Unit Developed and wrote the proposal for the Miami VAMC AIDS Clinical and Research Unit, which was one of 3 selected for funding. The proposal included 3 million dollars in construction funds as well as infrastructure support. This resulted in one of the top VA HIV/AIDS clinical and research programs in the US, which is still in operation. Dr Klimas is Director of AIDS Research and Co-director of the Clinical HIV/AIDS program at the Miami VAMC. 1987 to present

South Florida CFS and GWI Research Center : Initially funded with an NIH center grant (Klimas, PI), and since supported with NIH , VA, DOD, and private foundation grants, the center

is a clinical , translational, and basic science center that integrates research across disciplines. Current studies include genomics, immune, neuroendocrine studies , a natural history study, and clinical trials. Dr. Klimas is Center PI and coordinates the research efforts of four research interdisciplinary groups.

Canadian Government advisor in the development of the Clinical Case Definition for Chronic Fatigue Syndrome/Myalgic Encephalitis 2001, which is being revised in 2008.

6 month deployment CDC 2001 –, Molecular Epidemiology Program Viral Exanthems and Herpesvirus Branch, Developed the international protocol currently underway to empirically define CFS.

#### IACFS/ME

Dr. Klimas served as President of the International Association for Chronic Fatigue Syndrome (A national professional organization of investigators and clinicians) from 2005-2007 and was re-elected for another 3-year term in January of 2007. She organized the IACFS conference in Fort Lauderdale in January, 2007, and the conference in Reno Nevada in March 2009. Each of these conferences were attended by 400 patients and 350 professionals, and provided a unique opportunity for patients to meet and talk with leading international researchers and clinicians.

#### CFSAC: Chronic Fatigue Syndrome Advisory Committee

In 1996, Secretary for Health Donna Shalala chartered a special committee to advise the Department of Health and Human Services (DHHS) on policy regarding chronic fatigue syndrome (CFS), also known as chronic fatigue and immune dysfunction syndrome or CFIDS or Myalgic Encephalomyelopathy (ME). This committee, known as the DHHS Chronic Fatigue Syndrome Coordinating Committee (CFSCC), brought together officials representing various health agencies together with seven appointed members of the public to improve coordination of federal CFS programs. A year 2000 review of federal activities on CFS conducted by the General Accounting Office prompted several changes. Among them was the replacement of the CFSCC with a standing committee, the CFS Advisory Committee (CFSAC), whose structure more closely matched other DHHS advisory bodies. Secretary Michael Leavitt most recently renewed the charter on August 30, 2006. Nancy.Klimas served on this committee from 1997 to 2000. She was reappointed to another three-year term on the committee in 2007, which has been extended to 2011. She chairs the quality of life and education subcommittees.

NSU COM Institute for Neuro-Immune Medicine: A newly conceived program using clinical care templates to help diagnose and manage complex CFS/ME cases while collecting research data and developing the patient base for clinical trials work. Working with a basics science pathogenesis team, a computational biology team and a biomarkers discovery group, the institute merges clinical care with scientific discovery to promote new knowledge that can be applied to clinical care through rapidly employed translational clinical trials.

#### 5h. Consultantships

1987 1990 VA National AIDS Steering Committee

1987 1990 VA National AIDS Research Subcommittee

1987 1991 VA Train the Trainer National AIDS Education Program

1988 Present VA National AIDS Prevention and Counseling Training Program

1988 Present Special Review Committee, National VA AIDS Prevention and Education

1990 – 2000 VA National HIV Therapeutics Advisory Committee

1991 2000 Board of Directors, American Association for Chronic Fatigue Syndrome (An international professional organization of investigators and clinicians).

2002 – 2006 Board of Directors, International Association for Chronic Fatigue Syndrome/ME (An international professional organization of investigators and clinicians).

1992 - Chairperson of the Program Committee for the First International Meeting: Chronic Fatigue Syndrome, held in Albany NY, sponsored by the AACFS, NIH and CDC.

1994 - Local Coordinator and Program Committee member for the Second International Meeting: Chronic Fatigue Syndrome research Conference, held in Ft Lauderdale, October 1994, sponsored by AACFS, NIH, CDC, and Univ. of Miami.

1994 - Chairperson of the Program Committee for the CFS Clinical Conference, held in Ft. Lauderdale, October 1994, sponsored by AACFS.

1991 1997 Consultant to Center for Special Immunology, Inc., Ft. Lauderdale, FL.

1993 - 2000 - Board of Directors, American Association for Chronic Fatigue Syndrome.

1993- Present Medical Advisory Board, Chronic Fatigue and Immunodeficiency Syndrome Foundation.

1993- 1998 - Medical Advisory Board, Environmental Health Foundation.

2000 NIH State of the Science CFS Conference planning committee

2001 – present Name Change subcommittee, HHS CFS coordinating Committee

1999-present – CDC CFS Case Definition Revision Committee



2001 Canadian CFS Clinical Case definition expert panel

2001 CDC Expert Advisory Panel – long term outcomes study

2002 – present NIH reviewer and site visitor GCRC applications

2001- present Ad Hoc reviewer, Medical Research Council, United Kingdom.

2003 –present NIH reviewer CFS Special Emphasis Panel

2003 Brighton Collaboration on CFS Case Definition

2003 Elected to the Board of Directors, AACFS, 7 year term

2005 - 2009 President of the International Association for Chronic Fatigue Syndrome – this international organization of investigators and clinicians sponsors international and regional meetings, has developed a peer review journal, and works with government and regional groups to develop curricula and provider education programs.

2007 – 2012 CFSAC HHS Advisory committee to the Secretary of Health and Human Services

2008-2010 Chair HHS CFSAC subcommittee on Education

2010 – 5/2012 Chair, HHS CFSAC subcommittee on Quality of Life and Education

2010 International CFS/ME Case Definition working group,

2011 CFIDS Association of America Scientific Advisory Board

2011 Chronic Fatigue Initiative national coordinator, clinical sites.

2012- present Nova Southeastern University Research Advisory Committee

2011- present Nova Southeastern College of Osteopathic Medicine Research Committee

2013 – Research Advisory Committee for Gulf War Illness, VA Health care Systems

2013 - Institute of Medicine CFS Committee reviewing case definition and name

2013 - NIH Advisory Committee P2P program to develop research priorities in CFS/ME related research

5i. TEACHING

Teaching Award:

Woman Faculty Member of the Year, 1989, UM Medical Women.  
May Brunson Award, Woman Faculty Member of the Year, University of Miami 2010  
(University of Miami Women's Commission)

Recent Teaching Responsibilities:

Housestaff, Graduate Program, Medical School and Undergraduate lecturer (see lectures listed above)

General topics:

Clinical Immunology, Medical Laboratory Immunology, HIV Infection, Health and Human Values: Psychoneuroimmunology, Allergy and Immunology, CFS, Gulf War Illness, Stress and Disease.

Internal Medicine, Ward Attending, VA Medical Center (3 months/ year)

Allergy Clinic rotations for medical students, housestaff and Harrington Latin American Scholars.

HIV and Immunology rotations for medical students, housestaff and Harrington Latin American Scholars

Nationally/Internationally consulted in the development of CME course work for clinicians in the diagnosis and treatment of CFS in collaboration with the CDC and CFIDS Association of America

Dissertation Advising:

Masters and Doctoral Students in University of Miami Psychology program (9 PhD candidates/3 MS candidates over last 5 years)

6. SERVICE TO THE UNIVERSITY

6a. University of Miami and VAMC Committees:

1. Medical School Admissions Committee, 1984-1987.
2. VA Human Subjects IRB, 1987.
3. Faculty Sponsor, UM Medical Women, 1985-2011
4. UMHC Infection Control Committee, 1989-1992.
5. VAMC Research Space Committee, 1988-1989.
6. VA Research and Education Foundation Board of Directors – 1999- present

7. UM Search Committee - AIDS/HIV senior and junior research faculty 2004-2011
8. Selection Committee – applicants for AAMC Women in Medicine Leadership Program
9. Executive Committee, GCRC 2002 – 2009
10. Executive Committee, Behavioral Medicine Research Center, 1999 - 2011
11. University of Miami Committee on Rank Salary and Conditions of employment 2003-2004
12. VA Research Committee, alternate 2004-present
13. UM Faculty Senate Professional Conduct Panel 2003 – 2011
14. University of Miami Miller School of Medicine Self Study LCME Women and Minority subcommittee 2007- 2009

Nova Southeastern Committees (2012 forward):

1. Nova Southeastern University Research Advisory Committee
2. Nova Southeastern College of Osteopathic Medicine Research Committee

#### 6b. Clinical Responsibilities

1. Director, CFS and GWI Clinical and Research Center, NSU and Miami VAMC
2. Co-director of VA Medical Center AIDS Clinical Unit,
3. HIV/AIDS Primary Care Clinic (Silver Team) – attending Monday clinic, and backing up Wednesday clinic. Daily oversight of 2 ARNP clinics.
4. General Medicine teaching attending, VAMC
5. Director, Miami VAMC Allergy Clinic, Tuesday MD clinic, and oversight of RN clinic and RN and ARNP clinic
6. Medical Director NSU Neuro Immune Clinics, Davie, FL and Kendall FL –training staff and overseeing quality of care in this clinic utilizing the CFS clinical care templates developed and implemented in this demonstration project site.

Consistently ranked “Outstanding” in the annual VAMC and university proficiency reporting, including clinical skills, teaching, productivity and administration.

#### 7. COMMUNITY ACTIVITIES

Health Crisis Network, CoFounder and Past Chair of the Medical Advisory Committee and Board of Directors. (Currently Co-Cure Foundation, a Miami Dade HIV related community health organization) 1984, 1985-89

Member, National Task Force on Women's Health Issues, NOW (1995-present)

People with AIDS Coalition (PWAC), Board of Directors 1993-95

PWA Housing Coalition, Board of Directors 1993-95

Women's Emergency Network, Board of Directors 1998/99

Bessie Garrett Foundation – Homeless children outreach, Board of Directors 1999 – 2009

National Organization for Women, Health Advisory Board, 1992-2002

PANDORA – advocacy for people with neuro-inflammatory disorders, board of directors 2007 – present

CFIDS Association of America – Scientific Advisory Committee