

PETER N. UCHAKIN, PHD
 Associate Professor
 Department of Internal Medicine
 Mercer University School of Medicine

EDUCATION / TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Saratov State University, Saratov, Russia	M.S.	1986	Microbiology
State Scientific Center "Institute for Biomedical Problems", Moscow, Russia	Post-Graduate Training	1989	Aerospace and Underwater Physiology
Gamaleya Institute of Epidemiology and Microbiology, Moscow, Russia	Ph.D.	1993	Immunology and Allergy
Southwestern Medical School at Dallas, Department of Orthopedic Surgery, Dallas, USA	Post-Doctoral Training	1993-95	Immunology
Resident National Research Council Research Associate at NASA/JSC, Houston, TX, USA	Post-Doctoral Training	1995-99	Immunology

RESEARCH AND PROFESSIONAL EXPERIENCE

Professional Appointments:

2010-present	Associate Professor with tenure, Department of Internal Medicine, Mercer University School of Medicine, Macon, GA, USA.
2004-2010	Assistant Professor, Department of Internal Medicine, Mercer University School of Medicine, Macon, GA, USA.
1999-2004	Lead Research Scientist, Division of Basic Medical Sciences. Mercer University School of Medicine. Macon, GA, USA.
1995-1996	Visiting Scientist, University Space Research Association (USRA) - NASA, Lyndon B. Johnson Space Center, Houston, TX, USA.
1990-1993	Research Scientist, Department of Neuro-Immunomodulation, Central Research Institute for Biomedical Problems of Sports, Moscow, Russia.
1986-1990	Research Scientist, Laboratory of Immunology, State Scientific Center - Institute for Biomedical Problems", Moscow, Russia.
1985-1986	Research Associate, Laboratory of immunology, State Scientific Center "Institute for Biomedical Problems", Moscow, Russia.

Teaching Activities:

Tutor in the Biomedical Problems Program

- Host Defense
- Hematology

Consultantships and Appointments:

- AD HOC Reviewer: Journal of Gravitational Physiology, 2003, 2005.
- AD HOC Reviewer: Psychiatry Research, 2003.
- AD HOC Reviewer: Aviation, Space and Environmental Medicine, 2005-present.
- AD HOC Reviewer: Psychoneuroendocrinology, 2005, 2012.
- AD HOC Reviewer: BMC Immunology 2007
- AD HOC Reviewer: European Journal of Dentistry, 2010.
- AD HOC Reviewer: Medical Virology, 2011.
- AD HOC Reviewer: Journal of Applied Physiology, 2011.
- Invited Editor: Journal of Nutrition, 2005.

Publications:

Peer Reviewed Papers: (* as corresponding author)

1. **Uchakin P.N.**, Sergienko, A.V. [Immune control during special physical training]. *Aerokosm, Hyperbarich Med i Biol*, 1988, S.1, 14-16.
2. Konstantinova I.V., Lesniak A.T., Bojnikov N.V., **P.N. Uchakin**. [Immunological mechanisms of regulation of calcium exchange in human bone tissue]. *Kosm Biol Aerokosm Med*, 1989, 3, 38-41.
3. Serov I.V., **P.N. Uchakin**, O.D. Meshkov. [Status of cellular and humoral factors of immunity in humans in hermetically closed chambers]. In: "*Clinical and Experimental Immunology*", 1989, 181-185.
4. Lesniak A.T., I.V. Konstantinova, N.V. Bodjnikov, **P.N. Uchakin**. Immunocompetent cells producing humoral mediators of bone tissue mineral metabolism during space flight simulation. *Physiologist*, 1989, 32(1), 53-56.
5. Antropova E.N., **P.N. Uchakin**, I.E. Vorotnikova. [Immune control of special physical training]. *Theoria i Praktika Fizicheskoy Kulturi*, 1990, V.6, p.17-19.
6. Gotovtseva E.P., I.V. Serov, **P.N. Uchakin**, S.V. Shestakova, I.D. Surkina, F.I. Ershov. [The disturbance of human lymphocyte production of interleukin-2 and gamma-interferon during stress and the mechanisms of their interaction]. *Vopr Virusol*. 1990, 35, p.435-437.
7. Gotovtseva E.P., I.D. Surkina, **P.N. Uchakin**, A.A. Zozulia. [Endogenous mechanisms of interaction of interferon and neurohumoral systems]. *Interferon-92*, 1992, 32-38.
8. Gotovtseva E.P., I.D. Surkina, **P.N. Uchakin**, M. Shurin, S. Pshenichkin S., Kost N., Zozulya A., Ilyinsky O. Interaction of Immune, Interferon and Opioid Systems in Professional Athletes. *Host Defense Dysfunction in Trauma, Shock and Sepsis*, 1993, 379-382
9. Surkina I.D., E.P. Gotovtseva, **P.N. Uchakin**. [Effects of immune and interferonogenesis stimulation on adaptation to exercise. Role of opioid system]. *Bulletin Sport Med Rossii*, 1993, 11-17.
10. Surkina I.D., E.P. Gotovtseva, **P.N. Uchakin**. [Effects of immune and interferonogenesis stimulation on adaptation to exercise. Role of endocrine system]. *Bulletin Sport Med Rossii*, 1994, 9-17.
11. **Uchakin P.N.***, M.L. Cabbage, C.F. Sams, B.V. Morukov, I.V. Larina, E.B. Bobrovnik. *Cytokine Secretion and its in Vitro Modulation by Glucocorticoids during 120 Days of Head-Down Bed Rest*. *J Gravitational Physiology*, 5(1), 1999, 171-172.
12. Surkina I.D., E.P. Gotovtseva, A.M. Balashov, **P.N. Uchakin**, K.G. Gurevich, N.M. Scholnik. [Dipyridamole in treatment stress-induced opportunistic infections]. *Russian Medical Journal*, Vol.8, (3-4), 2000.
13. Surkina I.D., E.P. Gotovtseva, K.G. Gurevich, **P.N. Uchakin**. [Application of dipyridamole

- (Kurantil) for immune correction of stress-induced alterations of interferonogenesis and prophylaxis of infectious diseases]. *Clin. Pharmacol & Therapy*, .9(2), 2000, 39-43.
14. **Uchakin P.N.***, B.W. Tobin, M.L. Cabbage, G.D. Marshall and C.F. Sams. Immune Responsiveness Following Academic Stress in First-Year Medical Students. *J Interferon Cytokine Research* 21, 2001, p.687-694.
 15. **Uchakin P.N.***, B.W. Tobin, B.V. Morukov, I.M. Larina, M.L. Cabbage. Type 1 vs. Type 2 cytokine secretion in vitro and its regulation by hydrocortisone in humans subjected to 120-day anti-orthostatic bed-rest regime. *Journal of Gravitational Physiology*, 9(2), 2002, p.71-82.
 16. Tobin B.W., **P.N. Uchakin**, S.K. Leeper-Woodford. Insulin secretion and sensitivity in spaceflight: diabetogenic effects. *Nutrition*, 18, 2002, 842-848.
 17. **Uchakin P.N.***, E.P.Gotovtseva, J.Stray-Gundersen. Immune and Neuro-Endocrine alterations in Marathon Runners. *Journal of Applied Research*, 3(4), 2003, p.483-494.
 18. Mezentseva, M.V., V.E.Sherbenko, A.N.Narovliansky, V.I.Pavlov, **P.N.Uchakin**, F.I.Ershov. [Interferon and cytokine production in patients with genital herpes virus.] *Materia Medica*, 2003, 4(40), 46-54.
 19. Young H.E, Duplaa C, Katz R, Thompson T, Hawkins K.C, Boev A, Henson NL, Heaton M, Sood R, Ashley D.W, Stout CL, Morgan JH, **Uchakin PN**, Rimando M, Long G, Thomas C, Yoon JI, Park JE, Hunt DJ, Walsh NM, Davis JC, Lightner JE, Hutchings AM, Murphy ML, Boswell E, McAbee JA, Gray B, Piskurich J, Blake L, Collins JA, Moreau C, Hixson D, Bowyer FP, Black AC Jr. Adult-derived stem cells and their potential for tissue repair and molecular medicine. *J Cell Molec Med* 2005, 9, 753-769
 20. **Uchakin P.N.***, B.V.Morukov, O.N.Uchakina, I.M.Larina, B.W.Tobin, M.V.Mezentseva, F.I.Ershov. [The endogenous regulation of the cytokine disbalance in humans subjected to simulated spaceflight environment.] *Vestn Ross Akad Med Nauk*. 2006, 7, 15-20
 21. Uchakina O.N., **P.N.Uchakin***, M.V.Mezentseva, A.V.Karabanov, V.V.Poleschuk, I.A.Ivanova-Smolenskaya, F.I.Ershov. [Cytokine balance in patients with Parkinson's and Wilson's diseases]. *Cytokines and Inflammation* 2007, 6(3), 63-68.
 22. **Uchakin P.N.***, R.P. Stowe, D.J. Paddon-Jones, B.W. Tobin, A.A. Ferrando, R.R. Wolfe. Cytokine Secretion and Latent Herpes Virus Reactivation with 28 Days of Horizontal Hypokinesia. *Aviat Space Environ Med* 2007, 78, 608-612.
 23. Uchakina O.N., **P.N.Uchakin***, V.E.Scherbenko, M.V.Mezentseva, M.V.Gabaeva, O.Yu.Sokolov, A.A.Zozulia, L.A.Andreeeva, N.F.Miasoedov, F.I.Ershov. [Immunomodulatory effects of Selank in patients with anxiety-asthenic disorders]. *Zh Nevrol Psikhiatr Im S S Korsakova*. 2008, 108(5),71-5.
 24. **Uchakin P.N.***, S.M.Smith, O.N.Uchakina, B.W.Tobin. Amino acid metabolism and immune responsiveness in vitro in a microgravity analog. *J. Grav. Physiol*. 2008, 15 (2), 30-37.
 25. Ershov F.I., **P.N.Uchakin***, O.N.Uchakina, L.A.Alekseeva, N.F.Miasoedov. [Antiviral activity of the Selank in vitro]. *Vopr Virusol*. 2009 Sep-Oct;54(5):19-24.
 26. **Uchakin P.N.***, S.M. Smith, O.N. Uchakina. Hydrocortisone-modulated Immune Response and Altered Amino Acid Pool in Vitro. *J Endocrinol Metab* 2011, 1(4), 166-173.
 27. **Uchakin P.N.***, D. Parish, F. Dane, O.N.Uchakina, A. Scheetz, N. Agarwal, B. Smith. Fatigue in medical residents leads to reactivation of herpes virus latency. *Interdiscip Perspect Infect Dis*, 2011:571340. Epub 2011.
 28. Ren D, K.L. Nelson, **P.N. Uchakin**, A.L. Smith, X.X. Gu, D.A. Daines. Characterization of extended co-culture of nontypeable Haemophilus influenza with primary human respiratory tissues. *Exp Biold Med (Maywood)*, 2012, 237(5), 540-547.

Book Chapters, Editorials, and Reviews:

1. Gotovtseva, E.P., I.D. Surkina, **P.N. Uchakin**. Potential interventions to prevent immunosuppression during training. In: OVERTRAINING IN SPORT, 1998, p. 243-272.
2. Meehan, R.T., **P.N. Uchakin**, and C.F. Sams. High Altitude and Human Immune Responsiveness. In: HIGH ALTITUDE, An Exploration of Human Adaptation, 2001, p.645-662.
3. Smith, S.M., **P.N. Uchakin**, B.W. Tobin. Spaceflight Nutrition Research: Platforms and Analogs. Nutrition, Vol.18, 2002, p.926-929.
4. Tobin, B.W. and **P.N. Uchakin**. Nutritional Consequences of Critical Illness Myopathies (Editorial). J Nutrition, 2005 v.135, No 7, p.1803-1805.
5. **Uchakin P.N.**, O.N.Uchakina, B.W.Tobin, F.I.Ershov. [Neuroendocrine immunomodulation]. Vestn Ross Akad Med Nauk. 2007;(9):26-32

Abstracts and Presentations:

1. Konstantinova I.V., A.T. Lesniak, E.N. Antropova, M.P. Rikova, I.V. Vorotnikova, **P.N. Uchakin**. The subpopulational distributions of lymphocytes of human peripheral blood during long term antiorthostatic hypokinesia. The XXI Annual Meeting of specialists from program "Intercosmos". Baranov, Saidomersky, Poland, 6.06-10.06.88, p.3-4,
2. Gotovtseva E.P., Surkina I.D., Ershov F.I., **P.N. Uchakin**. Interaction of interferon, opioid and hormone systems. J. of Interferon Research 11:181 (Suppl.1), 1991.
3. Surkina I., E. Gotovtseva, **P. Uchakin**, M. Shurin, A. Zozulya, O. Ilyinsky. Influence of Interferonogenesis Stimulation on Adaptation to Muscular Activity: Opioid System Participation. Abs. of Second IOC World Congress on Sport Sciences. Barcelona, 26-31 Oct. 1991 p.279.
4. Gotovtseva E.P., I.D. Surkina, **P.N. Uchakin**, F.I. Ershov. IFN- γ and IL-2 production by lymphocytes under acute and chronic stress in humans. J. of Interferon Research 12:124 (Suppl.1), 1992.
5. Surkina I., E. Gotovtseva, **P. Uchakin**, A. Golovachev, N. Kost, M. Shurin, S. Pschenichkin, A. Zozulia, O. Ilyinsky. Study of neuroimmunomodulation at exercise stress. Abs. of First Baltic Sea Conference on Psychosomatic and Psychotherapy. Kiel, 1992, p. 116.
6. Surkina I.D., E.P. Gotovtseva, **P.N. Uchakin**, A.A. Zozulia, O.B. Ilyinsky. Lymphokine production under chronic stress in athletes. Abs. of 2nd International Congress International Society for Neuro-Immuno-modulation. Paedum (Salerno), Italy, Sept. 12-17, 1993, p.163.
7. **Uchakin P.N.**, E.P. Gotovtseva, J.Stray-Gundersen. Effect of acute bout of exercise on Th1 and Th2 immune response. Abstr. of 1995 Ann. Meeting of the International Society for Interferon & Cytokine Research. J. Interferon & Cytokine Res., Vol.15, Suppl.1, 1995, S133.
8. **Uchakin P.N.**, M.L. Cabbage, C.F. Sams. Intracellular synthesis and secretion of IL-2 and IFN- γ by CD4⁺ and CD8⁺ T cells *in vitro* after influenza vaccination in humans. Abstr. of 1997 Ann. Meeting of the International Society for Interferon & Cytokine Research. J. Interferon & Cytokine Res., Vol.17, Suppl.2, 1997, S98.
9. Gotovtseva E.P., **P.N. Uchakin**, C.F. Sams, G.D. Marshall. Th1/Th2 and inflammatory cytokine response to high-mileage training for the first marathon run in middle-aged women. Abstr. of 3rd International Society for Exercise and Immunology Symposium, Nov. 7-8, 1997, Paderborn, Germany.
10. **Uchakin P.N.**, M.L. Cabbage, C.F. Sams. Intracellular synthesis and secretion of IL-2 and IFN- γ by CD4⁺ and CD8⁺ T cells *in vitro* after influenza vaccination in humans. Annual 1997 Meeting of the International Society for Interferon & Cytokine Research. J. Interferon & Cytokine Res., Vol.17, Suppl.2, 1997, S98.
11. **Uchakin P.N.** Immune Response to Environmental Stressors. Seminar in Mercer University Medical School, February 16, 1999, Macon, GA, USA.

12. **Uchakin, P.N.**, B.W. Tobin, C.F. Sams, B.E. Crucian and I.M. Larina. Effects of Confinement on In Vitro Immune Reactions and Its Endocrine Modulation. 16th Annual Meeting ASGSB-CSA-ELGRA, October 25-28, 2000, Montreal, QB, Canada. Gravitational and Space Biology Bulletin, 14(1), October 2000, P68.
13. Tobin, B.W., **P.N. Uchakin**, S.M. Smith, S.K. Leeper-Woodford, M.R. Rothenberg, J.R.T. Lakey. Enhanced insulin secretion, altered glucose, lactate and amino acids in human islets cultured in three dimensional cell culture. Acta Chirurgica Austriaca, v.33(Suppl 174):47, 2001.
14. Leeper-Woodford, S.K., **P.N. Uchakin**, S.M. Smith, J.R.T. Lakey, M.R. Rothenberg, B.W. Tobin. Three-dimensional cell culture of human islets is associated with increased TNF-alpha. Acta Chirurgica Austriaca, v.33(Suppl 174):65, 2001.
15. **Uchakin, P.N.**, B.W. Tobin, I.M. Larina, and B.V.Morukov. Effects of Long-Term Confinement on In Vitro Cell-Mediated vs. Humoral Cytokine Balance. Proceedings, 14th IAA Humans in Space Symposium Living in Space: Scientific, Medical and Cultural Implications, May 18-22, Bacliff, Canada, 2003.
16. **Uchakin P.N.**, B.V.Morukov, M.V. Mezentseva, O.N.Vatagina, B.W.Tobin, F.I.Ershov. Effects of stress-inducing factors associated with space flight on cell-mediated and humoral immune balance. Proc. II World Congress on Immunopathology and Allergy. International Journal on immunorehabilitation, v.4, (2), 2004, p.231.
17. **Uchakin P.N.**, R.P. Stowe, D. Paddon-Jones A.A. Ferrando B.W. Tobin, R.R. Wolfe. Type-1/Type-2 cytokine balance and latent herpesvirus reactivation in humans subjected to bed-rest. Proc. II World Congress on Immunopathology and Allergy. International Journal on immunorehabilitation, v.4, (2), 2004, p.232.
18. Vatagina O.N., M.V.Mezentseva, **P.N.Uchakin**, V.E.Scherbenko, A.V.Karabanov, I.A.Ivanova-Smolenskaya, F.I.Ershov. Cytokine disbalance in neurological diseases. Proc. II World Congress on Immunopathology and Allergy. International Journal on immunorehabilitation, v.4, (2), 2004, p.250.
19. **Uchakin, P.N.** Grand Rounds: Alterations in immune responsiveness in humans subjected to stressful environments. Mercer University School of Medicine, February 2, 2005.
20. Tobin, B.W., C.Noble, **P.N.Uchakin**, R.E. Garner, J.R.T. Lakey. Altered Insulin Gene Expression in Human Pancreatic Islets of Langerhans with Cortisol and Amino Acids in a Microgravity Model System. International Academy of Astronautic, 15th Humans in Space Symposium, Graz, Austria, May 22-26, 2005.
21. B.W.Tobin, **P.N.Uchakin**. Female diabetic rats transplanted with equivalent numbers of islets of Langerhans regain normal glucose levels faster than male rats. The 1st World Congress on Gender-Specific Medicine: Men, Women and Medicine. Berlin, Germany, February 23-26, 2006.
22. **Uchakin, P.N.**, B.W.Tobin, S.M.Smith, O.N.Uchakina. Metabolic aspects of immune response in vitro to cortisol treatment in simulated microgravity culture. Experimental Biology Society Meeting, Nutritional Immunology Session: Abstract #668.7. San Francisco CA, USA, April 1-5, 2006.
23. Tobin, B.W., **P.N.Uchakin**, R.E.Garner, S.Durham, J.R.T.Lakey. Modulation of pancreatic islet function in a microgravity analog. Experimental Biology Society Meeting, Nutritional Immunology Session: Abstract #668.8. San Francisco CA, USA, April 1-5, 2006.
24. **Uchakin P.N.** Stress-induced alterations in the immune response and in the amino acid metabolism in vitro. MUSM & MCGG Joint Research Conference, 12.14.2006, Macon GA.
25. Uchakina, O.N, **P.N.Uchakin**, M.V.Mezentseva, A.V.Karabanov, I.A.Ivanova-Smolenskaya, F.I.Ershov. Immunocorrection of altered cytokine production in neurological patients. Experimental Biology Society Meeting, Immunopharmacology Session: Abstract #704.8. San Francisco CA, USA, April 1-5, 2006.
26. Crucian B.E., R.P.Stowe, S.K.Mehta, **P.N.Uchakin**, S.L.Nehlsen-Canarella, B.V.Morukov, D.L.Pierson, C.F.Sams. Validation of Procedures for Monitoring Crewmember Immune Function.

“Human Research Program Investigators’ Workshop”, USRA, Houston, TX, 2007.

27. **Uchakin P.N.**, S.M.Smith, O.N.Uchakina, B.W.Tobin. Concomitant cytokine secretion and amino acid metabolism alterations in human leucocytes subjected to microgravity analog. American Society of Gravitational and Space Biology. NASA Research Park, Ames Research Center, Moffett Field, CA, October 26-28, 2007.
28. Crucian B., R. Stowe, S. Mehta, **P. Uchakin**, H. Quiariarte, D. Pierson, C. Sams. Validation of Procedures for Monitoring Crewmember Immune Function. NASA Human Research Program Investigators' Workshop. February 12–14, 2007, League City, TX.
29. Crucian, B.E., R. P. Stowe, S. K. Mehta, **P. N. Uchakin**, H. D. Quiariarte, D. L. Pierson, C. F. Sams. *Immune System Dysregulation and Herpesvirus Reactivation Persist during Long-Duration Spaceflight*. 18th IAA “Humans in Space’ Symposium , April 11–15, 2011, Houston, Texas.

PATENTS

Title: New approach in the prevention and correction of immune deficiency in psychiatric and neurological patients with heptapeptide [Selank]. No. 2006127251/15(029613).

Authors alphabetically: Andreeva L.A., F.I. Ershov, A.A. Zozulya, M.V. Mezentseva, N.F. Miasoedov, S.B. Seredinin, O.N. Uchakina, **P.N. Uchakin**.

Patent Holder: Institute of Molecular Genetics, Moscow, Russia.

Country of origin: Russia.

Title: Preparation for prevention and treatment of viral infections; and approach for prevention and treatment of viral infections. No.2337703.

Authors alphabetically: Andreeva L.A., F.I. Ershov, A.A. Zozulya, M.V. Mezentseva, N.F. Miasoedov, S.B. Seredinin, O.N. Uchakina, **P.N. Uchakin**.

Patent Holder: Institute of Molecular Genetics, Moscow, Russia.

Country of origin: Russia.

RESEARCH SUPPORT (Current & Past).

- Immune mechanisms of congestive heart failure in humans (MEDCEN Georgia Community Health Foundation), **PI**, 2010-2011.
- Immune Host Response to Herpes Virus in Space (Pilot Study) (Mercer University, Seed Money), **PI**, 2009-2010.
- Immune mechanism of stress-induced inflammation in heart tissue. (Mercer University, Seed Money), **PI**, 2008-2009.
- Monitoring & Early Detection of Immune Alterations in Medical Residents Subjected to the Chronic Stress of Extended Work Shift and Fatigue (Mercer University, Seed Money), **PI**, 2007-2009.
- Validation of Procedures for Monitoring Crewmember Immune Function (NASA SMO-015), **Co-I**, 2005-2012.
- Immune alterations in humans with psychiatric diseases. (MEDCEN Georgia Community Health Foundation), **PI**, 2004-2009.
- Effects of Short-Duration Space Flight on Type1/Type2 Cytokine Balance and its Endocrine Regulation. (MEDCEN, NASA DSO-501), **PI**, 2002-2003.

- Modulation of Pancreatic Endocrine Function in 3-Dimensional Tissue Culture. (NIH R15), **Co-I**, 2002-2005.
- Effects of 28-day Hypokinesia on Cell-Mediated v. Humoral Cytokine Balance in vitro and its Regulation by Corticosteroids (NSBRI, NPFR00205 suppl.), **PI**, 2001-2003.
- Effects of Confinement in Closed Habitat Environments on Immune Responsiveness and its Endocrine Regulation (MEDCEN, Georgia Community Health Foundation), **PI**, 2000-2001.