

CURRICULUM VITAE

Janko Nikolich-Žugich, M.D., Ph.D.

Name: born Janko Nikolić; changed name to Nikolić-Žugić upon marrying in 1985; phoneticized to Nikolich-Žugich upon becoming U.S. citizen in 2000.)

Education:

Ph.D. 1993 Belgrade University Medical School - Immunology
Thesis: "Phenotypic correlates of the T cell development in the thymus"(Mentor : Prof. M.L. Lukić)
M.Sc. 1989 Belgrade University Medical School - Immunology
Thesis: "The immunostimulatory properties of the Herpes Simplex Virus glycoproteins"(Mentor : Prof. M.L. Lukić)

[*Masters thesis was submitted and approved in 1987, and Ph.D. thesis in 1990. Both defenses were substantially delayed, owing to residing abroad, and to the wars in former Yugoslavia.*]

1984-1985 Medical Internship, Belgrade University Medical School

M.D. 1984 Belgrade University Medical School (G.P.A. 9.53/10.00)

Predoctoral and postdoctoral training:

Postdoctoral 1987-1990 Immunology, Laboratory of Dr M.J. Bevan, Department of Immunology, Research Institute of Scripps Clinic

1984-1986 and 1987 Immunology, Institute for Microbiology and Immunology, Laboratory of Dr M.L. Lukić, Belgrade University Medical School [Discontinued between 3/1986-2/87 for one year obligatory military service.]

Predoctoral 1981-1984 Immunology, Laboratory of Dr. M.L. Lukić, Institute for Microbiology and Immunology, and Laboratory of Dr. Marija Mostarica-Stojković
Institute for Biological Research
Belgrade University Medical School

1982 & 1983 Immunology, Laboratory of Dr. Henry H. Wortis
Department of Pathology, Tufts University School of Medicine, Boston, MA

Positions and Appointments:

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| 2008-present | Chairman and Professor (Tenured), Department of Immunobiology, College of Medicine, University of Arizona, Co-Director, Arizona Center on Aging, University of Arizona, Elizabeth Bowman Professor in Medical Research, Professor, Department of Nutritional Sciences, College of Agriculture and Life Sciences University of Arizona, Tucson, AZ Affiliate Scientist, Oregon National Primate Research Center, Beaverton, OR |
| 2001-2008 | Professor (Tenured), Department of Molecular Microbiology and Immunology, School of Medicine, Oregon Health Sciences University (OHSU), Portland, OR Senior Scientist, OHSU Vaccine and Gene Therapy Institute Senior Scientist, Division of Pathobiology, Oregon Regional Primate Research Center |
| 1996-2001 | Associate Member, Immunology Program, Head, Laboratory of T Cell Development, Memorial Sloan-Kettering Cancer Center, New York, NY Associate Professor The Weill Graduate School of Medical Sciences of the Cornell University, New York, NY |
| 1994-1996 | Assistant Professor Division of Molecular Medicine Cornell University School of Medicine, New York, NY |
| 1990-2000 | Head, Flow Cytometry Core Facility Memorial Sloan-Kettering Cancer Center, New York, NY. |
| 1990-1996 | Assistant Member, Immunology Program Head, Laboratory of T Cell Development Memorial Sloan-Kettering Cancer Center, New York, NY Assistant Professor Cornell University Graduate School of Medical Sciences, New York, NY |
| 1987-1990 | Research Associate Department of Immunology Research Institute of Scripps Clinic, La Jolla, CA. |
| 1984-1986 and 1987 | Postdoctoral fellow Institute for Microbiology and Immunology Belgrade University Medical School, Belgrade, Yugoslavia. [Discontinued training March 1986-February 1987 for one year |

obligatory military service.]

1982-1983

Teaching Fellow
Institute for Microbiology and Immunology
Belgrade University Medical School, Belgrade, Yugoslavia.

Licensed Physician: Yugoslavia/ Serbia **Year:** 1986. **Place of Issue :** Belgrade, Yugoslavia.

Societies: American Association of Immunologists (1990-present); The Harvey Society, (1991-2001); The New York Academy of Sciences, 1993; American-Yugoslav Medical Society, 1995-2000 (Chairman, Scientific Committee, 1997); American Aging Association (AGE; 2002-present; Education committee 2004-2007; Board Member, 2007-2014; President 2009-10; Chairman of the Board 2013-14); The Henry Kunkel Society (2003-present);

Honors and Awards:

Dean's list, 1980, 1983.
Editorial Board Awards for the best scientific paper, the student journal "Medicinski Podmladak", Belgrade, 1983, 1984.
Diploma for the best foreign presentation at the 11th International Student Scientific Conference, Debrecen, Hungary, 1984.
Postdoctoral Fellowship, Scientific Council of the Republic of Serbia, 1984-1986.
AAI Travel Assistance Award to attend the 7th International Congress of Immunologists Berlin, 1989.
Pew Scholar in the Biomedical Sciences, 1991-1995.
Louise and Allston Boyer Young Scientist Award, MSKCC, 1998.
Who's Who in Medicine and Healthcare, 2002-present.
Visiting Professor, Belgrade University Medical School, Belgrade, Yugoslavia, 2003-present
Elizabeth Bowman Professor in Medical Research, University of Arizona, 2008-present
President, American Aging Association (2009-10)
Member, American Federation for Aging Research (AFAR)'s National Scientific Advisory Council (NSAC), 2008-present
Visiting Professor, Austral-Asian Society for Immunology, 2009-10
Honorary Member, Serbian Immunological Society, 2009 (Acceptance Lecture given June 2010)

Professional activities :

Conferences :

Speaker, 7th International Congress of Immunologists, W. Berlin, Germany, July 31-August 5, 1989
Speaker, Gordon Research Conference on Immunobiology and Immunochemistry, Oxnard, CA, March 5-9, 1990
Speaker, Joint AAI and ASMB Meeting, New Orleans, June 3-6, 1990
Invited Speaker, Arden House Conference : "Immunological self-recognition", Harriman, NY, July 5-8, 1990
Speaker, FASEB Meeting, Annaheim, CA, April 5-9, 1992
Invited Speaker, "Myasthenia gravis and related disorders : Experimental and Clinical aspects", Washington, DC, April 11-13, 1992.

Chairman, Immunology session, The 9th PEW Scholars Annual Meeting, Cozumel, Mexico, March 16-21, 1994

Chairman and Speaker, Immunology session, The 10th PEW Scholars Annual Meeting, Puerto Rico, March 11-15, 1995

Speaker, 9th International Congress of Immunologists, San Francisco, CA, July 23-29, 1995

Invited Speaker, 1st International conference on the thymus "ThymOz", Heron Island, Australia, October 11-16, 1995

Invited Speaker, 1st Balkan Immunology Conference, Belgrade, Yugoslavia, November 29-December 2, 1995

Chair, session on T cell Selection, and Invited Speaker, 2nd International T cell conference "ThymOz", Heron Island, Australia, March 25-29, 1998

Speaker, Experimental Biology >99 FASEB meeting, Washington, D.C. April 17-21, 1999

Invited Lecturer, Specialist Teaching Symposium "Lymphocyte Development and Function", Monash Medical School, Melbourne, Australia, April 8, 2000.

Scientific Committee Member and Speaker, 3rd. International T cell conference "ThymOz", Heron Island, Australia, April 11-16, 2000

Jury Member, Student/Postdoctoral Research Day Competition, Clinical Research Institute of Montreal, Montreal, Canada, April 28, 2000

Speaker, AAI 2000 meeting, Seattle, WA, May 12-16, 2000

Speaker, Experimental Biology '01 FASEB meeting, Orlando, FL, 3/31- 4/4, 2001

Organizer & Speaker, 1st International T-cell conference "ThymUS", San Juan, PR, 11/2-11/7/2001

Speaker, 31st Annual Meeting, American Aging Association, San Diego, CA, June 7-10, 2002

Scientific Committee Member, Session Chair and Speaker, 4th International T cell conference "ThymOz", Heron Island, Australia, April 1-6, 2003

Invited Speaker, NIA Workshop "Immunology and Aging", Bethesda, MD, May 2003.

Speaker, 32st Annual Meeting, American Aging Association, Baltimore, MD, June 6-9, 2003

Invited Speaker, Dubai International Genetic Conference, Dubai, UAE, March 19-21, 2004 Dubai, UAE

Invited speaker, 12th Annual Henry Kunkel Society Meeting, New York, NY, May 3-5 2004

Invited speaker, NIAID Workshop "Immunity and Biodefense in Special populations", Bethesda, MD, May 7-8, 2004.

Speaker, 33st Annual Meeting, American Aging Association, St. Petersburg, FL, June 4-7, 2004

Selected speaker, 12th International Congress of Immunology, Montreal, Canada, July 18-23, 2004

Session Chair and Invited Speaker, 4th Balkan Immunology Congress, Istanbul, Turkey, September 5-8, 2004

Session Chair and Invited Speaker, "Immunology and Aging" NIA Workshop, Saranac Lake, NY, October 2-5, 2004

Organizer & Speaker, 2nd International T-cell Conference "ThymUS 04", San Juan, PR, 11/5-10/2004

Invited Speaker, 4th International Kyoto T-cell Conference, Kyoto, Japan, 4/6-10/2005

Invited Participant, Kirin IDEASHOP workshop on T-cell repertoire in health & disease, FOCIS meeting, Boston, MA, May 2005

Invited Speaker, International Workshop on Differentiation and Immunosenescence, Edward Jenner Institute, Compton, UK, October 2005

Invited Speaker, 58th Annual meeting of the Gerontological Society of America, Orlando, FL, November 2005

Invited Speaker, Keystone Symposium “Viral immunity: from basic mechanisms to vaccines”, Steamboat Springs, March 28-April 2, 2006

Invited Speaker and Scientific Committee Member, 5th International T cell conference “ThymOz”, Heron Island, Australia, April 5-12, 2006

Invited Speaker and Discussant, NCRR Workshop “Genetic tools for optimizing the use of rhesus macaques in translational research” Bethesda, MD, April 19-20, 2006

Invited Speaker, Immunology 2006 - American Association of Immunologists Annual Meeting, NIA –sponsored Symposium “How aging impacts Immunity”, Boston, MA, May 12-16, 2006

Invited Speaker, 35th Annual Meeting, American Aging Association, Boston, MA, June 3-6, 2006

Scientific Organizing Board Member and Invited Speaker, International Meeting “Aging Research in Immunology: Impact of Genomics”, Paris, France, September 4-5, 2006

Invited Speaker, 35th Autumn Immunology Conference, Chicago, IL, Nov. 17-20, 2006

Invited Speaker, Edmonton Aging Symposium, Edmonton, Canada, Mar. 30-31, 2007

Selected Speaker, The Henry Kunkel Society 15th Annual Meeting, New York, NY April 24-26, 2007

Ad hoc Speaker, 12 International Association of Biomedical Gerontology “Caloric restriction and immune senescence in primates:”, Spetses Island, Greece, May 20-24, 2007

Selected Speaker, 36th Annual Meeting, American Aging Association, San Antonio, TX, June 2-4, 2007

Co-organizer, Speaker and Session Chair, Pennington Symposium “Neuro-immune modulation and inflammation in aging”, Baton Rouge, LA, Dec. 2-5, 2007

Selected Speaker, Keystone Symposium “Viral Immunity”, Keystone, CO, Jan. 20-25, 2008

Third International Conference on Primate Genomics: Primate Genomics and Human Diseases; Seattle, WA, Apr. 13-16, 2008

Invited Speaker, U.S.-Japan Cooperative Medical Science Program: Workshop on Aging & Immunosenescence, San Francisco, CA, Jun. 18-21/2008

Invited Speaker, 2nd European Federation of Immunological Societies/EJI Belgrade Symposium /Postgraduate Course: Inflammation at the Interface of Innate and Acquired Immunity, Belgrade, Serbia, Sept. 7-10/2008

Organizer & Session chair, 3rd International Conference on Lymphopoiesis, T cell differentiation and Immune Reconstitution “ThymUS 08”, San Juan, PR, Nov. 9-14/2008

Invited Speaker, ASP-IDSA Workshop on Immunization of Older Adults, Washington, DC, Dec. 15-16, 2008

Invited Speaker, CDC/NIA-sponsored meeting "Immune senescence and vaccination in older adults" Atlanta, GA, Feb. 2-5, 2009.

Invited Speaker, Gordon Research Conference – Biology of Aging, Ventura, CA, Feb. 15-20, 2009

Invited Speaker and Session co-chair, NIA Symposium “How Aging Impacts Vaccine Efficacy”, 96th Annual Meeting of the American Association of Immunologists, Seattle, WA, May 8-12, 2009

Session Chair, 38th Annual Meeting of the American Aging Association, Scottsdale, AZ, May 30-June 1, 2009

Invited Speaker and Session Chair, 5th International Kyoto T-cell Conference, Kyoto, Japan, June 1-4, 2009.

Invited Speaker and Session Chair, 4th SENS (Strategies to Engineer Negligible Senescence) Conference, Cambridge, UK, Sept 3-7, 2009

Invited Speaker and Session Chair, Fondation Merieux Conference “Aging and Immunity”, Siena, Italy, Sept. 21-23, 2009

Session Chair and Speaker, 6th National Research Centers of Excellence in Biodefense and Emerging Infections, Las Vegas, NV, April 11-13, 2010

Session Chair and co-organizer, Pre-Conference of the American Aging Association, joint with the American Federation for Aging Research and the Gerontological Society of America: Biology of Aging: A meeting of minds to celebrate award-winning science”, Portland, OR, June 4, 2010.

Organizer, 39th Annual Meeting of the American Aging Association (AGE) – “Aging and Inflammation: causes and consequences”, Portland, OR June 4-7, 2010.

Session co-Chair and Speaker, “Immunity and Aging” Workshop, 14th International Congress of Immunologist, Kobe, Japan, August 22-27, 2010.

Session Chair and Speaker, Adaptive Immunity session, 2nd Meeting of the Pacific Northwest Regional Center of Excellence in Biodefense and Emerging Infections, Portland, OR, Sept. 22-23, 2010

Session Chair and Speaker, 7th European Congress of Biogerontology, Palermo, Italy, Oct. 13-17, 2010

Invited Speaker, 2nd International Conference on Cytomegalovirus and Immune Aging, Cambridge, UK, December 2-4, 2010.

Invited Speaker, 7th National NIAID Research Centers of Excellence in Biodefense and Emerging Diseases, Denver, CO April 3-5, 2011.

Invited Speaker and Organizer of the US participant contingent of 4 PIs and 8 trainees (obtained a R13 NIA award in support), 14th International Association of Biomedical Gerontology, Brighton, UK, Jul. 11-14, 2011

Invited Speaker and Session Chair, 5th SENS (Strategies to Engineer Negligible Senescence) Conference, Cambridge, UK, Aug. 31- Sept. 4, 2011

Invited Speaker, British Society of Immunology Annual Meeting, Liverpool, UK, Dec 5-9th, 2011

Invited Speaker and Discussion Moderator, 3rd International Conference on Cytomegalovirus and Immune Aging, Cordoba, Spain, March 15-16, 2012

Invited Speaker and Session Chair, Fondation Merieux Conference “Aging and Immunity”, Siena, Italy, April 22-24, 2012

Invited Speaker and Session Chair, 41st Annual Meeting of the American Aging Association, Ft. Worth, TX June 1-4, 2012

Organizer & Session chair, 4th International Conference on Lymphopoiesis, T cell differentiation and Immune Reconstitution “ThymUS 12”, Miami, FL, Nov. 04-09/2012

Invited Speaker and Discussion Moderator, 4th International Conference on Cytomegalovirus and Immune Aging, Parma, Italy, March 25-27, 2013

Session Chair, Block Symposium, 100th Annual Meeting of the American Association of Immunologists, Honolulu, HI, May 3-7, 2013.

Invited Speaker and Session Chair, 6th International Kyoto T-cell Conference, Kyoto, Japan, June 3-7, 2013.

Invited Speaker, IBS-AIM International Workshop on T cell Biology and Aging, Pohang, S. Korea, June 09-11, 2013.

Invited Speaker, Satellite Meeting to the International Congress of Immunology SM3

- “Immunology of Ageing”, Milan, Italy, August 20-22, 2013
 Invited Speaker, British Society for Research on Ageing Annual meeting, Norwich, UK, Sept. 3-5, 2013.
 Invited Speaker and Session Chair, 6th SENS Foundation Meeting, Cambridge, UK, Sept. 4-8, 2013
 Invited Speaker, 1st Vaccine and Gene Therapy Institute-Florida Symposium : “Intergrative approaches to the Immunotherapy of Cancer and Infectious Diseases”, Port St. Lucie, FL, Nov 13-15, 2013
 Invited Panelist, “Societal Implications of Delaying Aging” panel, Gerontological Society of America 2013 Annual meeting, New Orleans, LA, Nov. 20-24, 2013

Invited Seminars and Lectures :

- Medical Biology Institute, La Jolla, CA, 1989
 Ludwig Institute for Cancer Research, Lausanne, Switzerland, 1989
 Basel Institute for Immunology, Basel, Switzerland, 1989
 Tufts University Department of Pathology, 1989
 Massachusetts Institute of Technology, Cambridge, MA, 1990
 Sloan-Kettering Institute, New York, NY, 1990
 Columbia University, New York, NY, 1990
 New York University, Department of Pathology, New York, NY, 1990
 Cornell University, Ithaca, NY, 1991
 Loma Linda University, Loma Linda, CA, 1992
 Scripps Research Institute, La Jolla, CA, 1992
 New York University, New York, NY, 1993
 North Shore University Hospital, Manhasset, NY 1993
 Serbian Association of Immunologists, Belgrade, Yugoslavia, 1993
 University of Washington, Seattle, WA, 1993
 Genentech Inc., So. San Francisco, CA, 1993
 DNAX Research Institute, Palo Alto, CA, 1993
 Massachusetts General Hospital, Charlestown, MA, 1994
 Targeted Genetics Corp., Seattle, WA, 1994
 Tufts University Sackler School of Biomedical Sciences, Boston, MA, 1995
 New York University, Division of Immunology, New York, NY, 1995
 University of Medicine and Dentistry of New Jersey, R.W. Johnson Medical School, Piscataway, NJ, 1995
 Fox Chase Cancer Center, Philadelphia, PA, 1995
 University of Maryland, Department of Microbiology and Immunology, Baltimore, MD, 1995
 The Walter and Eliza Hall Institute, Melbourne, Australia, 1995
 Ludwig Institute for Cancer Research, Lausanne, Switzerland, 1995
 Basel Institute for Immunology, Basel, Switzerland, 1995
 Laboratory of Viral Diseases, NIAID, NIH, Bethesda, MD, 1996
 University of Connecticut Health Center, Farmington, CT, 1996
 Holland Laboratory, American Red Cross, Bethesda, MD, 1996
 University of Maryland at Baltimore, Baltimore, MD, 1997
 Experimental Immunology Branch, NCI, NIH, Bethesda, MD, 1997
 Centre d'Immunologie, INSERM/CNRS, Marseille, France, 1997
 Ecole Normale Supérieure de Lyon, Lyon, France, 1997
 Basel Institute for Immunology, Basel, Switzerland, 1997

Walter and Eliza Hall Institute, Melbourne, Australia, 1998
Monash University, Melbourne, Australia, 1998
University of Toronto, Toronto, Canada, 1998
The Scripps Research Institute, San Diego, CA, 1998
National Institute for Medical Research, London, UK, 1999
Department of Anatomy, University of Birmingham, Birmingham, UK, 1999
University of Pittsburgh, Pittsburgh, PA 1999
Mayo Foundation, Rochester, MN, 2000
University of Maryland, College Park, MD, 2000
University of Rochester, Rochester, NY, 2000
Clinical Research Institute of Montreal, Montreal, Canada, 2000
University of Vermont, Burlington, VT, 2000
University of Maryland at Baltimore, Baltimore, MD, 2000
Mt. Sinai Medical Center, New York, NY 2000
Oregon Health & Science University, Portland, OR 2000
The Walter and Eliza Hall Institute, Melbourne, Australia, 2000
Dept. of Microbiology and Immunology, University of Maryland, Baltimore, MD, 2000
Department of Hematology, Papanicolaou Hospital, Thessaloniki, Greece, 2000
Department of Immunology, University of Washington, Seattle, WA, 2001
Roswell Park Cancer Institute, Buffalo, NY, 2001
National Institute on Aging, Baltimore, MD, 2001
NIA Collaborator Meeting "Caloric Restriction in non-human primates", San Diego, CA
2002
Department of Microbiology and Immunology, Belgrade University Medical School,
Belgrade, Yugoslavia, 2002
New York University Graduate Program in Immunology, New York, NY 2002
Memorial Sloan-Kettering Cancer Center, New York, NY, 2002
Visiting Lecture, School of Medicine, University of Belgrade, Belgrade, Yugoslavia, 2003
The Walter and Eliza Hall Institute, Melbourne, Australia, 2003
NIA Collaborator Meeting "Caloric Restriction in non-human primates", Baltimore, MD
2003.
Department of Pathology, Washington University, St. Louis, MO, 2004
Faculty of Medicine, UAE University, Al Ain, UAE, 2004
NIA Collaborator Meeting "Caloric Restriction in non-human primates", Portland, OR
2004
Department of Pediatrics, OHSU, Portland, OR 2004
La Jolla Institute for Allergy and Immunology, La Jolla, CA, 2005
University of Nevada, Reno, NV 2005
University of Wisconsin, Madison, WI 2005
University of Belgrade, School of Medicine, Belgrade, Serbia and Montenegro, 2005
National Jewish Center for Immunology and Respiratory Medicine, Denver, CO, 2006
Sidney Kimmel Cancer Center, La Jolla, CA, 2006
University of Montreal, Montreal, Canada 2006
University of Massachusetts, Worcester, MA 2006
Institute on Aging of the Austrian Academy of Science, Innsbruck, Austria, 2006
University of Basel, Basel, Switzerland, 2006
Georgetown University, Washington, DC, 2006
National Institute on Aging, Baltimore, MD, 2006
University of Arizona, Tucson, AZ, 2006
University of Iowa, Iowa City, IA, 2007

University of Belgrade, School of Medicine, Belgrade, Serbia, 2007
University of Parma, Parma, Italy, 2007
University of Vienna, Vienna, Austria, 2007
Special Lecture, College of Medicine, University of Arizona, 2008
Plenary Lecture, 3rd Annual Frontiers in Immunobiology & Immunopathogenesis Symposium, Tucson, AZ 2008.
Department of Immunology, Duke University Medical Center, Durham, NC, 2008
Department of Medical Biology, University of Arizona College of Medicine, Phoenix, AZ, 2008
Rheumatology Grand Rounds, University of Arizona College of Medicine, Tucson, AZ 2008
Department of Immunology, University College, London, UK, 2009
Department of Immunology, Keio University, Tokyo, Japan, 2009
University of Tokushima, Tokushima, Japan, 2009
Radiation Effects Research Foundation, Hiroshima, Japan, 2009
University of Parma, Parma, Italy 2009
Department of Biomedicine, University of Basel, Basel, Switzerland, 2009
Department of Immunology, University of Toronto, Toronto, Canada 2010
Department of Molecular and Cellular Biology and the Barshop Center for Aging Research, San Antonio, TX, 2010
The Garvan Institute for Medical Research, University of Sydney, Sydney, Australia, 2010
Queensland Institute for Medical Research, Brisbane, Australia, 2010
Walter and Eliza Hall Institute for Medical Research and the University of Melbourne, Melbourne, Australia, 2010
The Kronos Longevity Research Institute, Phoenix, AZ, May, 2010
University of Belgrade School of Medicine and the Serbian Immunological Society, Belgrade, Serbia, June 2010
The National Institute on Aging, Baltimore, MD, January 2011
INSERM/CNRS & The University of Nice, Nice, France, June 2011
University of Belgrade School of Medicine, Belgrade, Serbia, June 2011
Department of Pharmacology, University of Arizona, Tucson, AZ, Sept. 2011
Banner Sun Health Research Institute, Sun City, AZ, March 2012
Department of Experimental Pathology, University of Texas Medical Branch, Galveston, TX, April 2012
Institute for Immunology, University of California, Irvine, April 2012
University of Belgrade School of Medicine, Belgrade, Serbia, June 2012
University of Kragujevac, Belgrade, Serbia, June 2012
Southwest National Primate Research Center, San Antonio, TX, July 2012
The Barshop Institute for Aging Studies, San Antonio, TX, July 2012
Memorial Sloan-Kettering Cancer Center, New York, NY, September 2012
Beckmann Center, Stanford University, Palo Alto, CA, December 2012
University of Belgrade School of Medicine, Belgrade, Serbia, July 2013
University of Kragujevac, Belgrade, Serbia, July 2013

Reviewer:

Papers: Aging Cell, Cell, Cell Host & Microbe, Cellular Immunology; Experimental Gerontology; Immunity; International Immunology; Journal of Biological Chemistry;

Journal of Experimental Medicine; J. Geront. Biol. Sci.; Journal of Immunology, Journal of Virology, Nature Immunology, Nature Medicine, Nature Reviews, PNAS, Science; etc.

Grants: Israeli Science Foundation (ad hoc, 1995); NIH Immunobiology Study Section (ad hoc 1995;1996; 2003, 2004); NIH Cellular and Molecular Immunology B Study Section (*permanent member 2004-2008*); NIH Immunological Sciences SS (Ad hoc 1997); Wellcome Trust (1999); NCI Special Emphasis Panel (2000);NIH IDM-A-03 SS (ad hoc - 2011); NIH Fogarty International Research Center (ad hoc, 2000,2001) NIAID & NIA Special Emphasis Panels (1998; 1999; 2002; 2003,2004); NIA P01 Site visit teams 2002, 2003, 2004; Chairman, NIA P01 Site visit team, 2004, 2005; NIA Shock Centers Review (2010); NIA P01 Review (2010)

Board Memberships:

Board of Directors, American Aging Association (2007-2014); Chairman of the Board, American Aging Association, 2013-14.

Editorial Boards:

Journal of Immunology, Associate Editor, 1998-2002.
Cellular Immunology, 1996-
AGE: Journal of the American Aging Association, 2004-
Journal of Gerontology:Biological Sciences, Associate Editor. 2007-
Journal of Virology 2008-2014
Aging Cell, 2008-
Gerontology, 2011-

NIH Workshop/Advisory Panels (all involve research presentations):

NIA Panel : "Immunology and Aging" , Bethesda, MD, 2002;
NIAID panel "Vaccination and protection of Special populations against bioattack", Bethesda, MD, 2004;
NCRR panel : "Genomic and translational tools in the non-human primate research", 2006, Bethesda, MD;
NIA/NIAID joint panel " Thymic atrophy with aging", Rockville, MD, 2007;
NIAID Panel "West Nile: Research Advances in Virology, Immunology and Genetics", Rockville, MD, 2007;
RERF-NIAID Workshop "Radiation and Age-associated Immunosenescence " Hiroshima, Japan, 2007;
Invited Presentation to the National Advisory Council on Aging, Bethesda, MD, 2008.
NIA Biology of Aging Summit (Co-Chair, Infection and Immunity Block), Gaithersburg, MD, 2008
NIAID Kickoff Meeting on the Pacific Northwest Research Center of Excellence in Biodefense and Emerging Diseases, Beaverton, OR, 2009
NIAID Workshop "Advances in West Nile virus research", Washington, DC, 2009.
NIAID/NIA Meeting "Rejuvenating the Aging Immune System", Rockville, MD, 2009
NIAID meeting: "T cell memory", Bethesda, 2010
NIAID/NIA Workshop "Rejuvenating the Aging Immune System", Bethesda, MD, Oct. 5-6, 2011
NIAID Workshop "Immune protection in Special Populations", Bethesda, MD, Jan 27, 2012
RERF-NIAID Workshop "Radiation and Age-associated Immunosenescence ", Tokyo,

Japan, July 28-31, 2012
NIA-NIH-wide Workshop “Inflammation and Aging”, Bethesda, MD, Sept. 6-7, 2012
RERF-NIAID Workshop “Radiation and Age-associated Immunosenescence “,
Bethesda, MD, April 2013
RERF-NIAID Workshop “Radiation and Age-associated Immunosenescence “, Tokyo,
Japan, November 2013

International Panels and Missions

Embassy of France-organized Mission: Aging and Immunity, Collaborative US-French initiative,
October 18-23, 2010

Community outreach lectures/panels:

Lincoln High School, Portland, OR, 2003
Stoller Middle School, Portland, OR, 2004
Stoller Middle School, Portland, OR, 2005

Healthy Aging Forum, Kiewit Auditorium of the AZ Cancer Center, Tucson, AZ, Oct. 2009
Sun City Vistoso Community Lecture, Aging of the Immune System, Oro Valley, AZ,
November, 2009
St. Phillip in the Hills Church Community Lecture: Aging of the Immune System, Tucson,
AZ, Nov, 2010
Academy Village Community Lecture: Vaccines and aging, Tucson, AZ, Jan., 2011
Mended Hearts Club Community Lecture: Teaching an Old Immune System New Tricks,
Tucson Medical Center, Tucson, AZ, April, 2011.
Discussion panel member (out of three panelist) for the movie “How to Live Forever”, The
Loft Theater, Tucson, AZ, Oct. 13, 2011
Lecture “Biology of aging: Why our bodies grow old and what can we do about it” – part
of the UA College of Science lecture series “Living Beyond 100’s”, Jan. 31, 2012
(YouTube Link: <http://www.youtube.com/watch?v=ZcyuHNLRSU>)
Lecture “Why are we aging?” – part of the series “Healthy aging 2012”, Foundation Ilija
M. Kolarac, Belgrade, Serbia, June 7, 2012

Teaching, mentorship and institutional service:

1. Teaching

Cornell University Graduate School of Medical Sciences (subsequently Weil Graduate School)

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|-----------------------|--|
| 1990-2000 | Lecturer, Immunology Course, |
| 1990-1996, 1998, 1999 | Quarter I Examiner, Immunology Course |
| 1997 | Lecturer, Advanced Topics in Immunology |
| 1996 | Lecturer, Core Graduate School Course |
| 1996 | Organizer, Immunology Course |
| 1996 | Lecturer, Tri-Institutional MD/Ph.D. Course |
| 1995 | Lecturer, Molecular Medicine Course |
| 1993 | Organizer and Lecturer, Center-wide Course "Theory and Practice of Flow Cytometry" |

OHSU Graduate School:

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| 2002, 2004 | Lecturer, Advanced Immunology Course |
| 2001-2008 | Ph.D. Program Annual Retreat Presentation |
| 2001-2008 | MD/Ph.D./ Program Annual Retreat Presentation |

UA Graduate Program in Immunobiology

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| 2009-2013 | Course Director, 564 Advanced Topics in Immunobiology |
| 2010 | Lecturer, 566 Immunology Course |

ArizonaMed (UA Medical Student teaching)

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| 2009-present | Lecturer, 2 nd Year Infection and Immunity Block (Tucson) |
| 2009 | Moderator, Case-Based Instruction |
| 2009-2011 | Lecturer, Life Cycle Block (Phoenix) |
| 2011-present | Advanced Topics Lecturer (Tucson) |
| 2013-present | Life Cycle Block (Tucson) |

2. Faculty and Institutional Committees

Cornell University Graduate School of Medical Sciences (subsequently Weil Graduate School):

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|------------|--|
| 1990-2000 | Admissions Interviewer, Immunology Program |
| 1990-2000 | Admissions Interviewer, Tri-Institutional MD/Ph.D. Program |
| 1993-1998 | Chairman, Guest Speaker Committee |
| 1991-1994 | Curriculum Committee |
| 1990-1994 | Admissions Committee, CUGSMS |
| 1991-1993 | Member, Guest Speaker Committee, MSKCC |
| 1994-1997 | Institutional Animal Care and Use Committee |
| 1995, 1997 | Promotion & Tenure ad hoc committees |
| 1998 | Head Veterinarian Search Committee, MSKCC and Cornell University Medical College |

OHSU, OHSU Graduate School and ONPRC:

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|------------------|--|
| 2001-2008 | Admissions Interviewer, MMI and PMCB programs |
| 2002 | Qualifying exam reform committee |
| 2003, 2004, 2005 | Molecular Microbiology and Immunology Promotion & Tenure Committee |
| 2003-2008 | ONPRC Appointment, Promotion & Tenure Committee |
| 2004 | Ad Hoc Animal Use Cost Committee |

2004 OHSU Institutional Award Committee
 2001-2008 MMI/VGTI Guest Speaker Committee (chairman)
 2001-2008 Preceptor, MMI T32 training grant in Molecular Pathogenesis
 2001-2006 Preceptor, OHSU Casey Eye Institute training grant in Immunology
 of the Eye

University of Arizona:

2008-present Preceptor, UA Neurobiology T32 Training Grant
 2008-present Arizona Cancer Center Scientific Board Member
 2009-10 University of Arizona Vice-President for Research TRIF
 (Technology, Research and Innovation Fund) Strategic Review
 Panel
 2010-present Arizona Arthritis Center Board of Overseers and Scientific Board
 Member
 2010-2013 Chair, Arizona Arthritis Center Director Search Committee; new
 director (dr Kwoh) hired in Jan. 2013
 2010-present Strategic Integration Champion (one of 15 in a 6,000 employee,
 three organization workforce), guiding integration of the College of
 Medicine, the University Medical Center and University Physician
 Health Practice Plan into a single entity, UA Health Network
 2011 Member, Special Performance Evaluation Committee for
 Department Head of Physiology
 2011-present Steering Committee, Heads Up (UA Department Heads
 Organization)
 2012-14 Co-Chairman, Heads Up (UA Dept. Heads Organization),
 representing the organization with the President, Provost and the
 UA administration
 2013-14 Chair, Senior Vice-President for Research Search Committee
 2013-14 Member, Advisory Board to the Senior VP for Health Affairs on
 Personalized Medicine

3. Student Committees

Admission to Ph.D. Candidacy/Qualifying exam Committee - Yiqing Xu (Cornell, 1993);
 Ruben Dyall (Cornell, 1993); Albert Molano (Cornell, 1994); Kimary Kulig (New
 York University, Dept. of Pathology, 1996); Teodora Staeva (Cornell, 1998); Ilhem
 Messaoudi, (Cornell, 1998); Standing Qualifying Exam committee, Department of
 Molecular Microbiology and Immunology, OHSU, 2002-2004 (14 student
 examinations total)

Thesis Committee - Teodora Staeva (Cornell, 1997-2001); Kimary Kulig (NYU
 Pathology) (1996-99); Michael Munks, (OHSU, 2001-2003); Vuna Fa (M.Sc., Univ
 of Arizona, 2008-09); Hao Chen (Univ. of Arizona, 2009); Parvathi Ranganathan
 (Univ. of Arizona, 2009-10); Lance Nesbit (Univ. of Arizona, 2008-10);
 Rajalakshmy Ramalingam (Univ. of Arizona, 2009-2012); Neha Deshpande
 (Univ. of Arizona, 2011-present)

Ph.D. Thesis Defense Committee - Iris Alroy (Cornell, 1995); Tonya Villafana (Cornell,
chairman, 1998); Michael Munks (OHSU, 2003)

4. Mentoring

Rotation students: *Cornell* - Ruben Dyall 1991; Alberto Molano, 1992; Gregory Stella, 1992; Valeria Tortorelli, 1994; Richard Huard, 1996; Ilhem Messaoudi, 1997; Bidisha Dasgupta, 2000.

OHSU - Anna Lang, 2001; James Brien, 2002; Cortney Hiddlestone, 2003; Erin Fitch, 2005; Stefanie Manzer, 2007; Lila Farrington, 2008.

University of Arizona – Kristin Renkema, 2009; Jason Pugh 2009, Emily Goldberg, 2010, Andrea Tanner, 2010, Nicholas Fox, 2010, John S. Davies, 2012.

Mentor to students who did not progress to degree:

Andrea Tanner, University of Arizona, 2010-2011 – Link between proliferative and differentiation defects in old mouse T-cells (left laboratory and graduate program in 2011)

Doctorate and Masters Mentor:

Dr. Ruben Dyall, 1991-1995 - Thesis title : “The use of optimal MHC class I binding peptides to study T cell selection, recognition and activation“
(Present position - Staff Immunologist, Immunology Division, Discovery Oncology Program, Pharmacia-Monsanto, St. Louis, MO)

Dr. Alberto Molano, 1994-1998 - Thesis title “Peptide binding, TCR recognition and intrathymic positive selection by an MHC H-2K^b class I molecule devoid of the central anchor ("C") pocket"
(Present position – Staff Scientist, Department of Microbiology, The Yeshiva University, Albert Einstein College of Medicine, New York, NY)

Dr. Ilhem Messaoudi, 1997-2001 - Thesis title “ Specificity, kinetics and homeostatic regulation of a cytotoxic T lymphocyte (CTL) response to an immunodominant viral epitope"
(Present position –Assistant Professor, UC Riverside School of Medicine, Riverside, CA)

Dr. Teodora Staeva (co-mentor with Dr. Leonard P. Friedman), 1998-2001 – Thesis title: “Role of Vitamin D3 transcription in T-cell function”
(Present position Program Director for Immune Therapies, Juvenile Diabetes Research Foundation)

Dr. Anna Lang, OHSU, 2001-2007– Thesis title: “Impact of lifelong viral infection on development and maintenance of memory CD8⁺ T-cells”
(Present position – Medical Student, OHSU, Portland, OR)

Dr. James Brien, OHSU, 2002-2007– Thesis title: “Immunological basis of age-related vulnerability to viral infection”
(Present position – Postdoctoral Fellow, Department of Microbiology, Washington University School of Medicine, St. Louis, MO)

Nicholas Fox, M.Sc. University of Arizona, 2010-2012 – Human immune aging and resistance to the West Nile virus infection

Dr. Kristin R. Renkema, University of Arizona, 2009-2013 – Thesis title: Maintenance, activation and protective responses of naïve CD8 T cells with aging

Dr. Jason L. Pugh, University of Arizona, 2009-2013 – Thesis title: “Radiation and lymphocyte function in the context of cytomegalovirus (CMV) and aging.

Emily Goldberg, University of Arizona, 2010- present, - Energy metabolism and immunity to infection in the old age

John S. Davies, University of Arizona, 2012-present – Apoptosis and survival in old naïve

human and mouse T cells upon cytokine or TCR activation

Physician-Scientist Faculty Mentoring

MSKCC - Paul Sabolcz, MD, 1997-1999
OHSU - Robert O'Rourke, MD, 2006-08, K08
U. of Arizona- Kurt J. Griffin, MD, 2008-10, K08
Karen Taraszka-Hastings, MD, Ph.D., 2008-present, K08
Zain Khalpey, MD, Ph.D. 2012-present

Junior Faculty Mentoring (mentor or committee member):

OHSU: Mark Slifka, Ph.D., 2001-2004

U. of Arizona- Lonnie Lybarger, Ph.D., 2008-present
Felicia Goodrum, Ph.D., 2008-present
Sourav Ghosh, Ph.D., 2011-present
Hsin-jung Joyce Wu, Ph.D., 2013-present

Office address: 1656 E. Mabel St., Tucson, AZ 85719 **Phone :** 520/626-6065

e-mail: nikolich@email.arizona.edu

Community activities and volunteer work:

Baseball – assistant coach, Cedar Mill Little League, 2002;

Volleyball – assistant coach, Tualatin Hills Park and Recreation District, 2002-2005 (co-ed 4th & 5th grade; girls 6-8 grade); assistant coach, SunCats Volleyball Club, Columbia Empire Volleyball Association (USAV member), 2002-2006; Head coach, Tualatin Hills Park and Recreation District, 2006 (girls 6-8th grade, competitive division).

Community outreach lectures – see above.

Publications (* - Peer Reviewed) :

- 1.* Nikolić, J. and S. Vukmanović. 1983. Production and characterization of alloreactive antisera in inbred rat strains. *Med. Podml.* XXXV (3-4), 197.
- 2.* Vukmanović, S. and J. Nikolić. 1983. Effects of Carrageenan in vivo: delineation of the effect on the immunocompetent and accessory cells. *Med. Podml.* XXXV (1), 21.
- 3.* Nikolić, J. 1984. Analysis of the interaction of cloned T cells and macrophages by the F(ab)'2 fragments of antigen-specific antibodies. *Med. Podml.* XXXVI (1), 21.
- 4.* Mostarica-Stojković, M., J. Nikolić, M. Petrović and M.L. Lukić. 1983. Genetic correlates of the resistance to the induction of experimental allergic encephalomyelitis. *Period. Biol.* 85:63.
- 5.* Burkly, L.C., J. Nikolić and H.H. Wortis. 1985. T cell regulation of light chain expression: Early dominance of Ig κ in a primary thymus-dependent response does not require affinity based selection. *J. Immunol.* 135:1573.
6. Nikolić-Žugić, J., T. Jovanovic, F.Y. Liew, W.L. Chan and M.L. Lukić. 1986. Immunogenic potential and protective capacity of HSV-I glycoproteins. In: Genetic and Biochemical Engineering in Biotechnology, P. Radicević, ed., pp. 117-125, Nolit, Belgrade, Yugoslavia.
- 7.* Nikolić-Žugić, J., T. Jovanović, W.L. Chan and M.L. Lukić. 1986. Induction of T cell proliferative response by immunopurified HSV-I glycoproteins: Correlation with their protective capacity. *Period. Biol.* 88 (1):158.
- 8.* Jovanović, T., J. Nikolić-Žugić, J. Dimitrijević and M.L. Lukić. 1986. Detection of virus and type specific glycoproteins on the membrane of HSV-infected cells by monoclonal antibodies. *Period. Biol.* 88 (1):246
- 9.* Nikolić-Žugić, J. and M.J. Bevan. 1988. Thymocytes expressing CD8 differentiate into CD4+ cells following intrathymic injection. *Proc. Natl. Acad. Sci. USA* 85:8633.
- 10.* Nikolić-Žugić, J., M.W. Moore and M.J. Bevan. 1989. Characterization of the subset of immature thymocytes which can undergo rapid in vitro differentiation. *Eur. J. Immunol.* 19:649.
- 11.* Nikolić-Žugić, J. and M.W. Moore. 1989. T cell receptor expression on immature thymocytes with in vivo and in vitro precursor potential. *Eur. J. Immunol.* 19:1957.
- 12.* Nikolić-Žugić, J. and M.J. Bevan. 1990. Functional and phenotypic delineation of two subsets of CD4 single positive cells in the adult murine thymus. *Int. Immunol.* 1:135.
- 13.* Nikolić-Žugić, J. and M.J. Bevan. 1990. The role of self peptides in positively selecting the T cell repertoire. *Nature* 344:65.
- 14.* Nikolić-Žugić, J. and F.R. Carbone. 1990. The effect of mutations in the MHC class I peptide binding groove on the cytotoxic T lymphocyte recognition of the K^b-restricted ovalbumin determinant. *Eur. J. Immunol.* 20:2431.
15. Nikolić-Žugić, J. and F.R. Carbone. 1991. Peptide presentation by class-I major histocompatibility complex molecules. *Immunol. Res.* 10:54.
16. Nikolić-Žugić, J. 1991. Phenotypic and functional stages in thymocyte development. *Immunol. Today* 12:65.
- 17.* Sands, J.F. and J. Nikolić-Žugić, 1992. T cell-specific protein-DNA interactions occurring at the CD4 locus: identification of possible transcriptional control elements of the murine CD4 gene. *Int. Immunol.* 4:1183.
- 18.* Nikolić-Žugić, J., S. Andjelić, H-S. Teh, and N. Jain. 1993. Influence of T cell receptor (TcR) $\alpha\beta$ transgenes on early T cell development. *Eur. J. Immunol.* 23:1699.

19. Nikolić-Žugić, J. and M.J. Bevan. 1993. Recognition requirements for the positive selection of the T cell repertoire: A role of self-peptides and major histocompatibility complex molecule pockets. In: Molecular Mechanisms of Immunological Self-Recognition (F.W. Alt and H.J. Vogel, editors), Academic Press, Inc., San Diego, CA pp. 105-114.
- 20.* Andjelić, S., N. Jain and J. Nikolić-Žugić. 1993. Ontogeny of fetal CD8^{lo}4^{lo} thymocytes: early expression of TcR α mRNA and TcR $\alpha\beta$ receptors. *Eur. J. Immunol.* 23:2109.
21. Nikolić-Žugić, J. and R. Dyll. 1993. Positive selection of the T cell repertoire is affected by mutations in the peptide-binding site of MHC class I molecules. in A. Penn, D.P. Richman, R.L. Ruff and V.A. Lennon (eds) Myasthenia gravis and related disorders : experimental and clinical aspects. *Ann. N.Y. Acad. Sci.* 681:16.
- 22.* Andjelić, S., N. Jain and J. Nikolić-Žugić. 1993. Immature thymocytes become sensitive to calcium-mediated apoptosis with the onset of CD8, CD4 and the T cell receptor expression: A role for bcl-2? *J. Exp. Med.* 178:1745.
- 23.* Andjelić, S., J. Drappa, E. Lacy, K.B. Elkon and J. Nikolić-Žugić. 1994. The onset of Fas expression follows the expression of CD8 and CD4 on murine fetal and adult thymocytes. *Int. Immunol.* 6:73.
- 24.* Vukmanovic, S., G. Stella, P.D. King, R. Dyll, K.A. Hogquist, J.T. Harty, J. Nikolić-Žugić and M.J. Bevan. 1994. Positively selecting thymic epithelial line lacks costimulatory activity. *J. Immunol.* 152:3814
25. Nikolić-Žugić, J. (editor) 1994. Intrathymic Development of T Cells. R.G. Landes Co., Austin, TX.
 Contains the following authored chapters :
 Chapter 3. Nikolić-Žugić, J. Phenotypic and functional stages in the intrathymic development of the $\alpha\beta$ thymocyte lineage.
 Chapter 7. Nikolić-Žugić, J. Positive intrathymic selection of TcR alpha/beta T cells.
 Chapter 8. Nikolic-Zugic, J. Clonal deletion in negative intrathymic selection.
 Chapter 10. Nikolic-Zugic, J. The relationship between positive and negative selection.
 Chapter 12. Nikolić-Žugić, J. and S. Andjelić. Signal transduction in developing thymocytes.
- 26.* Dyll, R. and J. Nikolić-Žugić. 1995. The majority of post-selection CD4⁺ single-positive thymocytes require the thymus to produce long-lived, functional T cells. *J. Exp. Med.* 181:235.
- 27.* Chu, J.L., P. Ramos, A. Rosendorff, J. Nikolić-Žugić, E. Lacy and K.B. Elkon. 1995. Massive upregulation of the Fas ligand in *lpr* and *gld* mice : Implications for Fas regulation and the GVHD-like wasting syndrome. *J. Exp. Med.* 181:393.
- 28.* Dyll, R., L.V. Vasović, A. Molano and J. Nikolić-Žugić. 1995. CD4-independent priming of murine CTLs by optimal MHC class I - restricted peptides in vivo. *Int. Immunol.* 7:1205.
- 29.* Onel, K.B., C.L. Tuček-Szabo, D. Ashany, E. Lacy, J. Nikolić-Žugić and K.B. Elkon. 1995. Expression and function of the murine CD95/FasR/APO-1 receptor in relation to B cell tolerance. *Eur. J. Immunol.* 25:2940.
- 30.* Ashany, D., X. Song, E. Lacy, J. Nikolić-Žugić, S.M. Friedman and K.B. Elkon. 1995. Th1 CD4⁺ lymphocytes delete activated macrophages through the Fas/Apo-1 antigen pathway. *Proc. Natl. Acad. Sci. USA* 92:11225.
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- cells in eliminating an established tumor. *Eur. J. Immunol.* 27:372, 1997.
- 34.* Andjelić, S., A. Khanna, M. Suthanthiran and J. Nikolić-Žugić. 1997. Intracellular Ca⁺⁺ elevation and cyclosporin A (CsA) synergistically induce transforming growth factor β1 (TGFβ1)-mediated apoptosis in lymphocytes. *J. Immunol.* 158:2527.
 - 35.* Ivanov, V.N. and J. Nikolić-Žugić. 1997. Transcription factor induction during signal-induced apoptosis of immature CD8⁺4⁺ thymocytes: a protective role of c-Fos. *J. Biol. Chem.* 272:8558.
 - 36.* Ross, H.M., L.W. Weber, S. Wang, G. Piskun, R. Dyll, Y. Takechi, J. Nikolić-Žugić, A.N. Houghton and J.J. Lewis. 1997. Priming for T cell-mediated rejection of established tumors by cutaneous DNA immunization. *Clin. Cancer Res.* 3:2169.
 - 37.* Huard, R.C., R. Dyll and J. Nikolić-Žugić. 1997. The critical role of a solvent-exposed residue of an MHC class I-restricted peptide in MHC:peptide binding. *Int. Immunol.* 9:1701.
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 - 39.* Molano, A., H. Erdjument-Bromage, D.H. Fremont, I. Messaoudi, P. Tempst and J. Nikolić-Žugić. 1998. Peptide selection by an MHC H-2K^b class I molecule devoid of a central anchor ("C") pocket. *J. Immunol.* 160:2815.
 - 40.* Ivanov, V.N. and J. Nikolić-Žugić. 1998. Biochemical and kinetic characterization of the glucocorticoid-induced apoptosis of immature CD8⁺4⁺ thymocytes. *Int. Immunol.* 10:1807.
 - 41.* Dyll, R., W.B. Bowne, L.W. Weber, J. LeMaoult, P. Szabo, Y. Moroi, G. Piskun, J.J. Lewis, A.N. Houghton and J. Nikolić-Žugić. 1998. Heteroclitic vaccination induces tumor immunity. *J. Exp. Med.* 188:1553.
 - 42.* Dyll, R., L.V. Vasović, R. A. Clynes, and J. Nikolić-Žugić. 1999. Cellular requirements for the monoclonal antibody-mediated eradication of an established solid tumor. *Eur. J. Immunol.* 29:30.
 - 43.* LeMaoult, J., J.S. Manavalan, R. Dyll, P. Szabo, J. Nikolić-Žugić and M.E. Weksler. 1999. Cellular basis of B cell clonal populations in old mice. *J. Immunol.* 162:6384.
 - 44.* Messaoudi, I., J. LeMaoult and J. Nikolić-Žugić. 1999. The mode of ligand recognition by two peptide:MHC class I complex-specific monoclonal antibodies. *J. Immunol.* 163:3286.
 - 45.* Dyll, R. and J. Nikolić-Žugić. 1999. The final maturation of at least some single-positive CD4^{hi} thymocytes does not require a TCR:MHC class II contact. *J. Exp. Med.* 190:757.
 - 46.* Lacorazza, H.D., J.A. Guevara Patino, M. E. Weksler D. Radu and J. Nikolić-Žugić. 1999. Failure of rearranged TCR transgenes to prevent age-associated thymic involution. *J. Immunol.* 163:4262.
 - 47.* Lilić, M., K. Kulig, I. Messaoudi, K. Remus, M. Janković, J. Nikolić-Žugić and S. Vukmanović. 1999. CD8⁺ T cell cytolytic activity independent of mitogen-activated protein kinase/extracellular regulatory kinase signaling. *Eur. J. Immunol.* 29:3971.
 - 48.* Guevara Patino, J.A., V.N. Ivanov, K.B. Elkon, E. Lacy, M.W. Marino and J. Nikolić-Žugić. 2000. TNF-α is the critical mediator of cAMP-mediated apoptosis of CD8⁺4⁺ double-positive (DP) thymocytes. *J. Immunol.* 164:1689.
 - 49.* Dyll, R., I. Messaoudi, S. Janetzki and J. Nikolić-Žugić. 2000. MHC polymorphism can enrich the T-cell repertoire of the species by shifts in intrathymic selection. *J. Immunol.* 164:1695.
 - 50.* Guevara Patino, J.A., M. W. Marino, V.N. Ivanov, and J. Nikolich-Žugich. 2000. Sex steroids induce apoptosis of CD8⁺4⁺ double-positive thymocytes via TNFα. *Eur. J. Immunol.* 30:2586.
 - 51.* LeMaoult, J., I. Messaoudi, J.S. Manavalan, H. Potvin, D. Nikolich-Žugich, R. Dyll, M.E. Weksler and J. Nikolich-Žugich. 2000. Age-related dysregulation in CD8 T cell homeostasis : kinetics of a diversity loss. *J. Immunol.* 165:2367.

- 52.* Lacorazza, H.D., C. L. Tuček-Szabo, L. V. Vasović, K. Remus and J. Nikolich-Žugich. 2001. Premature TCR $\alpha\beta$ expression and signaling in pre-thymocytes impairs thymocyte expansion and partially blocks their development. *J. Immunol.* 166:3184.
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- 57.* Messaoudi, I., J.A. Guevara Patino, R. Dyal, J. LeMaout, and J. Nikolich-Žugich. 2002. Direct link between *mhc* polymorphism, T-cell avidity and diversity in immune defense. *Science* 298:1797.
- 58.* Janković, V., I. Messaoudi and J. Nikolich-Žugich. 2003. Phenotypic and functional T-cell aging in Rhesus Macaques (*Macaca mulatta*) : differential behavior of CD4 and CD8 subsets. *Blood* 102:3244.
59. Nikolich-Žugich, J., M.K. Slifka and I. Messaoudi. 2004. The many important facets of T-cell repertoire diversity. *Nat. Rev. Immunol.* 4:123.
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 - 119.* Kusne, Y., E. Goldberg, S.S. Parker, I. Maskaykina, S.M. Hapak, T.J. Price, N. Sanai, J. Nikolich-Zugich and S. Ghosh. 2013. Contrasting effects of chronic, systemic treatment with mTOR inhibitors rapamycin and metformin on adult neural progenitors in mice. *AGE* (in press). Underlined are corresponding authors.
 - 120.* Renkema, K.R., G. Li, A. Wu, M.J. Smithey and J. Nikolich-Zugich. 2013. Two separate defects, affecting true naïve (TNa) or virtual memory (VM) T cell precursors, combine to reduce naïve T cell responses with aging. *J Immunol.* (In press).
 - 121.* Wertheimer, A.M., M.S. Bennett, B. Park, J.L. Uhrlaub, C. Martinez, V. Pulko, N. L. Currier, D. Nikolich-Zugich, J. Kaye and J. Nikolich-Zugich. 2014. Aging and cytomegalovirus (CMV) infection differentially and jointly affect distinct circulating T cell subsets in humans. *J. Immunol.* (in press).

Paper #13 was followed by a News & Views commentary in the same issue of *Nature*. Paper #57 was highlighted by a commentary in *Nature Reviews Immunology*. Papers #57, 71, 83 and 92 were noted as papers of interest by Faculty of 1000, and were ranked between "must read" and "outstanding".

Manuscripts submitted or in preparation:

Renkema, K.R. et al. The role of incomplete T-bet induction in age-related defect of CD8 T cell differentiation. (in preparation; submission by January 2014)

Uhrlaub, J.L. et al., Age-related T cell defects in response to poxvirus infections. (in preparation for January 2014)

Goldberg, E.L., M.J. Smithey, L.K. Lutes, J.L. Uhrlaub and J. Nikolich-Zugich. Immune memory-boosting dose of rapamycin curtails expansion of effector immunity against infection (submitted).

Ongoing Research Support

BAA NIHAI20100085 (Nikolich-Zugich, PI) 05/16/2011-05/15/2016 3.0 mo
ADB Contract HHSN 272201100017C
NIH/NIAID N01-AI-00017
Immune protection in Special Populations:
Role: PI Total award: \$13.8 M

5 R01 AG020719-08 Nikolich-Zugich (PI) 08/01/01 – 07/31/13 1.2 mo
NIH/NIA
T Cell Homeostasis and Function in Immune Senescence
Role: PI Total award: \$1.5M

5 U51 AI081680 Nelson (PI) 03/01/09-02/28/14 1.2 mo
NIH/NIAID
Research Centers of Excellence in Biodefense and Emerging Diseases
Nikolich-Zugich, Project 2 PI – *Broad-based strategies to improve T-cell mediated protection*
Role: Subcontract PI Total award: \$2.6M

4 U01 AI82529 Nikolich-Zugich & Picker, co-PI 04/15/09-04/14/2013 1.2 mo
NIAID/NIA
Rejuvenation of T-cell pool in advanced age
Role: PI Total award: \$850K

3 U01 AG35309 Nikolich-Zugich, (PI) 9/30/09-9/29/2013 1.2 mo
Mechanisms of reduced T-cell immunity in older adults
Role: PI Total award: \$907K
GOAL: To use complementing human and mouse models to understand why cutaneous immunity wanes in older individuals

BAA-NIAID-DAIT-NIHAI2008023 9/30/2009-9/29/2014 1.2mo
Studies of Immunosenescence and Other Late Effects of Acute Ionizing Radiation Exposure in Atomic Bomb Survivors
HHSN272200900059C
Radiation Effects Research Foundation (Nakachi, K, PI); Nikolich-Zugich (Subcontract PI) –
Project: *Effects of Radiation and Aging on T Cell homeostasis and function*
Total award to UA: \$873K
Goal: To elucidate whether and how radiation may precipitate or accelerate manifestations of aging in the immune system.

Completed Research Support in the last 5 years:

SENS Foundation - Nikolich-Zugich (PI) 12/10/08-11/09/2013 0.6 mo
Rejuvenation of the aging T-cell pool by rebalancing T-cell repertoire
Role: PI Total award: \$390K

BAA 05-11 HHSN266200500027C (Nikolich-Zugich, PI) 09/30/06-03/31/11 3.0 mo
ADB Contract N01 50027-03; NIH/NIAID

Immunological basis of age-related susceptibility to West Nile virus
Role: PI Total award: \$14.7 M

5 P01 AG023664-05 Nikolich-Zugich (PI) 06/15/04 – 05/31/10
NIH/NIA
Vaccination and Immune Senescence in Primates
Role: Program Director Total award: \$10.3M

5R01 AI066096-05 Nikolich-Zugich (PI) 07/01/05-03/31/10
NIH/NIAID
Critical parameters of CD8+ T-cell mediated protection
Role: PI Total award: \$ 1.9M

5 U01 AG021384 Nikolich-Zugich (PI) 09/01/02-08/31/07
NIH/NIA
Caloric restriction and immune senescence in primates
Goal: To understand the effects of caloric restriction on immune system and immune senescence of primates, chiefly in a Rhesus Macaque model.
Role: PI Total award: \$1.9M

Updated 12/2013