David H. Wagner, Jr., Ph.D.
Senior Investigator and Head Section of Immunology
Webb-Waring Center
and
Associate Professor
Division of Pulmonary Medicine and Critical Care
Department of Medicine
and
Department of Neurology
and
Graduate Program: Immunology/School of Medicine
Toxicology/School of Pharmacy

University of Colorado Denver Anschutz Medical Campus, Box C-321

Pharmacy Building
12850 East Montview Boulevard, Aurora, CO 80045

Chief Scientific Officer/Co-Founder, Op-T-Mune, Inc., Denver, CO 80203

Office Phone: 303-724-4787
Fax: 303-724-4705
Email: David.Wagner@ucdenver.edu

Education:

1984 B.S. (Magna cum Laude), Chemistry and Biology
King College, Bristol, TN/VA

1987 M.S. Biochemistry
East Tennessee State University, Johnson City, TN

1994 Ph.D. Biomedical Sciences
East Tennessee State University, Quillen College of Medicine
Johnson City, TN

Dissertation: *"T cell activation of macrophage IL-1 production in rheumatoid arthritis."*

1995-1990 Postdoctoral Fellowship, Immunology
Division of Immunology, National Jewish Medical and Research Center
1400 Jackson St, Denver, CO

1999-2001 Senior Postdoctoral Fellowship, Diabetes/Immunology
University of Colorado Health Sciences Center and Barbara Davis Childhood Diabetes Center, Denver, CO

Professional Experience:

2001-Present Investigator, Webb-Waring Institute for Cancer, Aging and Antioxidant Research

2001- 2008 Assistant Professor, Division of Pulmonary Medicine and Critical Care, Department of Medicine, University of Colorado Denver and Health Sciences Center

2008-present Associate Professor, Div of Pulmonary Medicine, Dept of Medicine, University of Colorado Denver
Head, Section of Immunology Webb-Waring Center, University of Colorado Denver

2011 Book Editor: Type 1 Diabetes, Volume 1: Mechanisms of T1D
2011 Book Editor: Type 1 Diabetes, Volume 2: Complications in T1D

Professional Memberships:
American Association of Immunologists
American Diabetes Association
Society for Leukocyte Biology
Immunology of Diabetes Society (IDS) of the Federation of Clinical Immunological Societies (FOCIS)

Professional Activities:
Invited Talks

2015, Speaker, American Association of Immunologists, New Orleans, LA
2014, Invited Guest Lecturer, Department of University of Louisiana Health Sciences Center, Center for Cardiovascular Diseases and Sciences, Departments of Pathology, Molecular and Cellular Physiology, and Cell Biology and Anatomy

2014, Invited Speaker, AAI, Pittsburgh, PA

2014, 05/03/2014 Panel Discussion Leader, Colorado Chapter of American Diabetes Association meeting, Red Rocks, Morrison, CO
2014, 04/15/2014 Diabetes update, Board of Directors, Colorado Chapter of American Diabetes Association

2013, Invited Plenary Speaker, Aegean Conference, 6th International Conference on Autoimmunity: Mechanisms and Novel Treatments

2013, Panel Discussion Leader, Colorado Chapter of American Diabetes Association meeting "Perspectives in managing Diabetes, Vail, CO

2013, Invited Guest Speaker, University of Alabama Birmingham, "The role of CD40 in Type 1 Diabetes, diagnosing pre-diabetes"

2012, 1) AAI, Boston MA "The role of CD40 in multiple sclerosis"

2) AAI, Boston MA "CD40 in experimental autoimmune encephalomyelitis"

2012, Barbara David Center JDRF Basic Research Symposium, Denver, CO

2012, University of Medicine and Dentistry New Jersey, Newark, NJ."The role of CD40 in type 1 diabetes"

2012, University of Colorado Denver, Department of Neurology. "The role of CD40 in diagnosing multiple sclerosis"

2012, Medical College of Wisconsin, Wisconsin Blood Center, Milwaukee WI. "CD40 induces TCR revision to promote autoaggressive T cell development"

2011, 5th Aegean Conference, Mechanisms and Treatment of Autoimmunity. Plenary Speaker "CD40 as a common mediator in autoimmunity, MS and T1D." Crete, Greece, October, 2011.

2011, Barbara Davis Center, Juvenile Diabetes Research Foundation, Basic Research Symposium, Denver, CO

2009 4th Aegean Conference, Mechanisms and Treatment of Autoimmunity. Plenary Speaker "Common Mechanisms in T1D and MS: A Role for Th40 cells." Crete, Greece, October, 2009.

2009 12th International Conference on TNF-Superfamily Members, San Lorenzo, Spain. Plenary Speaker "CD40 expression Identifies Pathogenic T cells in Autoimmunity". March, 2009

2008 Invited Speaker, Society for Leukocyte Biology "Th40 cells in type 1 diabetes and multiple sclerosis", Denver, CO

2007 Federation of Clinical Immunology Societies, San Diego, CA. *Immuno-Modulatory Mechanisms,* Title: "CD40 Isoform Differences and Micro-domain Localization Explain Preferential Survival of $CD4^{+}CD40^{+}$ T Cells in Autoimmunity"

2006 Keystone Symposium **Tolerance and Autoimmunity** *Plenary Session, Translating Tolerance to the Clinic,* Title: *"*Of Mice and Man: Translation of Autoaggressive T cells from NOD mice to Human type 1 diabetes"

2005 Federation of the American Societies for Experimental Biology, American Association of Immunologists, Boston MA.

1) *Mechanisms of T cell Activation*, Title: "CD40 Promotes Homeostatic Disruption of the autoaggressive to regulatory T cell ratio in NOD mice"

Federation of Clinical Immunology Societies, San Francisco, CA. *T cells and Autoimmunity,* Title: "Identification of autoaggressor T cells in human Type 1 diabetes"

Session Chair

2014, Block Symposium Chair, American Association of Immunologists (AAI), Pittsburgh PA

2011, AAI, **Session Chair**, Mechanisms in Autoimmunity Block Symposium, San Francisco, CA

2010 Session Chair and presenter, Plenary Session: Mechanisms of T cells in Autoimmunity, Title: "$CD40^{+}$T cells in human and mouse type 1 diabetes" Federation of the American Societies for Experimental Biology, American Association of Immunologists, San Diego, CA

2009 Session Co-chair: "Pathogenesis of Type 1 Diabetes", FASEB/AAI

2005 Aegean Conferences, Santorini Greece: Mechanisms and Treatment of Autoimmunity,

2004 Federation of the American Societies for Experimental
Biology, American Association of Immunologists, Washington, D.C.
Symposium: Mechanisms of Tolerance, Title: “CD40 Induces Breach of Tolerance in A Unique T cell Subset

Grant Reviews/Study Sections:
2014 – 2018: Member, NIH Study Section, Neurologic Drug Discovery, ETTN-M;

2009 – 2015 Regular Member, American Diabetes Association Grant Review Panel

2014, NIH, EMNR-S10 Study Section, Endocrinology, Metabolism, Nutrition and Reproductive Sciences

2014 JDRF, Review Panel
2014 NIH/HAI Study Section, Ad Hoc

2012, 2013, NIH/NCI Cancer and Immunology Emphasis Panel

2010, 2011 Ad Hoc National Institutes of Health, Center for Scientific Review Study Section, Hypersensitivity, Autoimmunity and Immune-Related Diseases (HAI)

2009 Ad Hoc, HAI Study Section
2008 Ad Hoc Reviewer, Susan Komen Breast Cancer Research
2009, 2010 American Institute for Biological Sciences (Department of Defense, Congressionally Directed Medical Research Programs) Ad Hoc Reviewer
2005 Ad Hoc reviewer National Institutes of Health HAI-Study Section
2004 Ad Hoc reviewer National Institutes of Health HAI-Study Section

Professional Awards:
2013 American Association of Immunologists Travel Award, AAI meeting Honolulu HA

2007-2012 Thomas R Lee Award for most outstanding career development award, American Diabetes Association

2007 Federation of Clinical Immunology Societies, San Diego, CA., Travel Award

2006 Federation of Clinical Immunology Societies, San Francisco, CA, Travel Award

2005 Junior Faculty Award, American Association of Immunologists, San Diego, CA

2003 Pfizer-Showell National Junior Faculty Award, American Association of Immunologists, New Orleans, LA
1999 Gitzen Fellowship, National Jewish Medical and Research Center, Denver, CO, Excellence in Immunology

Journal Reviewer:
Trends in Immunology
Journal of Immunology

Journal of Endocrinology
Journal of Leukocyte Biology
Clinical and Experimental Immunology
Journal of Experimental Medicine
Clinical Immunology
Expert Review of Clinical Immunology
Diabetologia
Diabetes

Teaching:

2015 Full Appointment to University of Colorado Denver Graduate Faculty/Immunology, School of Medicine

2014, Faculty Advisor for PhD candidate, Joshua Sloane

2014 PhD Thesis committee for Scott Thompson / Immunology Graduate Student

Appointment to Toxicology Graduate Program
Appointment to Neuroscience Program

2014- Faculty Advisor for Dr. Martin Yussman, MD. Dr. Yussman is a board certified, practicing cardiologist who has joined the Webb-Waring Center to pursue research in atherosclerosis and other cardio-vascular disease. Dr. Yussman is particularly interested in my CD40-mediated research and controlling inflammation through the CD40/CD154 pathway.

2013-2015, Creating a Research In Progress program for a combined, SOM, SOP research initiatives. This involves Faculty, Postdocs and Graduate Students Pharmacy and Medical Students and Graduate program students meeting monthly for research updates.

2013 - 2015 Student coordinator/Faculty Advisor, Colorado Undergraduate Student Program (CUSP) an NIH sponsored minority student development program. This involves organizing student events, class organization, and involvement with Office of Diversity etc.

2013 - 2015, Lecturer, CUSP program (3 lectures)

2012- 2014, Moderator, New Faculty, Postdoc and Grad Student Forum, UC Denver Anschutz campus (This is a yearly Forum sponsored by the Graduate School, School of Medicine, and the UC Denver Postdoctoral Student Division).

2013 - 2016, Faculty Advisor for Medical Student, Dan Nguyen. This includes development of a research program for Mr. Nguyen during his medical school tenure. This is a 4 year program.

2005-2006 Faculty advisor for medical student Dan Craig

2014 - 2017, Faculty Advisor for Medical Student, Jonathan Repine. This includes development of a research program for Mr. Repine during his medical school tenure. This is a 4 year program.

Faculty Advisor for summer students:

2015 Chelsea Peterson (Junior, Baylor University)
2014 Laura Perdomo (Junior, Yale University)

2013:

Erica Rivera (2nd year medical student at Johns-Hopkins School of Medicine)
Chelsea Viscardi
Sam White (2nd year medical student at New York Medical College)
Clayton Smith (1st year medical student at University of Colorado School of Medicine)

This involves organizing a class on medical research, lecturing and helping to design research projects.

2012, Fall Semester, Faculty Advisor for Craig Mothorpe (UCD Auraria campus student). This was a directed study class.

2009 - 2012, Faculty Advisor for Mr. Michael Olmstead. (UCD Auraria campus student). This was a directed study class.

2012 Student Coordinator, CUSP program

2012 Faculty Advisor for students:

Sam White
Alejandro Sigela (enrolled in UC Denver masters program in advanced anatomty)

2009: Faculty Advisor for Blake Breitmeyer, UCCS student.

This involves organizing a class on medical research, lecturing and helping to design research projects.

2011: Authored a Course Text book for basic immunology class for UCCS undergraduate and Anschutz Medical students

2007 – 2010 Faculty Advisor for 2nd year medical student, Daniel Craig. This involved a directed research study/project for Mr. Craig that he completed during his medical school training. Dr. Craig is currently enrolled in the Neurosurgery Residency program UCD.

Classroom Teaching:

Co-Course Director 2003 - 2010 Biology/ General Immunology University of Colorado Colorado Springs. This involves organizing classes, organizing lecturers, giving lectures, creating tests and co-authoring a course text book.

Co-Course Director 2006 - 2007 Methods in Immunology Univ. Colo at Colorado Springs. Same as above.

2007 Faculty Advisor for:

Caitlin Broe
Luke Domaleski (2nd year medical student at George Washington School of Medicine)

This was a directed study involving lectures, and designing and assisting to implement independent research projects.

2006: Faculty Advisor
Luke Domaleski
Michael Ross (4th year medical student at Gerogetown University School of Medicine)

2004: Faculty Advisor:
Elizabeth Callaway
Alex Gart

2003: Faculty Advisor:
Elizabeth Callaway

2001: Faculty Advisor:
Sarah Bowman

Co-course Director and Instructor 2005 Advanced Immunology UCCS (6 lectures over the semester)

Instructor 1998-2003 Immunology UCCS

Lecturer 2001 Micro/Immuno. UCHSC-School of Nursing

Lecturer 2001 Micro/Immuno. UCHSC-School of Dentistry

University Service:
2008 – 2011 Institutional Animal Care and Use Committee, Vice-Chair
2004 – 2007 IACUC

Collaborations:
Steve Miller, PhD, Director, Interdepartmental Immunobiology Center, Judy Gugenheim Research Professor of Microbiology-Immunology, Professor, Microbiology-Immunology, Professor Dermatology, Feinberg School of Medicine at Northwestern University, Chicago, IL

Paco Herson, PhD, Associate Professor, Dept of Anesthesiology University of Colorado Denver: The role of the immune system in stroke and cardiac arrest

Peter Gottlieb, MD, Professor of Pediatrics, UCD and Barbara Davis Childhood Diabetes Center, Denver: The role of Th40 cells in type 1 diabetes

John Corboy, MD, Co-director Rocky Mountain MS Center, Professor Dept of Neurology: the role of Th40 cells in multiple sclerosis

Teri Schreiner, MD Senior Fellow, Dept of Neurology: Better understanding the role of Th40 cells in MS

Milene Saavedra, MD, Associate Professor, Pulmonary/National Jewish Medical Research Center, Denver CO: the role of immune cells in cystic fibrosis

David Bleich, MD, Professor and Chair Endocrinology the University of Dentistry and Medicine New Jersey, Newark NJ: Driver T cells in human type 1 diabetes

Martin Hesner, PhD, Professor, Wisconsin Blood Center, Medical College of Wisconsin, Milwaukee WI: Th40 cells as diagnostic indicators in T1D.

Book and Journal Editorial Boards:

Editor: 2011, Type 1 Diabetes: Pathogenesis, Genetics and Immunotherapy. INTECH Publishing Inc.,

Editor 2011, Complications in Type 1 Diabetes. INTECH.

Associate Editor	2012	Conference Papers in Immunology/ Online journal
Senior Editor	2013	American Journal of Clinical and Experimental Immunology
Senior Editor	2014	American Journal of Current Immunology
Editor	2014	Medical Genetics and Biomarkers
Editor	2014	International Journal of Science

Peer Reviewed Publications:

Vaitaitis, GM and Wagner DH. 2015 "Controlling type 1 diabetes using a small peptide". Diabetes, American Diabetes Association, published abstract in *Diabetes.*

Deng, G, Carter, JR, Traystman, RJ, **Wagner, Jr., DH**, and Herson, P.S. 2014. Pro-inflammatory T-lymphocytes rapidly infiltrate into the brain and contribute to neuronal injury following cardiac arrest and cardiopulmonary resuscitation. *J Neuroimmunol*. 270:75-85

Vaitaitis, GM, Olmstead, MH, Waid, DM, Carter, JM and **Wagner Jr., DH**. 2014. A CD40-targeted peptide controls and reverses Type 1 Diabetes in NOD mice. *Diabetologia. 57:2366-73.*

Waid, D. M., T. Schreiner, G. Vaitaitis, J. R. Carter, J. R. Corboy, and **D. H. Wagner, Jr**. 2014. Defining a new biomarker for the autoimmune component of Multiple Sclerosis: Th40 cells. *J Neuroimmunol* 270:75-85.

Vaitaitis, G. M., and **D. H. Wagner Jr**. 2013. CD40 interacts directly with RAG1 and RAG2 in autoaggressive T cells and Fas prevents CD40 induced RAG expression. . *Cell Mol Immunol.10:483-489*

Vaitaitis, G. M., J. R. Carter, D. M. Waid, M. H. Olmstead, and **D. H. Wagner, Jr**. 2013. An Alternative Role for Foxp3 As an Effector T Cell Regulator Controlled through CD40. *J Immunol*. *In Press*.

Wagner Jr., DH. 2012 "The specific antigen approach in multiple sclerosis: Can it ever be enough?". Clin. Immunol. Clin. Immunol. *144(2):139-141*

Vaitaitis GM and **Wagner Jr., DH.** 2012. Galectin-9 Controls CD40 Signaling through a Tim-3 Independent Mechanism and Redirects the Cytokine Profile of Pathogenic T Cells in Autoimmunity. *PLoS ONE* 7(6): e38708. Published online 2012 June 7. doi: 10.1371/journal.pone.0038708.

Carter, JR, Vaitaitis, GM, Waid DM and Wagner Jr, DH. "CD40 Engagement Ablates CTLA-4 Expression on Th40 Effector Cells: A Mechanism for Breach of Tolerance" *2012,* Eur. J. Immunol.

Wagner Jr, DH. 2011, “The role of T cells in type 1 diabetes”. Book Chapter. Type 1 Diabetes ", ISBN 978-953-307-362-0.

Kelsey Chow, Ujala Rana, Karen Helm, **David Wagner** and Susan Majka**.** Isolation and Characterization of Mouse Lung Mesenchymal Stem Cells. JoVE. 3/2011.

Jun, D. H., C. Garat, J. West, N. Thorn, K. S. Chow, T. Cleaver, T. Sullivan, E. C. Torchia, C. Childs, T. Shade, M. Tadjali, A. Lara, E. Nozik-Grayck, S. Malkoski, B. Sorrentino, B. Meyrick, D. J. Klemm, M. Rojas, **D. Wagner, Jr**., and S. Majka. The Pathology of Bleomycin Induced Fibrosis is Associated with Loss of Resident Lung Mesenchymal Stem Cells Which Regulate Effector T-Cell Proliferation. *Stem Cells*. Epub, March 2011.

Vaitaitis, GM and **Wagner Jr., DH**. 2010. “CD40 glycoforms and TNF receptors 1 and 2 in the formation of CD40 receptors and CD40 signaling impact on glycosylation status in autoimmunity” Mol Immunol. 47(14):2303-13.

Vaitaitis, GM, Waid, DM and **Wagner, Jr., DH**. 2010. “The expanding role of TNF-Receptor Super Family member CD40 (tnfrsf5) in Autoimmune Disease: Focus on Th40 cells.” Current Immunology Reviews, 6(2): 130-136

Wagner, D. H., Jr. 2009. The co-evolution of our understanding of CD40 and inflammation. *Diabetologia* 52:997-999.

Vaitaitis, G. M., and **D. H. Wagner, Jr**. 2008. High distribution of CD40 and TRAF2 in Th40 T cell rafts leads to preferential survival of this auto-aggressive population in autoimmunity. *PLoS ONE* 3:e2076.

Baker, R. L., **D. H. Wagner, Jr.**, and K. Haskins. 2008. CD40 on NOD CD4 T cells contributes to their activation and pathogenicity. *J Autoimmun* 31:385-392.

Waid, D. M., G. M. Vaitaitis, N. D. Pennock, and **D. H. Wagner, Jr.** 2008. Disruption of the homeostatic balance between autoaggressive (CD4+CD40+) and regulatory (CD4+CD25+FoxP3+) T cells promotes diabetes. *J Leukoc Biol* 84:431-439.

Siebert, J. C., M. Inokuma, D. M. Waid, N. D. Pennock, G. M. Vaitaitis, M. L. Disis, J. F. Dunne, **D. H. Wagner, Jr.**, and H. T. Maecker. 2008. An analytical workflow for investigating cytokine profiles. *Cytometry A* 73:289-298.

Pennock, ND, Craig, DB, Vaitaitis, GM, Waid, DM and **Wagner Jr., DH**. 2008. “CD5, CD28 and CD40 as interconnected co-stimulatory/immune-modulators of T cells responses in the NOD, NOR and BALB mouse strains.” *FASEB J April 5, 2008 22:663.15*

Vaitaitis, GM, Pennock ND, Baker, RL, Barbour GM, Haskins K and **Wagner Jr. DH**. 2008 “TCR revision as a mechanism of Peripheral Tolerance. FASEB J April 5, 2008 22:669.22.

Vaitaitis GM, Waid, DM, Pennock, ND and **Wagner Jr. DH**. 2008 CD40 disruption of atuoaggressive (CD4+CD40+) to regulatory (CD4+CD25+FoxP3+) T cell homeostasis promotes diabetes. FASEB J. 22:848.17.

Waid, DM, Wagner, BA, Putnam, Vaitaitis, GM, Pennock, ND, Calverley, DC, Gottlieb, PA, **Wagner Jr., DH**. 2007 “A unique T cell subset described as CD4loCD40+ (TCD40) in human type 1 diabetes” *Aug; 124(2):138-148. Epub June 8, 2007*

Wagner, Jr., D. H. 2007. “Reshaping the T cell repertoire: TCR editing and TCR revision for Good and for Bad.” Clin. Immunol Apr 123 (1): 1-6.

Waid, DM, Vaitaitis, GM, and **Wagner Jr., D.H**. 2004. Peripheral CD4loCD40+ Auto-Aggressive T Cell Expansion During Insulin-Dependent Diabetes Mellitus. *Eur. J. Immunol* 34:1488-1497.

Vaitaitis, GM, Poullin, M., Sanderson, RJ, Haskins, KJ, and **Wagner, Jr., DH**. 2003. CD40 Induced Expression of Recombinase Activating Gene (RAG) 1 and RAG 2: A Mechanism for The Generation of Autoaggressive T Cells in The Periphery. *Cutting Edge, J. Immunol. 170:3455-3459.*

Wagner, DH, Jr., G. Vaitaitis, R. Sanderson, M. Poulin, C. Dobbs, and K. Haskins. 2002. Expression of CD40 identifies a unique pathogenic T cell population in type 1 diabetes. *Proc Natl Acad Sci U S A 99:3782-3788.*

Wagner, Jr., DH, E. Newell, R. Sanderson, J.H. Freed, and M.K. Newell. “Increased expression of CD40 on thymocytes and peripheral T cells in autoimmunity: A mechanism for acquiring changes in the peripheral T cell repertoire.”1999. *Intr. J. Mol. Med*. 4:231-242.

Huber SA., **DH, Wagner Jr.,** J.E. Stone, J. Kupperman, L. Pfeiffer, C. David, R L. O’Brein, G. S. Davis, and M.K. Newell. 1998. “□□+ T cells regulate MHC class II (IA and IE)-dependent susceptibility to coxsackievirus B3-induced autoimmune ocarditis.” *J. Virol*. 73:5630-5636.

Poe J.C., **Wagner Jr., DH**, Miller, R.W., Stout, R.D., and Suttles, J. 1997. " Role of protein tyrosine kinase activity in CD40 signaling of NF□B activation and interleukin-1B synthesis in monocytes: modulation by interleukin-4 and interleukin-10." *J. Immunol*. 159 (2):846-852.

Wagner Jr, DH, J. Hagman, P.S. Linsley, W.H. Hodsdon, J.H. Freed, and M.K. Newell. 1996. "Rescue of thymocytes from glucocorticoid-induced cell death mediated by CD28/CTLA-4 costimulatory interactions with B7-1/B7-2." *J. Exp. Med*. 184:1631-1638.

Wagner Jr., DH, R.D. Stout, and J. Suttles. 1994. “Role of the CD40-CD40 ligand interaction in CD4+ T cell contact-dependent activation of monocyte interleukin-1 synthesis. *Eur. J. Immunol*. 24:3148-3154-3164.

Wagner Jr., DH, and Suttles J. 1993." Cognate T cell signaling of monocyte inflammatory cytokine production. "*J. Immunol*. 150:135.

Published Abstracts: 27

Grant Support:

Pending 2015:

Submitted:	NIH, STTR	$2.5M
	NIH, STTR	$332K
	NIH, R01 (June, 2015)	$1.8M
	NIH, R21	$426K

NMSS	$742K
Helmsley Charitable Trust	$500K
NIH, R01 (Oct, 2015)	$1.8M

NIH/NIAID, R21 2013 – 2015. PI. Total Award $275,000. This grant is to develop a new drug opportunity for treating Type 1 Diabetes.

NIH/NIAID, R41 2014 – 2015. PI. Total Award $211,000. This grant is to develop a new drug opportunity for treating multiple sclerosis.

Helmsley Charitable Trust, 2014 – 2015, Total Award: $100,000. Developing a method to preserve beta cell integrity in T1D.

State of Colorado Technology Developmental Award, 2014-2015, PI Total Award, $178,836 An Award for development of a small therapeutic molecule to treat MS.

American Diabetes Association, Translational Award, 2013 – 2016. Total Award $660,000. "Th40 levels and type 1 diabetes risk". The aims of the grant are to determine how Th40 cell levels in the periphery of T1D patients and pre-diabetic patients relate to disease course.

The National Multiple Sclerosis Society, Clinical Science Award, 2013 – 2016. Total Award: $660,000. "The role of Th40 cells in MS: Prediction and Treatment". The aims of this grant are to examine Th40 cells as predictive in human MS and control CD40 interactions as a potential treatment option.

Contract support: Op-T-Mune Inc., Denver CO. Total Award: $12,000. The aims are contract work for the company Op-T-Mune.

***Previous Funding**:*
State of Colorado Technology Developmental Award, 2013-2014, PI Total Award, $168,400 An Award for development of a small therapeutic molecule to treat type 1 diabetes.

NIH/NICHD: SBIR Phase I to OP-T-Mune Co-Investigator/Contractor (Wagner) PI is Peter Nelson. 2012-2013. Total Award $300,000. The aims of this grant are to develop a clinical blood test to improve type 1 diabetes diagnosis. Phase II total award, $1,500,000 Under review.

University of Colorado Denver School of Medicine Bridge Funds. 2013. PI., $50,000 (returned $30,000 due to acquisition of 2013 grants).

National Institutes of Health (NIDDK) 1R01DK075013-01A2 PI 08/01/07 – 07/31/12 *CD40 Induction of RAG1 and RAG2: A Mechanism for Autoimmunity Total Award, $1,590,502*
The aims of this grant are to determine how CD40 T cells arise and the nature of their function in normal immunity. Further it will be determined how these T cells progress to pathogenicity.

American Diabetes Association, Career Development Award, PI Total Award $990,000
01/01/08 – 12/31/12 *CD40 As A Biomarker in Type 1 Diabetes*
The aims of this grant are to understand the signaling capacity of CD40 in auto-aggressive T cells. Five different isoforms of CD40 are detected and T cells express an atypical combination. Furthermore, T cells from autoimmune mice and human subjects express different CD40 isoform combinations than cells from non-autoimmune subjects. This grant will delineate those differences

and determine how different CD40 isoform configurations affect CD40 signaling in autoimmune versus non autoimmune conditions.

Juvenile Diabetes Research Foundation: PI 06/01/2008 – 06/01/ 2011. Total Award $660,000/year "Common Mechanisms in Autoimmunity: A role for Th40 cells." The aims of this grant are to determine how Th40 cells in human T1D and MS affect the disease process.

Kleberg Foundation: *PI. 2011* Role of CD40 in Vaccine Development: Tuberculosis Study. Total Award, $214,250.

State of Colorado Technology Developmental Award, 2010, PI Total Award, $142,428 An Award for development of a small therapeutic molecule to treat type 1 diabetes

National Cystic Fibrosis Foundation: Co-PI (Wagner) / PI Dr. Milene Saavedra, 2009 – 2012. Total Award, $210,000. The aims are to measure immune response in the lungs of CF patients.

Kleberg Foundation*: 2002- 2010: T cells and Tuberculosis Total Award $1,151,200*

NIH, ARRA funds, 2010**,** PI Supplemental Funding, Total Award, $168,000

American Diabetes Association Junior Faculty Award*, PI* 01/01/03 – 01/01/06 $424,000
CD40 Prevents AICD in Auto-Aggressive T cells
This grant proposal compares the responses of auto-aggressive T cells and regulatory T cells in modes of activation induced cell death, including the role of NF□B.

Juvenile Diabetes Research Foundation Regular Research Grant, *PI* 11/01/03 – 10/31/06
#1-2003-703 $450,000
Development of Auto-Aggressive T Cells in IDDM: The aims of this grant are to examine the expansion of CD40+, autoaggressive T cells specifically focusing on T cell receptor expression and altered expression using the nonobese diabetic (NOD) mouse model.

Juvenile Diabetes Research Foundation Transitional Award $100,000 "
The role of CD40 in diabetogenic T cells" The aims of this grant were to establish CD40 as a T cell molecule, describe how CD40 T cells affect diabetetogenesis and attempt to control the now identified pathogenic, i.e. autoaggressive T cells.
01/01/2002 – 12/31/2002

Juvenile Diabetes Research Foundation Advanced Postdoctoral
Fellowship $231,000
"The role of CD40 in diabetogenic T cells" The aims of this grant were to establish CD40 as a T cell molecule, describe how CD40 T cells affect diabetetogenesis and attempt to control the now identified pathogenic, i.e. autoaggressive T cells.
01/01/2000 – 12/31/2002

1996 NIH, NRSA, Post-doctoral Fellowwhip National Jewish Medical Research Center

Community Involvement:

2015, Program Committee, Project Angel Heart, Taste for Life

2015, Community Leadership Board of Directors, Colorado, Wyoming, Montana, American Diabetes Association.

2014 Board of Directors, Help A Diabetic Child Foundation

Board of Directors 2000-2005
Howard Dental Center for HIV/AIDS patients

Board of Directors, Liberty Fund
Denver, CO

2015, ***Active Candidate*** *Democratic Party: University of Colorado Regent, Congressional District 1.*

Delegate, Colorado State Democratic Party Central Committee 2013 - 2016
Member, Colorado State Democratic Party Finance Committee, 2014 - 2016

Patents:

1999 "USE OF CD40 ENGAGEMENT TO ALTER T CELL RECEPTOR USAGE"
Patent Executed in 2001

2003 "METHODS FOR PREDICTING DEVELOPMENT OF AUTOIMMUNE AND TREATMENTS OF THE SAME"
Office Action, July 2007

2009 "Peptides for modulating T cell activity and uses thereof" Published, 06/2012

2014 Provisional Application No. 61/972,114 Title: *Diagnosis of Multiple Sclerosis in Human and Animal Subjects* Filed: 3/28/2014

Co-Founder Op-T-Mune, Inc.

2012 – present: Chief Scientific Officer, Op-T-Mune, Inc., Denver Co. The purpose of Op-T-Mune is to further develop intellectual properties from the Wagner Laboratory.