

CURRICULUM VITAE

DOMINIC P. D'AGOSTINO, PH.D.
JANUARY 2016

OFFICE ADDRESS:

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Morsani College of Medicine
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EDUCATION:

- 1994- 1998: B.S. Nutritional Sciences and Biological Sciences, Cook College, Rutgers University, New Brunswick, NJ
- 1999~2004 Ph.D. Neuroscience and Physiology; Division of Pulmonary and Critical Care Medicine; Graduate School of Biomedical Sciences; Rutgers University, Robert Wood Johnson Medical School, University of Medicine and Dentistry of NJ (UMDNJ), New Brunswick, NJ

Doctoral Dissertation: "[Heme oxygenase is necessary for hypoxic chemosensitivity of cultured rostral ventrolateral medulla neurons](#)"

September 3, 2004; UMDNJ-RWJMS (MEB)

Mentor: Judith A. Neubauer, Ph.D.

ACAMEDIC EMPLOYMENT AND RESEARCH EXPERIENCE:

- 2004~2006: Postdoctoral Fellow (Mentor: Prof. Jay B. Dean)
Department of Neuroscience, Cell Biology and Physiology)
Wright State University Boonshoft School of Medicine, Dayton, OH
- 2006~2008: Postdoctoral Fellow (Mentor: Prof. Jay B. Dean)
Molecular Pharmacology and Physiology
University of South Florida Morsani College of Medicine, Tampa FL
- 2008~2010: Research Assistant Professor (Non-Tenure Track)
Molecular Pharmacology and Physiology
University of South Florida Morsani College of Medicine, Tampa FL
- 2010~2015: Assistant Professor (Tenure Track)

Molecular Pharmacology and Physiology
University of South Florida Morsani College of Medicine, Tampa FL

2014~Present: Visiting Senior Research Scientist
Florida Institute for Human and Machine Cognition (IHMC)
Ocala, FL 34471

PROFESSIONAL MEMBERSHIPS

American Physiological Society (APS)
Society for Neuroscience (SfN)
Undersea and Hyperbaric Medicine Society (UHMS)
Aerospace Medical Association (AsMA)
American Association for Cancer Research (AACR)
National Academy of Inventors
University of South Florida President's Council

AWARDS

1996: Cook College/Rutgers Undergraduate Educational Assistance Award
1999: Predoctoral Fellowship Award (5 yrs), UMDNJ-RWJMS
2000: Graduate Student Respiratory Physiology Award, FASEB
2003: Graduate Student Respiratory Physiology Award, FASEB
2003: Proctor and Gamble Professional Award in Physiology, FASEB 2003
2005: Best Overall Clinically Related Presentation, Undersea and Hyperbaric Medicine Society (UHMS)
2005: Postdoctoral Fellowship Award (3 yrs), Office of Naval Research (ONR)
2014: Allentown High School Hall of Fame Lifetime Achievement Award

EDITORIAL BOARDS

Journal of Applied Physiology
International Archive of Research on Fitness (IARF)
Oxford University Press

COMMITTEES/ SERVICE

University of South Florida; Comparative Medicine; Institutional Animal Care and Use Committee (IACUC)
USF Doctoral Student Molecular Pharm and Physiology Program in Integrated Biomedical Sciences
USF Health Sciences Research Day Posters
USF Morsani College of Medicine Curriculum Committee for Medical Education
USF Morsani College of Medicine Research Committee

ADVISORY BOARDS

2014: Advisor: Expert Panel for FDA Generally Recognized as Safe (GRAS) Determination of Glycerol Tris *D,L*-3-Hydroxybutyrate for Medical Food
2012: Scientific Advisory Board Member: Winning the Fight against Neurodegenerative Diseases (WFND; ALS Foundation), Tampa, FL

2012: Scientific Advisory Board Member: Cognate Nutritionals
 2013: Scientific Advisory Board Member: Max Love Project (501c3)
 2014: Scientific Advisory Board Member: Ketone Research and Development (KRD)
 2015: Advisory Board Member: Keiser University
 2015: Scientific Advisory Board Member: VIRT A Health
 2015: Scientific Advisory Board Member: Anemone LLC
 2015: Board Member: Kids Misdiagnosed Organization
 2016: Task Force Dagger Foundation: Special Operations Forces (SOF) Health Initiatives
 2016: National Hyperbaric Association (NHA)

STUDY SECTIONS/ GRANT REVIEW

2013: **Reviewer:** USF-Moffitt Anna D. Valentine Cancer Research Award Grants
 2012~2014: **Ad Hoc Reviewer:** Department of Veterans Affairs: VA Merit Grant Review; Neurobiology-A (NURA) and Neurobiology-B (NURB)
 2014~Present: **Regular Member Reviewer:** Department of Veterans Affairs: VA Merit Grant Review Neurobiology-B (NURB)

PEER REVIEW SERVICE (AD-HOC REVIEWING)

High Altitude Medicine and Biology
 Neuroscience
 Free Radicals in Medicine and Biology
 Epilepsia
 Respiratory Physiology & Neurobiology
 Epilepsy Research
 PloS One
 Nutrition & Metabolism
 Respiratory Physiology & Neurobiology
 International Journal of Sports Nutrition (ISSN)
 Journal of Lipid Research
 Comprehensive Physiology
 Journal of Sports Science and Medicine
 International Journal of Cancer
 Journal of Neuro-Oncology
 Oncotarget

TEACHING

Lecturer: Course Title: Cells, Tissues, Organ Systems (CATOS): Five Lectures: *Signaling I, II, III; Receptors I, II*; Medical Year 1, Wright State University Boonshoft School of Medicine, Dayton, OH
Lecturer: Course Title: Applications of Nanotechnology: *Biological Applications of Atomic Force Microscopy*; Wright State University School of Medicine, Dayton, OH
Lecturer: Course Title: Principles of Pharmacology; *Dietary Effect on Drug Absorption and Metabolism*; GMS 6513, USF, Tampa, FL
Lecturer: Course Title: Neuropharmacology; *Dopamine, Antipsychotics and Excitatory Amino Acids*; GMS 6735; USF, Tampa, FL
Major Professor: Directed Undergraduate Research GMS 7910; USF, Tampa, FL

Lecturer: Course Title: Membrane Physiology; *Redox-Modulated Ion Channels*, GMS 6433, USF, Tampa, FL

Major Professor: Laboratory Rotations in Biomedical Science; GMS 6942; USF, Tampa, FL

Major Professor (4 Ph.D. Students): Directed Doctoral Dissertation Research; GMS 7980 USF, Tampa, FL

Major Professor (4 Ph.D. Students): Graduate Seminar; GMS 7939 002 USF, Tampa, FL

Lecturer: Course Title: Basic Medical Biochemistry; *Reactive Oxygen Species (ROS) and Oxidative Stress in Disease Processes*, GMS 6202, USF, Tampa, FL

Lecturer: Course Title: Foundations in Biomedical Sciences; *Reactive Oxygen Species (ROS)*, GMS 6001; USF, Tampa, FL

Lecturer: Advanced Respiratory Pathophysiology; Medical Year 4; Obstructive and Central Sleep Apnea, MDT8200E.A51M13; USF, Tampa, FL

Course Director: Advanced Studies in Metabolism and Signaling; GMS 7930; USF, Tampa, FL

TRAINING EXPERIENCE AT USF:

Postdoctoral Fellows/Supervised/Co-Supervised/Trained

Dr. Angela M. Poff

Dr. Csilla Ari

Dr. Raffaele Pilla

Dr. Heather Held

Dr. Tina Fiorelli

Doctoral Degree Training

2010~2014 **Major Professor**, Ph.D. Program: Angela Poff

2010~2015 **Major Co-Professor**, Ph.D. Program: Shannon Kesl

2012~Present **Major Professor**, Ph.D. Program: Nathan Ward

2014~Present **Major Professor**, Ph.D. Program: Andrew Koutnik

2011~2015 **Major Professor (2012-13) and Committee Member**, Ph.D. Program: Dianna Hernandez

2012~Present: **Committee Member**, Ph.D. Program: Geoffrey Ciarlone

2012~Present: **Committee Member and Collaborator**, Ph.D. Program: Stephanie Ciarlone

2011~2015: **Committee Member**, Ph.D. Program: Clare Edwards Canfield

2011~Present: **Committee Member**, Ph.D. Program: Jamileh J. Ahmed

2009~2013: **Committee Member and Collaborator**, Ph.D. Program: Milene Brownlow

2008~2013: **Committee Member**, Ph.D. Program: Adam Smith

Master's Degree Training and Committees

2012~2015: **Committee Member**, M.S. Ryan J. Colquhoun

2012~2015: **Committee Member**, M.S. Roberto E. Flores

Undergraduate Directed Research and Research Assistant Training

2015~Present: Karina Bach (Honors College)
2012~Present: MSP3 Student; Craig Goldhagen
2012~2014: MSP3 Student; Ashley Van Putten
2013~2014: MSP3 Student; Gabrielle Dimattia
2012~2014: Nicholas Mavromattes
2014~2015: Cem Murdin
2012~2013: Jacob Sherwood
2009~2010: Jaimie M. Luke
2008~2010: Jaime Lago

High School Mentoring

2010~Present: BBBS Tampa Bay Mentor: James Tyler

SUMMARY OF RESEARCH PROGRAM:

Our laboratory develops and tests metabolic-based therapies, including calorie restricted diets, ketogenic diets, exogenous ketogenic agents and metabolic-based drugs that target specific pathways linked pathophysiologically with seizure disorders, neurodegenerative diseases, metabolic dysregulation, cancer, muscle wasting and exercise performance. To investigate the mechanism of these pathologies we use a variety of *in vivo* and *in vitro* techniques, including radio-telemetry (EEG, EMG), electrophysiology, fluorescence microscopy, confocal microscopy, atomic force microscopy (AFM), electron microscopy, histology, biochemical assays, metabolomics, toxicology, *in vivo* bioluminescence imaging, spectrophotometry, behavioral testing and motor function testing. My work has adapted and utilized radio-telemetry, confocal microscopy and AFM for use inside environmental chambers. These tools allow us to conduct whole-animal, tissue and cellular studies under a broad range of oxygen concentrations and gas pressures to simulate extreme environments or cellular hypoxia/ischemia. Our past and current projects, supported by the Department of Defense (DoD) and Office of Naval Research (ONR), have identified cellular and molecular correlates of CNS oxygen toxicity (CNS-OT) seizures, a phenomenon which limits the capability of Special Operations (SpecOps) diving. Our efforts have focused specifically on measuring neuronal excitability, reactive oxygen species (ROS) production, biomarkers of oxidative stress and global blood and tissue metabolomics.

In 2009 we became interested in understanding the anticonvulsant and neuroprotective mechanism of nutritional ketosis and developed exogenous ketones that produce therapeutic levels. Therapies developed and tested include naturally-derived and synthetic agents that induce hyperketonemia independent of calorie restriction or carbohydrate restriction. Nutritional ketosis with the ketogenic diet is the standard of care for drug-resistant and refractory seizures resulting from a variety of etiologies. The brain's ability to use exogenous ketone bodies for fuel has not been exploited therapeutically, and evidence suggests that therapeutic ketosis confers protection against seizures, hypoglycemia and neurodegenerative disorders by several mechanisms, including enhancing brain energy

metabolism. The shift in brain metabolic environment during therapeutic ketosis can restore normal brain metabolism, EEG activity and potentially manage a persistent molecular neuropathology (*e.g.* defect in SLC2A1) or environmental stress (*e.g.* CNS-OT). In addition to neurological disorders, metabolic-based therapies can target cancer metabolism, which derives energy primarily from glycolysis and substrate level phosphorylation. Due to mitochondrial defects, cancer cells lack the metabolic flexibility to generate ATP from ketones. Our goal is to develop and test therapies that exploit the metabolic defects of cancer by targeting cancer-specific glycolytic metabolism (*e.g.* Warburg effect) and develop protocols to hyperoxygenate tumors (*i.e.* reverse tumor hypoxia) to further enhance the efficacy of metabolic-based therapies and standard care therapies (*e.g.* chemo, immune therapy, radiation, etc.).

Independent from ketones functioning as an energy substrate, the ketone beta-hydroxy butyrate (β HB) functions as a histone deacetylase inhibitor (HDACi, class 1 and 2) and inhibitor of NOD-like receptor family pyrin domain-containing protein (NLRP3) inflammasome, which suppress oxidative stress and inflammation, respectively. An emerging area of interest for me is developing metabolic-based therapies that improve health biomarkers linked to obesity, insulin resistance, type-2 diabetes, wound healing and exercise performance and resilience. Our *in vitro* and *in vivo* studies continue to validate the efficacy, mechanism of action and safety of metabolic therapies (diet supplements, drugs), including exogenous ketones, with pharmacokinetic and toxicology studies. Our data has produced remarkable results in animal models of seizures and cancer, and current efforts have focused on moving these metabolic-based therapies into human clinical trials.

1. RESEARCH SUPPORT:

Current Grants and Contracts

Title: Migration Studies of Primary Human Dermal Fibroblasts

Purpose: This project is designed to test the efficacy and mechanisms of a potential wound healing therapy. We will investigate the effects of topical ketones and amnion, chorion patch in the migration of human dermal fibroblasts.

Funding Agency: Tides Medical

Dates: 11/1/2015 to 12/31/2016

Role: **D'Agostino DP (PI)**

Title: Therapeutic efficacy of the co-administration of Glutamate Oxaloacetate Transaminase and Oxaloacetate (GOT/OX) for Amyotrophic Lateral Sclerosis (ALS)

Purpose: The objectives of this study are to 1) determine the pharmacokinetic and pharmacodynamic parameters of GOT/OX in wild-type mice and to determine the effects of GOT/OX on the health and survival of SOD1-G93A mice, a well-known mouse model of ALS.

Funding Agency: Winning the Fight Against Neurodegenerative Diseases Foundation (WFND:501c3)

USF Award Number: 6143-1119-00

Dates: 9/1/2015 to 8/31/2016

Role: **D'Agostino DP (PI)**

Title: Efficacy and Mechanism of Ketone Esters for Central Nervous System Oxygen Toxicity (CNS-OT) Seizures

Purpose: The goal of this project is to develop and test several exogenous ketone agents as a mitigation strategy for CNS-OT in a rat model. In addition, pharmacokinetic and toxicology studies have been completed for FDA requirements for Generally Recognized as Safe (GRAS) determination. Microscopy and global metabolomic studies are being done to elucidate the cellular and molecular mechanism of this metabolic-based therapy.

Funding Agency: Office of Naval Research (ONR)

ONR Award: N00014-13-1-0062

USF Account Number: 6143108600

Dates: 12/1/2012 to 12/31/2015

Role: **D'Agostino DP (PI)**

Title: Mechanism of CNS and Pulmonary Oxygen Toxicity: Predicting and delaying oxygen toxicity in rats

Purpose: The major goal of this project is to determine the effects of CO₂ retention on production of reactive species and neuronal activity in the solitary complex. In addition, we plan to determine the effects of hypercapnic hyperoxia on physiological indicators of an impending oxygen toxicity seizure (hyperoxic hyperpnea & hypothermia) and on mitigation strategies for delaying onset of CNS oxygen toxicity seizures (therapeutic ketosis & hypobaric preconditioning).

Funding Agency: Office of Naval Research (ONR)

ONR Award: N000141310405

Dates: 12/1/2012 to 12/31/2015

Role: Dean JB (PI); **D'Agostino DP (Co-I)**

Title: Pre-Clinical Study to Assess Efficacy of Metabolic Therapy with a Branched Chain Amino Acid (BCAA) Formula in Mouse Model of Metastatic Cancer

Purpose: The purpose of this project is to complete a pre-clinical mouse study to assess the efficacy, tolerability and safety of a metabolic therapy (nutritional ketosis) combined with a branched chain amino acid formula. The outcome measures of this study are survival time from aggressive metastatic cancer, tumor bioluminescence, metabolomics, insulin signaling (IGF-1, AMPK, AKT, etc.), inflammatory cytokines and assessment for mitigating cancer cachexia,

Funding Agency: Scivation Inc.

USF Award #6143109200

Dates: 1/1/2013 to 12/31/2017

Role: **D'Agostino DP (PI)**

Title: Testing the Efficacy of Ketone Supplementation in a Mouse Model of Glucose Transporter Type-1 Deficiency Syndrome (GLUT1D) mice

Purpose: The ketogenic diet is the standard care for GLUT1D, but the restrictive nature of the diet prevents compliance in many cases. Nutritional ketosis is therapeutic for GLUT1D because it elevates ketones in the blood, beta-hydroxybutyrate and acetoacetate, which function as alternative energy substrates to offset hypoglycorrhachia. The project

investigates several novel ketogenic agents that induce “artificial ketosis”, and this circumvents the dietary restriction associated with induction via the clinically used restrictive ketogenic diet.

Funding Agency: Glucose Transporter Type 1 Deficiency Syndrome Foundation (GLUT1D:501c3)

USF Award: 6143109500

Dates: 1/1/2014 to 12/31/2015

Role: **D’Agostino DP (PI)**

Title: Development and Testing of Ketogenic Diet, Ketone Supplementation, and Hyperbaric Oxygen Therapy Protocols for Cancer

Purpose: This project provides salary funding for conducting pre-clinical mouse studies to assess the efficacy, tolerability and safety of exogenous ketone supplements combined with the ketogenic diet and hyperbaric oxygen therapy. Tumor bioluminescence, metabolomics, insulin signaling (IGF-1, AMPK, AKT, etc.), inflammatory cytokines and markers of cancer cachexia will be assessed using several models, including advanced metastatic cancer and a mouse model of glioblastoma (GL216).

Funding Agency: Ketone Research and Development (KRD) Holdings

USF Award: 6143110600

Dates: 4/1/2015 to 3/31/2018

Role: **D’Agostino DP (PI)**

Title: Assessment of Ketone Ester Glycerol Tris *D,L*-3-Hydroxybutyrate in GLUT1 Deficiency Syndrome

Purpose: The ketogenic diet is used for the metabolic management of GLUT1D, and manages the disease symptoms even in the presence of a persistent molecular pathology (e.g. SLC2A1 defect). This study seeks to use a novel tri-ester of the ketone beta-hydroxybutyrate (BHB) in a GLUT1D mouse model to induce therapeutic ketosis. And preserve brain energy metabolism during hypoglycorrhachia. In addition to behavioral studies, blood and tissue is collected to assess the metabolic impact (global metabolic profile) that therapeutic ketosis has in the mouse model of GLUT1D.

Funding Agency: KetoProducts LLC

USF Award: 6143111000

Dates: 4/1/2015 to 3/31/2016

Role: Poff AP (PI); **D’Agostino DP (Co-I)**;

Title: Pharmacokinetic Studies of Ketone Ester Glycerol Tris *D,L*-3 Hydroxybutyrate

Purpose: The goal of this study is to conduct a dose-response pharmacokinetic study in rats using a novel ester of the ketone beta-hydroxybutyrate (BHB). This particular compound is under consideration for FDA Generally Recognized as Safe (GRAS) determination as a prescription medical food for the metabolic management of metabolic disorders and age-related neurodegenerative disorders and epilepsy. The advantage of using ketone supplementation in this form is that it circumvents the need for dietary restriction typically required for achieving therapeutic levels of ketones in the blood.

Funding Agency: KetoProducts LLC

USF Award: 6143111000

Dates: 4/1/2015 to 3/31/2016

Role: Poff AP (PI); **D'Agostino DP (Co-I)**;

Foundation Accounts and Research Accounts

Account Title: Metabolic Therapy and Cancer Research

Purpose: Account for advancing studies on metabolic therapies for cancer and for supporting existing sponsored research through private and corporate donations.

Funding Agency: Donations to USF Foundation (501c3)

USF Account No: 250244

Dates: 4/1/2014 to Present

Role: **D'Agostino DP (PI)**

Account Title: Patents and Licensing Research Foundation Account

Purpose: Funds to support existing sponsored research projects from royalties associated with USF patents on metabolic-based therapies.

Funding Agency: Division of Patents and Licensing. Patent Royalties

USF Account No: R64303

Dates: 1/1/2013 to 3/31/2018

Role: **D'Agostino DP (PI)**

Completed Research Projects:

Title: Effect of the Ketogenic Diet vs Western Diet on Strength, Body Composition and Metabolic Biomarkers

Purpose: This project was designed to assess the effects of nutritional ketosis on the performance, body composition, strength and blood safety biomarkers of advance athletes. The results from this experiment confirmed that nutritional ketosis results in favorable body composition alterations and shifts in blood biomarkers of metabolic health.

Funding Agency: Quest Nutrition

USF Award: 6143109300 and 6143109301

Dates: 1/1/2014 to 06/30/2015

Role: **D'Agostino DP (PI)**

Amount: \$120,000

Title: Cellular Mechanisms of CNS Oxygen Toxicity

Purpose: The primary objective of this project is to determine if a predictable pattern of cardiopulmonary changes precede onset of CNS oxygen toxicity, which could potentially be used as a biomarker of an impending O₂-induced seizure. The second major goal is to determine the neuroprotective effects of hyperoxic preconditioning against CNS oxygen toxicity and its effects on real time production of ROS and RNS in neurons in the solitary complex produced during exposure to normobaric and hyperbaric hyperoxia.

Funding Agency: Office of Naval Research (ONR)

ONR Award: N000140710890

Dates: 12/1/2009 to 8/31/2013
 Role: Dean JB (PI); **D'Agostino DP (Co-I)**
 Amount: \$727,000

Title: Efficacy and Mechanism of Metabolic Therapy for Amyotrophic Lateral Sclerosis (ALS)

Purpose: There is currently no cure or effective treatment for ALS. Besides motor neuron degeneration, ALS is associated with impaired energy metabolism, which is pathophysiologically linked to mitochondrial dysfunction and glutamate excitotoxicity. The Deanna Protocol (DP) was tested as a metabolic therapy that has been reported to alleviate symptoms in patients with ALS. We tested this supplement protocol on motor function and survival in a mouse model of ALS (SOD1-G93A).

Funding Agency: Winning the Fight Against Neurodegenerative Diseases Foundation (WFND:501c3)

USF Account Number: 6143107700

Dates: 9/1/2012 to 8/31/2014

Role: **D'Agostino DP (PI)**

Amount: \$154,000

Title: Hyperoxia-Induced Oxidative Stress and its Ultrastructural Correlates in CNS Cells

Purpose: The objective of this project was to determine the effects of normobaric and hyperbaric hyperoxia on the biophysical properties of the plasma membrane and real time production of ROS and RNS using an integrated atomic force-fluorescence microscopy system that was developed and tested at USF. This DoD/DURIP equipment grant to develop hyperbaric technologies.

Funding Agency: Office of Naval Research (ONR)

ONR Award: N000140910244

Dates: 12/01/2008 to 7/1/2012

Role: **D'Agostino DP (PI)**; Dean JB (Co-I)

Amount: \$677,420

Title: Laser Confocal Microscopy Studies of Oxygen Toxicity

Purpose: The purpose of this grant was to enable the purchase of a cutting-edge confocal microscopy system that we adapted for use inside an environmental/hyperbaric chamber. This technology allows us to visualize the effects of graded levels of hyperbaric gases on cellular processes, including reactive oxygen species (ROS) production, intracellular calcium and mitochondrial function in neurons. We have extended the use of this technology to many projects, including our wound healing and cancer studies

Funding Agency: Department of Defense (DoD) Defense University Research Instrumentation Program (DURIP) Equipment Grant

ONR Award No.: N000141110890

PR No., Mod No.: 11PR09362-00

Dates: 12/01/2008 to 7/1/2012

Role: **D'Agostino DP (PI)**

Amount: \$201,945

Title: Effect of Aging on O₂-Dependent Redox Regulation of Survival and Growth of Human Fibroblasts and Rat Hippocampal Neurons: Implications for Wound Healing and Neuroprotection

Purpose: This pilot study allowed us to determine the effect of hyperoxia on cell death and ROS production in human fibroblasts and rat hippocampal neurons. The completion of these studies allowed us to further understand the role of O₂-induced oxidative stress and the differential effects between cells types.

Funding Agency: Signature Interdisciplinary Program in Neuroscience (SIPIN) pilot grant

Dates: 4/1/2011 to 3/31/2012

Role: **D'Agostino DP (PI)**; Gould LJ; Ari C, Kesl S

Amount: \$4,000

Title: Molecular and Cellular Studies of CNS O₂ Toxicity using Hyperbaric Atomic Force Microscopy (HAFM)

Purpose: The objective of this project was to conduct hyperbaric AFM studies on brain cells to understand the effects of hyperoxia and other normobaric and hyperbaric gases on the cell membrane morphology. These studies allowed us to elucidate and the physical correlates of membrane lipid peroxidation, and to link this pathophysiologically to changes associated with hyperoxia-induced neuronal excitability and metabolic dysfunction.

Funding Agency: Office of Naval Research (ONR) Postdoctoral Fellow Award

Grant Award: ONR No. N000140610105

Dates: 12/01/05-11/30/08

Role: **D'Agostino DP (PI)**; Dean JB (Sponsor)

Amount: \$302,564

PEER REVIEW PUBLICATIONS (REVERSE CHRONOLOGICAL ORDER) (Senior Authorship Underlined)

1. Viggiano A, Pilla R, Arnold P, Marcellino M, **D'Agostino DP**, Zeppa P, Coppola G. Different calorie restriction treatments have similar anti-seizure efficacy. *Seizure-European Journal of Epilepsy*; (2016), <http://dx.doi.org/10.1016/j.seizure.2016.01.003>
2. Boros L, **D'Agostino DP**, Katz HE, Roth JP, Meuillet EJ, Somlyati G. Submolecular regulation of cell transformation by deuterium depleting water exchange reactions in the tricarboxylic acid substrate cycle. *Medical Hypotheses* 87 (2016) 69–74; DOI: <http://dx.doi.org/10.1016/j.mehy.2015.11.016>
3. Poff A, Ward N, Seyfried T, Arnold P, **D'Agostino DP**. A novel non-toxic metabolic therapy – ketogenic diet, ketone supplementation, and hyperbaric oxygen – elicit potent anti-cancer effects in vitro and in vivo. *PLoS One*. 2015 Jun 10;10(6):e0127407. DOI: 10.1371/journal.pone.0127407
4. Viggiano A, Pilla R, Arnold P, Marcellino M, **D'Agostino DP**, Coppola G. (2015) Anticonvulsant properties of an oral ketone ester in a pentylentetrazole-model of seizure. *Brain Res.* 2015 May 27. pii: S0006-8993(15)00425-4. DOI: 10.1016/j.brainres.2015.05.023.

5. Youm Y, Nguyen K, Grant RW, Golgberg EL, Bodogai M, Kim D, **D'Agostino DP**, Planavsky N, Lupfer C, Kanneganti TD, Kang S, Horvath TL, Fahmy TM, Crawford PA, Biragyn A, Alnemri E, Dixit VD. "Ketone body β -hydroxybutyrate blocks NLRP3 inflammasome-mediated inflammatory disease. *Nature Medicine*, 2015 Mar;21(3):263-9 DOI: 10.1038/nm.3804.
6. Ari, C., Poff, A.M., Held, H.E., Landon, C.S., Goldhagen, C.R., Mavromates, N., **D'Agostino, DP**. Metabolic therapy with Deanna Protocol Supplementation Delays Disease Progression and Extends Survival in Amyotrophic Lateral Sclerosis (ALS) Mouse Model. *PLoS One*. 2014 Jul 25;9(7):e103526. DOI: 10.1371/journal.pone.0103526
7. Seyfried T, Flores R, Poff AM, **D'Agostino DP**, Mukherjee P. Metabolic therapy: A new paradigm for managing malignant brain cancer. *Cancer Letters*. 2014;356(2): 289-300. DOI: 10.1016/j.canlet.2014.07.015.
8. Seyfried TN, Marsh J, Mukherjee P, Zuccoli G, **D'Agostino DP**. Could Metabolic Therapy Become a Viable Alternative to the Standard of Care for Managing Glioblastoma? *Oncology & Hematology Review*, 2014;10(1):13–20. DOI: 10.17925/USN.2014.10.01.48
9. Seyfried TN, Poff A, **D'Agostino DP**. Cancer as a Metabolic Disease: Implications for Novel Therapeutics. *Carcinogenesis*. 2014, Mar;35(3):515-27. DOI: a10.1093/carcin/bgt480.
10. Poff A, Ari C, Seyfried TN, **D'Agostino DP**. Ketone Supplementation Decreases Tumor Cell Viability and Prolongs Survival of Mice with Metastatic Cancer. *International Journal of Cancer*: 2014 Oct. 1;135(7):1711-20. DOI: 10.1002/ijc.28809
11. Brownlow ML, Benner L, Benner L, Joly-Amando A, Azam S, **D'Agostino DP**, Gordon MN, Morgan D. Calorie restriction, but not ketogenic diet, improves cognition in models of Alzheimer's pathology. *Alzheimers's and Dementia*. 2013 9(4): P160. DOI: [10.1016/j.jalz.2013.05.240](https://doi.org/10.1016/j.jalz.2013.05.240)
12. Brownlow ML, Benner L, **D'Agostino DP**, Gordon MN, Morgan D. Ketogenic diet improves motor performance but not cognition in two mouse models of Alzheimer's pathology. *PLoS One*. 2013 Sep 12;8(9):e75713. DOI: 10.1371/journal.pone.0075713.
13. Poff A, Ari C, Seyfried TN, **D'Agostino, DP**. The Ketogenic Diet and Hyperbaric Oxygen Therapy Prolong Survival in Mice with Systemic Metastatic Cancer. *PLoS One.*, 2013; 8 (6): e65522 DOI: [10.1371/journal.pone.0065522](https://doi.org/10.1371/journal.pone.0065522)
14. **D'Agostino, D.P.**, Pilla, R., Held, H.E., Landon, C.S., Puchowicz, M., Brunengraber, H., Ari, C., Arnold, P. and Dean, J.B. Therapeutic ketosis with ketone ester delays central nervous system oxygen toxicity seizures in rats. *AJP Regulatory, Integrative and Comparative Physiology*, 2013 May 15;304(10):R829-36. DOI: 10.1152/ajpregu.00506.2012.
15. Paoli A, Grimaldi K, **D'Agostino D**, Cenci L, Moro T, Bianco A, Palma A. Ketogenic diet does not affect strength performance in elite artistic gymnasts. *Journal of International Society Sports Nutrition*. 2012 July 26;9(1):34, DOI: 10.1186/1550-2783-9-34

16. **D'Agostino DP**, McNally H, Dean JB. Hyperbaric atomic force microscopy (AFM) and fluorescence microscopy for biological applications. *Journal of Microscopy*; Jan 12; 245 (3), 2012. DOI: 10.1111/j.1365-2818.2011.03599.x. PMID: 22455392
17. **D'Agostino DP**, McNally H, Dean JB. Development and testing of hyperbaric atomic force microscopy (AFM) for biological applications. *Microscopy and Microanalysis*, 2011. vol. 16, issue S2, pp. 1042-1043. DOI: 10.1017/S1431927610057739.
18. **D'Agostino DP**, Olson JE, Dean JB. Acute hyperoxia increases lipid peroxidation and induces plasma membrane blebbing in human U87 glioblastoma cells. *Neuroscience*; 2009; Mar 31;159(3):1011-22. DOI: 10.1016/j.neuroscience.2009.01.062. PMID: 19356685
19. **D'Agostino DP**, Mazza EM, Neubauer JA. Heme oxygenase is necessary for the excitatory response of cultured neonatal rat rostral ventrolateral medulla neurons. *AJP Regulatory, Integrative and Comparative Physiology*. 2009. Jan;296(1):R102-18. 10.1152/ajpregu.90325.2008 PMID: 18971354
20. **D'Agostino DP**, Colomb DG Jr, Dean JB. Effects of hyperbaric gases on membrane nanostructure and function in neurons. *J Appl Physiol*. 2009 Mar;106(3):996-1003 Review. PMID: 18818382. DOI: 10.1152/jappphysiol.91070.2008.
21. **D'Agostino DP**, Putnam RW, and Dean JB. Superoxide ($\cdot\text{O}_2^-$) production in CA1 neurons of rat hippocampal slices exposed to graded levels of oxygen. *Journal of Neurophysiology*. 2007. Aug;98(2):1030-41. PMID: 17553943

MANUSCRIPTS SUBMITTED:

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93. **D'Agostino DP**, J. Fechisin, I. Mkandawire, J. Sunderram, T. Hoang-Le and J.A. Neubauer. Co-Localization of heme oxygenase-2 (HO-2) and serotonin (5HT) in the rostral ventrolateral medulla (RVLM) cardio-respiratory neurons without spinal projections. *FASEB J.* 14(4): A395, 2000.
94. **D'Agostino DP**, C. Chalfoun, O. Le-Hoang and J.A. Neubauer. Co-localization of heme oxygenase with serotonin and substance P in neurons cultured from the rostral ventrolateral medulla. *FASEB J.* 13(4): A491, 1999.
95. Sunderram J, **D. D'Agostino**, C. Chalfoun, J. Fechisin, O. Le-Hoang and J.A. Neubauer. Heme oxygenase-2 is intrinsic to the cardio-respiratory regions of the rostral ventrolateral medulla (RVLM). Presented at "Oxygen Sensing: Molecule to Man";

International Society of Arterial Chemoreception, 1999.

96. Neubauer J.A., E. Mazza, J. Sunderram, and **D. D'Agostino**. Oxygen sensitivity in cardio-respiratory regions of the rostral ventrolateral medulla (RVLM). Presented at "Oxygen Sensing: Molecule to Man"; *International Society of Arterial Chemoreception*, University of Pennsylvania, Philadelphia, PA 1999.
97. Sunderram J., J. Fechisin, **D.D'Agostino** and J.A. Neubauer. Expression of heme oxygenase-2 in the rostral ventrolateral medulla in close proximity to bulbospinal cardio-respiratory neurons. *FASEB J.* 13(4): A492, 1999.
98. Gershenbaum E., M.Zingariello, E.Mazza, O.Le-Hoang, **D.D'Agostino** and J.A. Neubauer. Localization of heme oxygenase in the catecholaminergic and serotonergic neurons cultured from the rostral ventrolateral medulla. *FASEB J.* 12. A495, 1998.

TECHNICAL REPORTS

1. Raj A, **D'Agostino DP** (2014) Ketones for Astronaut Safety, Performance and Resilience. Tech Report: National Aeronautics and Space Administration (NASA).
2. **D'Agostino DP.** (2014) Efficacy and Mechanism of Ketone Esters for Central Nervous System Oxygen Toxicity (CNS-OT) Seizures. Tech Report for ONR Award: N00014-13-1-0062
3. **D'Agostino DP.** (2014) Hyperoxia-Induced Oxidative Stress and its Ultrastructural Correlates in CNS Cells. Tech Report for ONR Award: N000140910244
4. **D'Agostino DP (PI).** (2013) Laser Confocal Microscopy Studies of Oxygen Toxicity. Tech Report for ONR Award No.: N000141110890
5. **D'Agostino DP (PI).** (2012) Dean JB. Molecular and Cellular Studies of CNS O₂ Toxicity using Hyperbaric Atomic Force Microscopy (HAFM): Tech Report: ONR Award: N000140910244

PATENTS/INVENTIONS/DISCLOSURES FILED:

1. Jay B. Dean; **Dominic P. D'Agostino**; "Development and Use of Hyperbaric Atomic Force Microscopy" (Patent: 09A008PR2, University of South Florida): <http://www.google.com/patents/US20130145506>
2. **Dominic P. D'Agostino**; Jay B. Dean. "Systems And Methods For Performing Microscopy At Hyperbaric Pressures " (Patent: US 20130145506 A1, University of South Florida): <http://www.google.com/patents/US20130145506>

3. **Dominic P. D'Agostino**; Jay B. Dean: "Integrated System for Hyperbaric Atomic Force Microscopy and Fluorescence Microscopy in Live Cells (Patent: 09A008, University of South Florida)
4. **Dominic P. D'Agostino**; Angela Poff; "*Targeting Cancer with Metabolic Therapy and Hyperbaric Oxygen*" (Patent: WO2014085652 A1, University of South Florida): <http://www.google.com/patents/WO2014085652A1?cl=en>
5. **Dominic P. D'Agostino**; Patrick Arnold; Jay B. Dean; Raffaele Pilla; "*Ketone esters for prevention of CNS oxygen toxicity*" (Patent: US20140073693 A1); University of South Florida): <http://www.google.com/patents/US20140073693>
6. **Dominic P. D'Agostino**; Patrick Arnold; "*Composition and Methods for Producing Elevated and Sustained Ketosis*" (Patent: WO2014153416 A1; University of South Florida): <http://www.google.com/patents/WO2014153416A1?cl=en>
7. **Dominic P. D'Agostino**; Shannon Kesl; "*Metabolic Therapy for Treatment of Ischemic Wounds*" (Patent: 13A053PRC, University of South Florida)
8. **Dominic D'Agostino**; Shannon Kesl: *Methods of Sustaining Dietary Ketosis and its Effects on Lipid Profile*; (14A004PRWO; PCT/US15/011165, University of South Florida) <https://www.google.com/patents/WO2014153416A1>
9. Edwin Weeber; **Dominic D'Agostino**; Stephanie Blankenship: "The Novel Use of a Ketone Ester Supplement for Seizures, Cognitive Disruption, Motor Coordination, and other Symptomology in Angelman Syndrome" (Provisional Patent: USF.367; 15A038UTL, University of South Florida)
10. **Dominic P. D'Agostino**; Shannon Kesl; Patrick Arnold: Composition for suppressing appetite and/or promoting ketosis and weight loss in a mammal. Comprises medium chain fatty acids or its esters, and beta-hydroxybutyrate compounding. (Patent: US2014350105-A1)
11. **Dominic P. D'Agostino**; Patrick Arnold; Poff AM: Treating metabolic dysregulation such as Alzheimer's disease and cancer, comprises administering a ketogenic diet to an animal, and subjecting the animal to a hyperbaric oxygen-enriched environment. (Patent: US2014072654-A1)
12. **Dominic P. D'Agostino**; Patrick Arnold; Dean J.B: Treating neurological disorders e.g. Alzheimer's disease arising from impaired brain metabolism involves inducing mild ketosis in a subject by administering a dose of ketone ester. (Patent: CA2873057-A1)
13. **Dominic P. D'Agostino**; Angela Poff; "The Ketone Metabolite β -hydroxybutyrate Blocks NLRP3 Inflammasome-Mediated Inflammatory Disease" (Disclosure:#13A053, University of South Florida)
14. **Dominic P. D'Agostino**; Csilla Ari; "Chronic Administration of Exogenous Ketone Supplements Reduces Anxiety in Sprague-Dawley Rats" (IDF Requested.; University of South Florida)
15. **Dominic P. D'Agostino**; Csilla Ari; "Exogenous Ketones and Resistance to Anesthesia" (IDF Requested, University of South Florida)

- 16. Dominic P. D’Agostino;** Csilla Ari; “Exogenous Ketones for Treatment of Glucose Transporter Type 1 Deficiently Syndrome” (IDF Requested:, University of South Florida)

ORAL PRESENTATIONS/INVITED TALK AND KEYNOTE LECTURES

1. US Army Research, Development and Engineering Command; Natick Soldier Research Center (Natick, MA; January 21-23): *Nutritional Ketosis: Implications for Warfighter Health, Performance and Resilience*
2. Office of Naval Research (ONR) Undersea Human Performance Workshop; Naval Research Laboratory (San Diego, CA; January 20, 2016); *Metabolic Countermeasures for Performance and Resilience in the Undersea Environment*
3. US Special Operations Command (SOCOM): (Fort Bragg; NC; January 5-6); *Nutritional Ketosis: Implications for Warfighter Health, Performance and Resilience*
4. US Navy SEALs Endurance Training Facility (SEAL FIT) Workshop: (San Diego, CA: Dec 4-5, 2015): *Exogenous Ketones for Warfighter Safety Performance and Resilience*
5. Regenerative Cellular Therapy (RCT) Workshop: Costa Diamante Bella Sirena Treatment Center (Puerto Peñasco Sonora, Mexico; Oct. 26-27, 2015): *Nontoxic Metabolic Management of Metastatic Cancer*
6. University of Alabama at Birmingham (UAB); Nutrition Obesity Research Center and Department of Nutrition Sciences. (Birmingham, Alabama; Oct. 6 -7, 2015): *Nutritional Ketosis: Implications for Obesity and Associated Disease States*
7. UCB Epilepsy Summit I: Advancing Innovative Science into Patient Solutions (Braine-l’Alleud, Belgium; Sept. 30 – Oct.1, 2015); *Metabolism of glioma cells and tumors associated with epilepsy – role of ketogenic diet*
8. NASA Johnson Space Center: Department of Biomedical Research & Environmental Sciences; (Houston, TX; August 27, 2015); *Metabolic Countermeasures Nutritional Strategies for Long Duration Space Flight*
9. NASA Johnson Space Center: Department of Exercise Physiology; Human Research Program (HRP): (Houston, TX; August 26, 2015); *Superfuel: Synthetic Ketones as a Strategy for Long Duration Space Flight: Mitigating Physiological Risks*
10. NASA-sponsored meeting on Biological Countermeasures (BCMs) against Space Radiation Risks (IHMC Pensacola; Aug 18-19, 2015); *Metabolic Approaches to Reducing Radiation-Induced Carcinogenesis, Oxidative Stress and Inflammation*
11. NASA-sponsored meeting on Human Performance and Resilience in Space and Undersea Environments (IHMC Pensacola; August 11-12, 2015); *Metabolic Countermeasures Against Physiological Effect of Space and Undersea Environments*
12. BioLayne Foundation Conference: University of South Florida, Morsani College of Medicine (July 31- Aug 1, 2015). *Metabolic Interventions for Neurological Resilience and Improved Body Composition*

13. Genentech, Department of Molecular Oncology (San Francisco, CA; June 19-20); *Understanding the Molecular Mechanism of the Ketogenic Diet; Druggable Targets*
14. Notable Labs (San Francisco, CA; June 17-18); *Development of a Nontoxic Metabolic Therapy for Cancer; Molecular Pathways*
15. Drexel University 4th Annual Sport Nutrition Conference (Philadelphia, PA; May 19, 2015); *Keynote: Metabolic Strategies for Enhanced Performance and Body Composition*
16. Third International Conference on Deuterium Depletion (Budapest Hungary; May 7-8, 2015); *Keynote Lecture: Non-toxic metabolic management of metastatic cancer: Novel combination of ketogenic diet, ketone supplementation, and hyperbaric oxygen therapy*
17. McKnight Brain Institute; University of Florida (UF; Gainesville, FL; April 27, 2015); *Neuroprotective Metabolic Strategies*
18. NASA BlueSky Workshop on Exercise Technologies and Methods for Space Exploration (IHMC Pensacola; Feb 11-12, 2015); *Metabolic Strategies to Preserve and Enhance Exercise Performance and Adaptation for Human Spaceflight*
19. University of Tampa Conference on Human Performance and Nutrition; Department of Exercise Physiology (Tampa, FL; Feb, 2015); *Keynote Lecture: Ketogenic Dieting: Emerging Evidence of Fat and Ketones as Fuel*
20. Eötvös Loránd University; Institute of Biology; (Budapest Hungary; Oct 15, 2014); *Ketogenesis as an antiseizure and anticancer strategy: Cellular and molecular mechanism.*
21. Matthew's Friends 4th Global Symposium for Dietary Therapies for Epilepsy and other Neurological Disorders for Health Care Professionals (Liverpool, UK, Oct 7-11, 2014); *Moving towards Neuroprotection?*
22. Institute for Human and Machine Cognition (IHMC, Ocala, FL; September 25, 2014); *Metabolic Therapies: Therapeutic Applications and Practical Implementation.*
23. International Hyperbaric Oxygen Therapy Conference (New Mexico; Aug 22-24); *Hyperbaric Oxygen and Ketogenic Diet as an Adjuvant for Cancer Therapy*
24. Ancestral Health Symposium (AHS; Berkeley, CA; Aug 6-9); Panel Speaker: *Ketogenic Diet for Cancer*
25. BioLayne Foundation Conference on Physical Performance: University of South Florida, Morsani College of Medicine (July 21- July 23, 2014). *Ketogenic Nutrition: Effect on body Composition and Metabolic Biomarkers*
26. International Society of Sports Nutrition (ISSN; Clearwater, FL; June 19-21, 2014); *Metabolic Strategies for Enhanced Physical and Cognitive Performance*
27. Epilepsy Pipeline Conference (San Francisco, CA; June 5-7, 2014); *Ketogenic Compounds for the Treatment of Epilepsy*
28. NASA Blue Sky Workshop at Cosmos Club (Washington D.C.; May 29-June 1, 2014); *Ketones for Astronaut Safety, Performance and Resilience*
29. Beckman Institute, University of Illinois (Champaign, IL; May 2014); *Metabolic Strategy for Enhancing Physiological and Cognitive Resilience*

30. Alzheimer's Disease International (ADI) Conference (Puerto Rico, May 2014); *Medium Chain Triglycerides and Ketone Supplementation for Alzheimer's Disease*
31. Institute for Human and Machine Cognition (IHMC, Pensacola, FL: April 2014): *Metabolic Therapies: Therapeutic Applications and Practical Implementation*
32. Alternative and Complementary Medicine Conference (Palm Beach, FL. March 2014): *Hyperbaric Oxygen and Ketogenic Diet as an Adjuvant for Cancer Therapy*
33. American Epilepsy Society (AES); (Washington D.C.; Dec 2013): *Ketone Esters for Seizures: A Ketogenic Diet in a Pill?*
34. TEDx Talk Tampa Bay (St. Pete, FL; Palladium Theater; Oct, 2013); *Cancer as a Metabolic Disease: Implications for Therapies*
35. National Cancer Institute (NCI) Workshop on Cancer Metabolism, Oxidative Stress and the Warburg Effect. Arizona State University. (Phoenix, Arizona; Nov. 6-8, 2013): *Hyperbaric Oxygen as an Adjuvant for Cancer Therapy*
36. Glucose Transporter 1 Deficiency Syndrome (GLUT1DS) Family Conference; (Houston, TX: July 2013); *Ketone Ester Research: Application for GLUT1DS.*
37. University of Tampa; Department of Exercise Physiology (Tampa, FL; June 7, 2013): *Ketogenic Strategies for Enhancement of Cognitive and Physical Performance*
38. Food and Drug Administration (FDA): Considerations Regarding Food and Drug Administration Review and Regulation of Drugs for the Treatment of Amyotrophic Lateral Sclerosis (ALS); (Silver Spring, Maryland, Feb 25, 2013); *Ketones and Alternative Fuels for ALS.* <http://www.fda.gov/Drugs/NewsEvents/ucm339833.htm>
39. Israel Society for Hyperbaric and Diving Medicine (ISHDM), XII biennial International High Pressure Biology Group (IHPBG). (Eilat, Israel; November 9, 2012); *Metabolic Mitigation Strategy for CNS Oxygen Toxicity Seizures*
40. Glucose Transporter Type 1 Deficiency Syndrome Conference; Remi Savioz Glut1 Foundation (RSG1); (Orlando, FL; July 2012); *Development and Testing of Metabolic Therapies for Seizure Disorders*
41. Eötvös Loránd University; Institute of Biology; (Budapest Hungary; July 2012); *Development and Testing of Metabolic Therapies for Neurological Disorders and Cancer*
42. Eötvös Loránd University; Szivarvany Institute; (Budapest Hungary; July 2012); *Nutritional Management of Neurological Disorders and Cancer: Epigenetics"*
43. University of Tampa; Department of Exercise Physiology (Tampa, FL; June 2012): *Overtraining Syndrome: Nutritional and Metabolic Strategies to Prevent Central Nervous System Fatigue*
44. Barrow Neurological Institute (Phoenix, AZ; February 2012); *Therapeutic Ketosis for Seizures and Cancer Treatment*
45. University of Oxford (Oxford, United Kingdom: September 2011). *Therapeutic Ketosis for Neurological Disorders*
46. University of Padua (Italy; September 2011). *Ketogenesis as a Therapeutic Strategy for CNS Oxygen Toxicity and Other Neurological Disorders*

47. ONR Undersea Medicine Program Review (Seattle, Washington, August 2010): Project Summary: *Cellular and Molecular Studies of CNS oxygen toxicity*
48. University of Florida (Gainesville, FL; April 2010). *Metabolic Therapy as a strategy to Target Malignant Brain Cancer*
49. Undersea and Hyperbaric Medicine Society (UHMS) Meeting/ONR Undersea Medicine Program Review (Salt Lake City, Utah, July 2008): Project Summary (Yr3): *Hyperbaric Atomic Force Microscopy Analysis Oxidative Stress and its Ultrastructural Correlates in CNS Cells*
50. USF College of Aging Studies, Tampa, FL (annual talk: 2009-2011). *Neuroprotection from Ketogenesis*
51. ONR Undersea Medicine Program Review (Groton, CT; July 2007): Project Summary (Yr2): *Hyperoxia-Induced Oxidative Stress and its Ultrastructural Correlates in CNS Cells*
52. Società Italiana di Medicina Subacquea ed Iperbarica (Fidenza, Italy, 2007). *Atomic Force Microscopy (AFM) Analysis of Hyperoxia-Induced Morphological Changes in Cellular Membranes*
53. ONR Undersea Medicine Program Review (Duke University; July 2006): Project Summary (Yr1): *Hyperoxia-Induced Oxidative Stress and its Ultrastructural Correlates in CNS Cells*
54. Experimental Biology: Pre-doctoral Award Presentation (FASEB; San Diego, CA; April 12, 2003); *Hypoxic Chemosensitivity of Neurons in the Pre-Botzinger Complex of the rostral Ventro-lateral Medulla*
55. Dartmouth College: Dartmouth Medical School (Hanover, NH; Dec. 12-13 2002). *Hypoxic Chemosensitivity and the Neural Control of Autonomic Regulation: Role of Heme Oxygenase-2 (HO-2)*.
56. International Congress of Physiological Sciences (IUPS): Workshop on neural control of breathing (Christchurch, New Zealand, Sep 6-7, 2001). *Hypoxic chemosensitivity of cardiorespiratory regions of the rostral ventrolateral medulla (RVLM)*

RECENT NEWS/MEDIA/ONLINE PRESENTATIONS/PODCASTS/ARTICLES

1. CHTV Episode 98 Dr. Daniel Pompa: “Ketones and Ketosis”
<https://www.youtube.com/watch?v=BIRfBUZrO94>
2. Ketovangelist Episode 39 Podcast: Science of Exogenous ketones:
<https://www.ketovangelist.com/episode-39-dr-dominic-dagostino-discusses-his-work-with-exogenous-ketones/>
3. Office of Naval Research: Deep dive: “ONR-supported research combats oxygen toxicity in navy divers” http://www.eurekalert.org/pub_releases/2015-12/oonr-ddo120815.php
4. Four Hour Work Week Podcast on Nutritional Ketosis and Cancer Research:
<http://fourhourworkweek.com/2015/11/03/dominic-dagostino/>
5. USF Press Release (2015): Ketone Supplementation:
<http://hscweb3.hsc.usf.edu/blog/2015/06/10/usf-researchers-develop-novel-ketone-supplements-to-enhance-non-toxic-cancer-therapy/>

6. Science Daily (2015): Ketones as anti-inflammatory mechanism of dieting and fasting <http://www.sciencedaily.com/releases/2015/02/150216131146.htm>
7. Science Newline Medicine (2015): <http://www.sciencenewline.com/articles/2015061020590053.html>
8. Research History Article (2015) The Paleo Solution: Christoffersen T; D'Agostino DP. "The Origin (and future) of the Ketogenic Diet – Part 1": <http://robbwolf.com/2015/09/24/the-origin-and-future-of-the-ketogenic-diet-part-1/>
9. Online Lecture: Institute for Human and Machine Cognition (2014: IHMC; Ocala): <https://www.youtube.com/watch?v=yWRnma8Tet0&feature=youtu.be>
10. Online Lecture: Institute for Human and Machine Cognition (2014: IHMC; Pensacola) <https://www.youtube.com/watch?v=gONeCxtyH18>
11. Public Presentation: TedX Tampa Bay Presentation (2014): <https://www.youtube.com/watch?v=3fM9o72ykw>
12. USF Press Release (2014): Nontoxic Cancer Therapies Research: <http://hscweb3.hsc.usf.edu/blog/2013/06/10/nontoxic-therapy-proves-effective-against-metastatic-cancer-in-preclinical-research/>
13. Research Interview (2014): Bulletproof Radio (Podcast#85) <https://www.youtube.com/watch?v=3vIOLw80VD0>
14. Research Interview (2014): Single Cause Single Cure: <http://www.singlecausesinglecure.org/an-interview-with-dominic-dagostino/>
15. Interview: Mastering Ketosis (2014): <https://www.bulletproofexec.com/85-in-a-state-of-ketosis-with-dominic-dagostino-podcast/>
16. News Report: Health Canal (2014): <http://www.healthcanal.com/cancers/64357-usf-researchers-develop-novel-ketone-supplements-to-enhance-non-toxic-cancer-therapy.html>
17. Interview: Joe Johnson: Live More (2014): <http://www.cancerdudes.com/dominic-dagostino-interview/>
18. Interview: Carl Lanore: Superhuman Radio: Ketone Supplements (2014) <http://superhumanradio.com/shr-1665-the-blueprint-power-hour-novel-ketone-supplements-may-promise-non-toxic-cancer-therapy.html>
19. Interview: Carl Lanore: Superhuman Radio: Ketogenic Diet for Dummies (2014): http://superhumanradio.com/components/com_podcast/shu/SHU10212013-Ketogenic-Diets-For-Dummie.mp3
20. Interview: Carl Lanore: Superhuman Radio (2014): [SHR # 1330: Best Practices For Using Ketone Salts For Dieting, Performance And Therapeutic Purposes:](http://superhumanradio.com/shr-1665-the-blueprint-power-hour-novel-ketone-supplements-may-promise-non-toxic-cancer-therapy.html)
21. Interview: Tristan Haggard: Primal Edge Health Podcast (2014) <https://www.youtube.com/watch?v=oKbaPQllKX8>
22. News Report: Ocala Star Banner (2014): <http://www.ocala.com/article/20140925/ARTICLES/140929780?tc=ar>

23. Interview: Smash the Fat: Nutritional Strategies to Target Cancer (2014):
<https://www.youtube.com/watch?v=oUP9fFu7IE>
24. News Interview: Celebrity Health and Fitness (2014):
<http://www.celebrityhealthfitness.com/28602/ketogenic-diet-ketone-supplements-and-hyperbaric-oxygen-therapy-doubles-cancer-survival-in-mice/>
25. News Report: Medical Online (2014): <http://www.news-medical.net/news/20150611/Novel-combination-of-non-toxic-dietary-and-hyperbaric-oxygen-therapies-doubles-survival-time-in-cancer-model.aspx>
26. Interview: Southeast Green Show: Cancer and Diet (2014):
<http://www.southeastgreen.com/index.php/seg-features/speaking-of-green/season-4/9686-is-your-diet-feeding-your-cancer>
27. Interview: Less Doing: More Living Podcast #44 (2013):
<http://lessdoing.com/2013/11/04/podcast-44-with-dr-dominic-dagastino-from-the-university-of-south-florida-college-of-medicine/>
28. Interview: Ben Greenfield Fitness: Diving Into Ketosis (2013):
<http://www.bengreenfieldfitness.com/2013/10/deep-dive-ketosis-navy-seals-extreme-athletes-busy-executives-can-enhance-physical-mental-performance-secret-weapon-ketone-fuel/>
29. Interview: CBN News: Deanna Protocol for ALS (2012).
<http://www.cbn.com/cbnnews/healthscience/2012/November/Deanna-Protocol-a-Breakthrough-for-Lou-Gehrigs/>
30. Interview: CBN News: Starving Cancer: Ketogenic Diet as the Key to Recovery (2012) <https://www.cbn.com/cbnnews/healthscience/2012/December/Starving-Cancer-Ketogenic-Diet-a-Key-to-Recovery/>
31. Interview: Dr. Joe Mercola: Discussion of Cancer Research (2012):
<http://articles.mercola.com/sites/articles/archive/2013/06/30/dagostino-cancer-research.aspx>
32. Interview: Ketogenic Diet May Be Key to Cancer Recovery (2012):
<http://articles.mercola.com/sites/articles/archive/2013/03/10/ketogenic-diet.aspx>
33. Interview: Nourish Balance Thrive: Ketogenic Diets (2012):
<http://www.nourishbalancethrive.com/podcasts/nourish-balance-thrive/ketogenic-diets-dominic-dagostino-phd/>
34. Interview: Jimmy Moore Podcast: Living Low Carb Show (2012).
<http://www.thelivinlowcarbshow.com/shownotes/10568/848-dr-dominic-dagostino-keto-clarity-expert-interview/>
35. Interview: Vinnie Tortorich Show (2012) :
<http://vinnietortorich.com/2015/02/angriest-trainer-354-one-one-dr-dominic-dagostino/>
36. News Report: Examiner: Cancer is a metabolic disease that can be managed with ketogenic diet (2012). <http://www.examiner.com/article/cancer-is-a-metabolic-disease-that-can-be-managed-with-low-carb-ketogenic-diet>

37. News Report: Examiner: Ketogenic diet fights cancer (2012).
<http://www.examiner.com/article/low-carb-ketogenic-diet-fights-cancer-without-chemo-says-dr-dominic-d-agostino>
38. Interview: Body IO Performance show (2012): <http://body.io/body-io-fm-13-dr-dominic-dagostino/>
39. Interview: Ameer Rosic Show: Ketogenic Diet for weight loss, brain health and longevity (2012) <http://www.ameerrosic.com/ketogenic-diet-for-weight-loss-brain-performance-and-enhanced-longevity/>
40. Interview: Discussion Panel: ISSN Diploma in Applied Sports & Exercise Nutrition: <http://guruperformance.com/institute/videos/>
41. Interview: Fitness Nerds (2012): <http://fitnessnerds.podbean.com/e/podcast-18-dr-dominic-dagostino-and-the-ketogenic-diet/>
42. USF News: Hyperbaric biomedical research probes new depths of understanding, USF-COM; <http://hscweb3.hsc.usf.edu/health/now/?p=96>
43. USF News: Hyperbaric chamber installation, USF-COM; http://hscvideo2.hsc.usf.edu/asxroot/HSC/Public_Affairs/Hyperbaric.asx
44. WEDU Public Television (PBS: Smart Health): http://www.wedu.org/Smart_Health/past.aspx.
45. ONR News: Protecting Navy Divers and Submariners: the Undersea Medicine Solution; Office of Naval Research (ONR) (duration = 00:09:38)
<https://www.youtube.com/watch?v=1TqYx5-HBEc>

PERSONAL ONLINE RESOURCES TO PUBLISHED RESEARCH

1. Academia: <https://usf.academia.edu/DominicDAgostino/Papers>
2. Research Gate: https://www.researchgate.net/profile/Dominic_DAgostino
3. Linked In: <https://www.linkedin.com/pub/dominic-d-agostino/b/14/156>
4. RESEARCHER ID: I-6196-2012: <http://www.researcherid.com/rid/I-6194-2012>

RESEARCH AREAS OF INTERESTS

- Epilepsy and other Seizure Disorders
- Oxygen Toxicity of the CNS (seizures)
- Brain and Metastatic Cancer
- Alzheimer's Disease
- Wound Healing
- Hyperbaric Oxygen Therapy
- Atomic Force Microscopy
- Confocal Microscopy
- Ketogenic Diet Therapies
- Medical Foods
- Development and Testing Exogenous Ketones
- Rare Genetic Disease Associated with Inborn Errors in Metabolism
- Glucose Transporter Type 1 Deficiency Syndrome Therapies

- Metabolic-based Drugs
- Repurposing Drugs

TECHNICAL EXPERTISE

Atomic Force Microscopy (AFM); laser scanning confocal microscopy, diet design and formulation, intragastric gavage, cardiac puncture, blood metabolite measurements, metabolomics studies, membrane lipid peroxidation assays, spectrophotometric assays, electrophysiological measurements using *in vitro* and *in vivo* animal preparations, whole-cell/perforated-patch recordings with patch-clamp micropipettes; intracellular recording with sharp microelectrodes; immunohistochemistry; fluorescence/light microscopy; ratiometric fluorescence imaging of reactive oxygen species (ROS), reactive nitrogen species (RNS), pH_i, intracellular Ca, Live/Dead cell analysis, polarographic measurements of tissue slice PO₂; and hyperbaric/hypobaric technology, behavioral testing, electron microscopy, western blot, ELISA assays

COMMUNITY OUTREACH AND VOLUNTEER SERVICE OFF CAMPUS

1. 2010-Present: Big Brothers Big Sisters (BBBS) of Tampa Bay Mentor (James Tyler: 2-9hrs/month service): <http://www.bbbstampabay.org/Default.aspx?navigationid=2>
2. 2009-Present: TIME 4:13 Mission; (nonprofit 501c3); (missions: Mexico, Honduras, Haiti, West Virginia, local): <http://www.gloryb2godmissions.com/>
3. 2010-Present: Humane Society of Tampa Bay (registered dog and cat foster parent) <http://humanesocietytampa.org/>
4. 2011-Present: Metropolitan Ministries (homeless count and relocation, fund raising): <http://www.metromin.org/>
5. 2010-Present: Lifelink Organization (awareness and fund raising events for organ donation) <http://www.lifelinkfound.org/>
6. 2010-Present: Florida Blood Services (fund raising events) <http://www.oneblood.org/>
7. 2012-Present: Winning the Fight Against Neurodegenerative Diseases; (nonprofit 501c3) (scientific board, fund raising) <http://www.winningthefight.net/>
8. 2013-Present: Manta Pacific Foundation (501c3): Conservation and behavioral studies of manta rays in the wild and in captivity. <http://www.mantapacific.org/#!volunteers/c231k>

COLLABORATORS

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PERSONAL INTERESTS

Scuba Diving (PADI; advanced, rescue), Marine Biology, Exercise Physiology, Resistance Training, Food Science, Travel, Hiking, Kayaking

REFERENCES

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