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Attorneys for the Plaintiffs

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF ALAMEDA

CINDY KIEL, J.D., an Executive Associate Vice Chancellor at UC Davis, MCKENNA HENDRICKS, a UC Santa Barbara student, EDGAR DE GRACIA, a UCLA student, and LELAND VANDERPOEL, an employee at the Fresno satellite extension of the UCSF Medical Education Program, and FRANCES OLSEN, Professor of Law at UCLA

Plaintiffs,

vs.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, a Corporation, and MICHAEL V. DRAKE, in his official capacity as President of the UNIVERSITY OF CALIFORNIA,

Defendants.

CASE NO. HG 20072843

PROFESSOR LASZLO G. BOROS, MD'S DECLARATION IN SUPPORT OF PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

By Fax

UNLIMITED CIVIL JURISDICTION

DEPARTMENT 511

Date: October 14, 2020
Time: 130: PM
Reservation ID-2206283
Action Filed: August 27, 2020
Trial Date: None Sent

I Laslo G. Boros, MD declare as follows:

1. I am a medical doctor involved in biomedical research, as well as teaching and currently a Professor of Pediatrics, step 3 in rank of the adjunct series at UCLA, an active investigator of the Institute for Women's and Children's Health at the Lundquist Institute for Biomedical Innovation and the Harbor-UCLA Medical Center's Department of Pediatrics and the former Co-Director of the Stable Isotope Research Laboratory. A copy of my full curriculum vitae is attached to this Declaration as Exhibit "A".
2. I am an academic editor of scientific journals including Scientific Reports - Nature® (ISSN: 2045-2322), published by Springer Nature (1), Molecules – MDPI (ISSN: 1420-3049) Publisher: Multidisciplinary Digital Publishing Institute (2) and Medicine Oncology - (ISSN: 0025-7974) Publisher: Wolters Kluwer (3).
3. My primary focus is studying cancer, inflammatory and immune cell metabolism with the use of specifically designed ^{13}C-glucose tracer molecules and mass spectroscopy with particular interest in the activation (4) of the immune system, which can adversely affect human health and lead not only to autoimmune conditions but to diseases like metaplasia and cancers of blood cell forming organs such as the bone marrow (5-7). Part of that interest is reflected in the fact that I have patented a test for immune activation and detection of lymphocytes by antigen challenges (8).
4. Because of my strong interest in inflammation, graft versus host immunology and autoimmunity as an investigator, reviewer and editor, I am very familiar with the published, peer reviewed and currently evaluated literature on what some researchers call virus, viral or vaccine interference, which terminology seems to be common in clinical studies.

5. The Wolff study cited in the Complaint is one such example of the study of this medical phenomenon, namely, whereby one vaccine (the flu shot) is associated with an increased risk of contracting another virus (the common coronavirus strains). While this is just one observational study in the peer reviewed medical literature (and I would also point out that this observational study also showed a positive or protective association between the seasonal flu vaccine and viruses closer to it molecularly*), it certainly raises a concern that providing the flu shot to large populations might actually increase the risk of contracting the pandemic coronavirus. Of course, since there are no controlled blinded studies (that I am aware of), we do not have an answer to this important question.*

6. University of California mandated influenza vaccinations as a requirement to avoid a surge of flu cases at health care facilities across the state during the unprecedented public health crisis caused by the coronavirus pandemic.

7. Yet, based on 170 million episodes of care and 7.6 million deaths in a population turning 65 and above, which was associated with a statistically and clinically significant increase in rate of seasonal influenza vaccination in this UK cohort showed no evidence that influenza vaccination reduced hospitalizations or mortality among elderly persons (9).

8. This analysis (9) used an innovative observational design that reduced the possibility of bias and confounding factors common in other observational studies with estimates precise enough to rule out confounding results from many previous studies (10).

9. It is therefore suggested that current influenza vaccination strategies prioritizing large cohorts of elderly persons may be less effective than believed at reducing hospitalizations, serious morbidity and mortality in this population, which suggests that

supplementary or alternative strategies may be necessary that are mandated by the UC system.

10. For younger populations of students, staff and faculty it is crucial to consider potential serious side effects of autoimmunity in response to influenza vaccinations as characterized in detail with identifying cross reacting proteins in the human body (11) at a hearing held by The House Science, Space and Technology Committee with public health officials on efforts to improve flu vaccines and develop a universal flu vaccine. The witnesses in the first panel were Dr. Anthony Fauci, National Institute of Allergy and Infectious Diseases director, and Dr. Daniel Jernigan, director of the Center for Disease Control and Prevention (CDC) Influenza Division.
11. A study conducted by the Centers for Disease Control had suggested the possibility that women who received A/H1N1pdm2009 (pH1N1) antigen-containing influenza vaccine two years in a row had an increased risk of miscarriage (12), whereby spontaneous abortion (SAB) was associated with influenza vaccination in the preceding 28 days. This information is provided herein as a precautionary measure for repeated H1N1 vaccinations because 1) the association did not establish causal relationship between repeated influenza vaccination and SAB and 2) additional research identified limitations regarding cohort, seasons and outcomes in the original study design (13).
12. The current domestic enterprise for manufacturing influenza vaccines has critical shortcomings (14) as most influenza vaccines are made in chicken eggs, using a 70-year-old process that requires months-long production timelines and use of vaccine viruses adapted for growth in eggs, besides human epithelial cells. This process introduces

mutations of the influenza vaccine virus that may render the final products less effective and unsuitable for efficient protection against the disease (14).

13. However, my research interests are on a molecular level, explaining why or how this observed phenomenon occurs in humans.

14. On this level, some researchers talk about pathogenic priming, which is a mechanism of action, suggesting how and why a flu vaccine could cause or contribute to increased COVID-19 infection with severity.

15. In that regard, certainly the flu shot with their excipients (and the COVID-19 vaccine if and when it is approved), are cumulative risks in sharply increasing, complicating and exhausting immune responses against single strand RNA viruses, primarily exhausting mitochondrial function and oxidative metabolism in vulnerable tissues (e.g., epithelial and mucosal cells of the respiratory tract and lung function).

16. An immune response, regardless of its method of initiation, such as the injection or inhalation of RNA, protein, peptide and/or fatty acid virus particles with chicken egg and adjuvant constituents, if preformed according to specifications, decreases systematic catabolic reaction architectures of the energy producing mitochondrial substrate cycling pathways. Virus hosting and immune cells exhibit new molecule synthesis via anabolic and anaplerotic cycles via reverse carboxylation in mitochondria that hamper the cells' ability to produce metabolic matrix water in order to maintain Krebs-Szent-Györgyi cycle reactions with resulting branching. All the above metabolic adaptive processes result in heavy hydrogen isotope, i.e. deuterium accumulation in all affected host cells, which is a growth requirement of all rapidly proliferating pro- and eukaryote cells that copy either

their own nuclear components, such as in cancer (15), or foreign nucleic acid (RNA and DNA), such as in virus hosting cells.

17. When mitochondrial complete substrate oxidation is limited during immune activating influenza vaccinations and immune globulin producing cell expansion there are concomitant decreases in mitochondrial citrate, isocitrate and malate recycling processes in target cells that set the stage for deuterium accumulation. This may present increased vulnerability to another virus infection with similar genotypic and morphological characteristics that hide from specific binding and neutralizing properties of antibodies being intensely produced against influenza virus particles, as well as that of the egg and adjuvant constituents of the vaccine.
18. These processes all contribute to low energy phosphate ATP synthesis with decreasing energy homeostasis in infected individuals with RNA, protein and fat derived virus particles of a vaccine or infection, whichever comes first. Potential interference between similar RNA viruses has recently been described as “a perfect storm” in a prominent scientific journal (16).
19. This is because “There are important differences in the epidemiology of COVID-19 and seasonal influenza, but symptoms overlap …”, and,
20. The optimal timing of influenza vaccination in healthy individual and patients with confirmed COVID-19 is uncertain …, and,
21. There are no controlled clinical or even experimental studies on the effects of influenza vaccination in either healthy or COVID-19 infected patients, but it may be prudent to delay vaccine administration until after the acute illness has resolved (16).

22. Nucleic acid building pathways are critical during virus interference, such as the pentose cycle's oxidative and non-oxidative branches as well as sluggish energy-producing reactions in glycolysis that use naturally deuterated glucose and metabolic water of cytoplasmic origin. These pathways support nucleic acid synthesis during antigen presenting (dendritic) cell expansion, immune cell attraction, activation and proliferation, as well as virus hosting (17, 18). The well-described cytokine storm as a result of severe Covid-19 infection may closely be related to deuterium accumulation in long chain saturated fatty acids and phospholipids that make up the envelope and rafts of influenza and corona viruses, which serve as prostaglandin precursors of leukotriene synthesis by acutely infected or healthy cells (19). Although viruses shut down production of prostaglandins to recruit envelope and raft fatty acids and to prevent immune cell attraction by their hosts, once viruses infect new cells, they lose their envelope during disassembly by breaking down long chain (C:22 and above) fatty acids via the prostaglandin, eicosanoid, leukotriene pathways in oxygen deprived cells of a Covid-19 infected subject with desaturated hemoglobin, as observed clinically.

23. It seems inevitable that influenza, COVID-19, and perhaps viruses in general, all thrive when mitochondria reverse to carboxylation that readily limits deuterium depletion via natural fatty acid oxidation in clonally expanding immune or host cells during inflammation and/or a vaccine induced immune response, whereby the eicosanoid precursor arachidonic acid accumulate via chain shortening and desaturation of nuclear membrane-bound long chain fatty acids.

24. In the meantime, lipoxygenase, having an incredibly high deuterium kinetic isotope effect, on the order of 60 or more (20) that converts arachidonic acid to leukotrienes with direct immune cell activating cytokine properties, is shut down in virus hosting and/or vaccine and adjuvant treated cells, alike.

25. On the other hand, local and generalized low grade systemic inflammation due to influenza vaccinations may elicit both an immune response but also promote virus propagation via arachidonic acid dumping into oxygenated adjacent host tissues and the circulation, where arachidonic acid is a component of the lipid envelope of RNA viruses as well as their rafts for penetrating cellular membranes during virus shedding.

26. Leukotrienes produced in adjacent cells promote plasma leakage and leukocyte adhesion in postcapillary venules (21), which have been described in COVID-19 (22) and Kaposi's sarcoma (23).

27. I am not against vaccines, but current (the last six decades) vaccines with many pro-inflammatory ingredients, including heavy metals, polysorbate 80 and other excipients do not promote proper natural immunity. I have attached two abstracts of recent related articles on the role of immunology in health and diseases. (Exhibit "B").

28. As a medical scientist who has researched immune system function, among others, via metabolic studies for more than 3 decades, and given my understanding of the increasing and complicating immune responses the flu vaccine poses on the human body, mandating the flu vaccine on the entire UC community (and I am a part of that community) during this pandemic that is not caused by the flu, while knowing that 58% of all VAERS (the Vaccine Adverse Reporting System of the CDC) reports filed are reported after the

influenza vaccination for which the U.S. treasury has compensated 2.6 billion dollars since 1989 (24), keeping in mind that this only represents 1 out of every 100 vaccine injuries that have actually occurred according to estimates, may likely be a very ill-thought out response to the current Corona health crisis.

29. In closing, I want to bring to the court's attention the facts published in a recent working paper by the National Bureau of Economic Research that discusses "Four Stylized Facts About Covid-19" (25). The three authors, among them Andrew Atkeson who is the Stanley M. Zimmerman Professor of Economics and Finance at the Department of Economics at UCLA, cast strong doubt on measures suggested to reducing the spread of Covid-19 and the deaths due to this deadly pandemic. They present the following facts:

30. First: across al countries and U.S. states that we study, the growth rates of daily deaths from COVID-19 fell from a wide range of initially high levels to levels close to zero within 20-30 days after each region experienced 25 cumulative deaths. (California and the UC system might have passed this stage; therefor I refer to coordinating with local health officials for facts and data.)

31. Second: after this initial period, growth rates of daily deaths have hovered around zero or below everywhere in the world.

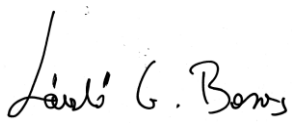
32. Third: the cross section standard deviation of growth rates of daily deaths across locations fell very rapidly in the first 10 days of the epidemic and has remained at a relatively low level since then.

33. Fourth: when interpreted through a range of epidemiological models, these first three facts about the growth rate of COVID deaths imply that both the effective reproduction

numbers and transmission rates of COVID-19 fell from widely dispersed initial levels and the effective reproduction number has hovered around one after the first 30 days of the epidemic virtually everywhere in the world.

34. I argue that the reaction of the University of California to mandate the flu vaccine for all staff and students, a Pharmaceutical Intervention not without risk, may be an overstated policy based on incomplete assumptions and data as well as a lack of understanding of the possible consequences of such a mandate based on virus interference.

35. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration was executed on September 16, 2020 in Szeged, Hungary, European Union.



László G. Boros, MD

EXHIBIT “A”

LB CV from web site

László Géza Boros, MD

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Electronic correspondence: contact@laszlogboros.com; boros.laszlo@yahoo.com

A p p o i n t m e n t s

Title	Affiliation	Dates of Appointment
Professor	***Departments of Pediatrics, Endocrinology & Metabolism, UCLA School of Medicine, Los Angeles, CA, USA***	***July 2020 – present (step III)*** ***July 2017 – June 2020 (step II)*** ***July 2014 – June 2017 (step I)***
Principal Investigator	***UCLA Clinical and Translational Science Institute (CTSI), Los Angeles, CA, USA***	***July 2011 - present***
Investigator	***The Lundquist Institute for Biomedical Innovations at the Harbor-UCLA Medical Center, Torrance, CA, USA***	***January 2006 - present***
Chief Scientist	***SIDMAP, LLC., Culver city, CA, USA***	***August 2004 - present***
Associate Professor	*Departments of Endocrinology & Pediatrics, UCLA School of Medicine, Los Angeles, CA, USA*	*July 2004 – June 2014*
Co-Director	*BioMedical Mass Spectroscopy Research Laboratory, Los Angeles Biomedical Research Institute at Harbor-UCLA, Torrance, CA, USA*	*December 1998 – Apr 2004*
Assistant Professor	*Departments of Endocrinology & Pediatrics, UCLA School of Medicine, Los Angeles, CA, USA*	*September 1998 – June 2004*
Research Scientist	*Division of General Surgery, The Ohio State University College of Medicine, Columbus, OH, USA*	*May 1996 – Aug 1998*
Medical Student Research Advisor	*The Ohio State University College of Medicine, Columbus, OH, USA*	*January 1995 – Aug 1998*
Research Associate 2-B/H, Postdoctoral Researcher	*Division of General Surgery, The Ohio State University College of Medicine, Columbus, OH, USA*	*June 1990 - May 1996*
Visiting Scholar	*Essen University Medical School Department of Internal Medicine, Essen, Germany*	*January 1989 – May 1990*
Postgraduate Research Fellow	*Hungarian Academy of Sciences, Budapest, Hungary*	*September 1987 – Dec 1989*

Education

School & Location	*Degrees*	Attendance	*Field of Study*
Miklós Bercsényi High School Törökszentmiklós, Hungary	***High School Diploma***	**1976 – 1980**	***Biology, Physics***
Albert Szent-Györgyi School of Medicine Szeged, Hungary, EU	***Doctor of Medicine (M.D.)***	**1981 – 1987**	***Medicine***

Certifications

Unrestricted License to Practice Medicine in Hungary and the European Union, Hungarian Board of Medical Examiners, 17/1987 O.E. Szeged, Hungary

United States Medical Licensing Examination (USMLE – ID-0-519-920-3) - Basic Medical Sciences (1995)

Professional Memberships & Awards

Three-year domestic research fellowship award of the Hungarian Academy of Sciences (1987)
C. Williams Hall Outstanding Publication Award - Academy of Surgical Research of the USA (1997)
American Society for Leukocyte Biology (ASLA; 1992-1995)
American Association for Cancer Research (AACR; 1998-2012; Membership No: 70054)
American Pancreatic Association (APA; 1998-present)
The American Physiological Society (APS; 1998-2010; Membership No: 31927)
Richard E. Weitzman Memorial Research Award – University of California, Los Angeles, CA, USA, June 2001
American Gastroenterological Association (AGA; 2002-2007; Membership No: 902797)
Excellence in Clinical Research Award – GCRC at Harbor-UCLA Medical Center, September 2004
Metabolomics Society (2004-present; Membership No: 04942012)
Géza Hetényi Memorial Membership Award of the Hungarian Gastroenterological Society (2007)
Public Health Impact Investigator Award of the United States Food and Drug Administration (2011)
President - USA West Coast Hungarian Scientist Club (2014)
Science Award the county of Jász-Nagykun-Szolnok – Hungary, European Union (2014)
Best Publication Award - Metabolomics Society & Springer Nature – San Francisco, CA, USA (2015)
External Member – Hungarian Academy of Sciences – Medical Sciences (V. - 3839/1/2015/HTMT)
Regional Member Scientists' Club Szeged – Hungarian Academy of Sciences (2018)
Twenty Years' Service Award from the Los Angeles Biomedical Research Institute (LABIOMED) (2019)
President – Scientific Translators of Ancient Literature - Hungary, European Union (2019-present)

Consulting & Scientific Expert Work

Central Research Institute of Experimental Medicine, Hungarian Academy of Sciences, Budapest, VIII. Szigony street 43, Hungary - Consultant and Collaborator, Carcinogenesis and Metabolic Profiling 1996 - 2003.

Hermanies, Major, Castelli & Goodman (Cincinnati, OH). Medical Expert Consultant; Parsley *vs*. Terminix - Pesticide (Isofenphos) Poisoning and Chronic Myeloid Leukemia (case evaluation), 1997 – 2002.

Goodson & Mullins, LTD (Cincinnati, OH). Medical Expert Consultant and Witness; Parsley vs. Terminix (legal arbitration, public) 2002 – 2003. Parsley v. Terminix International Co., No. C-3-97-394, 1998 U.S. Dist. LEXIS 22891 (S.D. Ohio Sept. 15, 1998). Additional reference: Contracting with tortfeasors: Mandatory arbitration clauses and personal injury claims. Elizabeth G. Thornburg, Professor of Law, Southern Methodist University, Dedman School of Law (page 259-260).

https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1323&context=lcp

Biromedicina Research & Development, Inc. (Budapest, Hungary) – Consultant, Tumor Growth Inhibitory Metabolic Effects of Fermented Wheat Germ, 1999 – 2008.

GenPath Pharmaceuticals, Inc. (Cambridge, Massachusetts, USA) – Scientific Advisor and Consultant, 2004 - 2005.

Aveo Pharmaceuticals, Inc. (Cambridge, Massachusetts, USA) – Scientific Advisor and Consultant, 2005 - 2006.

Patrick Swayze's diagnosis with pancreatic cancer medical condition and prognosis coverage (Los Angeles, CA, USA) – Medical Respondent - Access-Hollywood, Entertainment Tonight, E-news! March 6 – 2008
https://www.accessonline.com/articles/friends-celebrities-offer-support-for-patrick-swayze-62739

Cornerstone Pharmaceuticals, Inc. (Cranbury, NJ) – Consultant, April 2010 – 2011.

United States Food and Drug Administration (FDA) National Center for Toxicological Research (NCTR) (Jefferson, Arkansas) – Consultant and Advisor, April 2010 – 2019.

Center for Chemical Biology, *Stanford University*, *Stanford Research Institute International* (SRI), Ravenswood Avenue, Menlo Park CA 94025 USA – Advisor/Consultant, January 2013 – 2018.

Pacific West Law Group, LLP - Oxygen treatment and deuterium depletion in integrative medicine, Mill Valley CA 94941 USA –Medical Expert Consultant, December 2018 – 2019.

Patents

Methods and compositions for detecting immune system activation. United States Patent Application number WO2013142303 A1; Application number PCT/US2013/031879; Publication date Sep 26, 2013; Filing date Mar 15, 2013; Priority date Mar 19, 2012

Compositions comprising plant-derived polyphenolic compounds and inhibitors of reactive oxygen species and methods of using thereof. United States of America Patent Application US20040259816 A1; Application number US 10/824,597; Publication date Dec 23, 2004; Filing date Apr 15, 2004; Priority date Oct 1, 2002

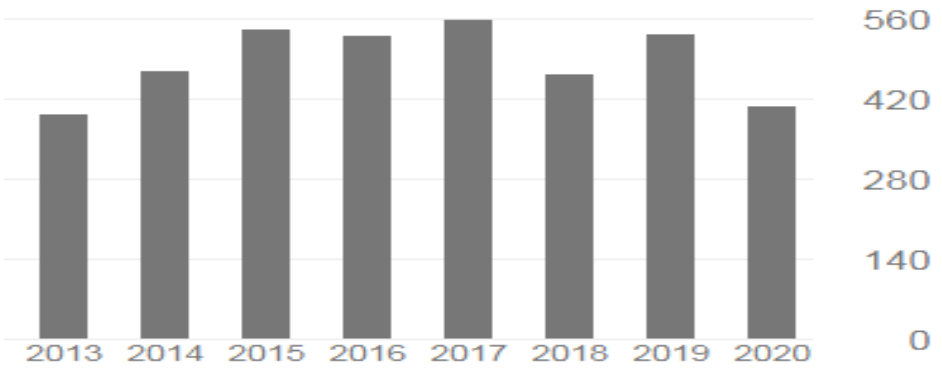
Compositions comprising plant-derived polyphenolic compounds and inhibitors of reactive oxygen species and methods of using thereof. United States Patent Application number PCT/US2005/011741; Publication date Oct 27, 2005; Filing date Apr 7, 2005; Priority date Apr 15, 2004

Analyzing non-toxic stable labeled glucose isotope formation via mass spectrometry/nuclear magnetic resonance. United States of America Patent Application number US 10/192,744; Publication date Sep 25, 2003; Filing date Jul 9, 2002; Priority date Mar 22, 2002

Using an isotope such as a stable (13C) isotope for labeling a metabolome to examine mechanisms of cellular substrate flow modification in response to various drugs, which can improve the drug discovery and testing processes. United States Patent Application number US 10/192,743; Publication date Sep 25, 2003; Filing date Jul 9, 2002; Priority date Mar 22, 2002

Publication Statistics (Google Scholar)

	All	Since 2015
Citations	7343	3032
h-index	48	31
i10-index	96	65



Editorial work

Scientific Reports (ISSN 2045-2322) Member of the Editorial Board (2019 - present) – Publisher: Nature

Molecules (ISSN 1420-3049) Member of the Editorial Board (2019 - present) - Publisher: MDPI

Medicine® (ISSN: 0025-7974) Editor (2016 – present) - Publisher: Wolters Kluwer; (Frequency: Weekly)

Metabolomics (ISSN 1573-3890) Editor & Reviewer (2005 – present)

Pancreas (ISSN 1536-4828) Associate Editor & Reviewer (1999 – present)

Session Chair Assignments

Pharmaceutical & Disease State Applications in Drug Development. Advances in Metabolic Profiling, London, United Kingdom, Nov 1-2, 2005.

Surgical Treatment of Pancreatic Cancer. 41st Meeting of the European Pancreatic Club (APC), Szeged, Hungary, July 3, 2009.

Second Scientific Session, 1st International Symposium on Deuterium Depletion, Budapest, Hungary, May 14, 2010.

Second Scientific Session, 2nd International Symposium on Deuterium Depletion, Budapest, Hungary, May 17-18, 2012. Co-chairman Professor Richard J. Robins, University of Nantes.

Biochemical Aspects and Mechanism of Action of Deuterium Depletion Session, 3rd International Symposium on Deuterium Depletion, Budapest, Hungary, May 08, 2015. Co-chair: Dr. Gabor Somlyai, HYD, LLC.

European Society for Isotope Research (ESIR), Methods & Instrumental Techniques Session, Zadar, Croatia, September 23, 2015. Co-chair: S. Halas, Mass Spectrometry Laboratory, Institute of Physics, Marie Curie-Sklodowska University, Lublin, Poland.

Third Scientific Session, 4th International Symposium on Deuterium Depletion, Budapest, Hungary, October 18, 2019.

Research, Academic & Teaching Committees

MASS SPECTROMETRY ANALYSIS PLANNING COMMITTEE – THE LUNDQUIST INSTITUTE OF BIOMEDICAL INNOVATION AT THE HARBOR-UCLA MEDICAL CENTER, TORRANCE, CA (2000-PRESENT)

UCLA SPECIAL PROGRAM OF RESEARCH EXCELLENCE (SPORE) IN PANCREATIC CANCER - DEVELOPMENTAL RESEARCH PROGRAM COMMITTEE (2002-2008)

UCLA – UCSD (SAN DIEGO) CENTER GRANT FOR PANCREATIC CANCER PRELIMINARY/FEASIBILITY GRANTS COMMITTEE - DEVELOPMENTAL RESEARCH PROGRAM COMMITTEE (2002-2005)

METABOLOMICS (ISSN 1573-3890) (SUPERVISING MEMBER - ELECTION COMMITTEE, 2012)

HIRSHBERG FOUNDATION FOR PANCREATIC CANCER RESEARCH SCIENTIFIC ADVISORY BOARD (2003 – 2016)

HIRSHBERG FOUNDATION FOR PANCREATIC CANCER RESEARCH SEED GRANTS PANEL (REVIEWER, 2003 – 2015)

WEITZMAN RESEARCH AWARD SELECTION COMMITTEE – HARBOR-UCLA RESEARCH AND EDUCATION INSTITUTE FACULTY SOCIETY (2003-20015)

MEMBER - PRESIDENTIAL SUBCOMMITTEE - HUNGARIAN SCIENCE ABROAD - HUNGARIAN ACADEMY OF SCIENCES – SECTION OF MEDICAL SCIENCES (V.) - (2014-2017)

UCLA PEDIATRICS EXECUTIVE DEPARTMENT CHAIR FIVE-YEAR ADMINISTRATIVE REVIEW COMMITTEE – REVIEWER (2015)

ASSOCIATION OF AMERICAN MEDICAL COLLEGES' (AAMC) FACULTY FORWARD ENGAGEMENT PANEL – SELECTED FACULTY SURVEYOR (2016)

AMERICAN COLLEGE FOR ADVANCEMENT IN MEDICINE (ACAM) – EDUCATION COMMITTEE – MEMBER (2016-2019)

^{13}CIGNATURE ^{2}HEALTH METABOLIC CLINIC – SANTA MONICA, CA - CHIEF SCIENTIFIC ADVISOR (2016-2019)

Peer Reviewed Publications

1. Pap, A., **Boros, L.G.** Alcohol-induced chronic pancreatitis in rats after temporary occlusion of the biliopancreatic ducts with Ethibloc. *Pancreas* 4: 249-255, 1989.

2. Pap, A., **Boros, L.G.**, Hajnal, F. Essential role of cholecystokinin in pancreatic regeneration after 60% distal resection in rats. *Pancreas* 6: 412-418, 1991.

3. **Boros, L.G.**, Lepow, C., Ruland, F., Flancbaum, L.J., Townsend, M.C. CD-ROM source data uploaded to the operating and storage devices of an IBM 3090 mainframe through a PC terminal. *Computer Methods & Programs Biomedicine* 38: 77-89, 1992.

4. **Boros, L.G.**, Damico, J., Flancbaum, L.J., Townsend, M.C., Beckley, P.D., Jones, S.D. An automated computer method utilizing Procomm Plus and DataEase (4.2) PC - and SAS (6.06) mainframe software for isolated, perfused guinea pig heart studies. *Computer Methods & Programs Biomedicine* 39: 271-284, 1993.

5. Oberyszyn, T.M., Sabourin, C.L., Bijur, G.N., Oberyszyn, A.S., **Boros, L.G.**, Robertson, F.M. Interleukin-1 gene expression and localization of interleukin-1 protein during tumor promotion. *Molecular Carcinogenesis* 7: 238-248, 1993.

6. Robertson, F.M., Bijur, G.N., Oberyszyn, A.S., Pellegrini, A., **Boros, L.G.**, Sabourin, C.L., Oberyszyn, T.M. Granulocyte-macrophage colony stimulating factor gene expression and function during tumor promotion. *Carcinogenesis* 15: 1017-1029, 1994.

7. Choban, P.S., McKnight, T., Flancbaum, L.J., Sabourin, C.L., Bijur, G.N., **Boros, L.G.**, Marley, J., Burge, J.C., Robertson, F.M. Characterization of a murine model of acute lung injury (ALI): a prominent role for interleukin-1. *Journal of Investigative Surgery* 9: 95-109, 1994.

8. Robertson, F.M., Pellegrini, A.E., Ross, M.S., Oberyszyn, A.S., **Boros, L.G.**, Bijur, G.N., Sabourin, C.L., Oberyszyn, T.M. Interleukin-1 gene expression during wound healing. *Wound Repair & Regeneration* 3: 473-84, 1995.

9. Fisher, W.E., **Boros, L.G.**, O'Dorisio, T., O'Dorisio, S., Schirmer, W.J. The influence of diabetes on the growth of pancreatic cancer. *Surgical Forum* 45: 151-152, 1994.

10. Fisher, W.E., **Boros, L.G.**, Tamaddon, K.A., O'Dorisio, S.M., O'Dorisio, T.M., Schirmer, W.J. Somatostatin-receptor status of pancreatic adenocarcinoma predicts response to somatostatin therapy in vitro and in vivo. *Surgical Forum* 16: 138-140, 1995.

11. Fisher, W.E., **Boros, L.G.**, Schirmer, W.J. Reversal of enhanced pancreatic cancer growth in diabetes by insulin. *Surgery* 118: 453-457, 1995.

12. Fisher, W.E., **Boros, L.G.**, Tamaddon, K.A., O'Dorisio, T.M., O'Dorisio, S.M., Schirmer, W.J. GI hormonal changes in diabetes influence pancreatic cancer growth. *Journal of Surgical Research* 58: 754-758, 1995.

13. Fisher, W.E., **Boros, L.G.**, Schirmer, W.J. Insulin promotes pancreatic cancer: evidence for endocrine influence on exocrine pancreatic tumors. *Journal of Surgical Research* 63: 310-313, 1996.

14. Fisher, W.E., Muscarella, P., **Boros, L.G.**, Schirmer, W.J. Variable effect of streptozotocin-diabetes on the growth of hamster pancreatic cancer (H2T) in the Syrian hamster and nude mouse. *Surgery* 123: 315-320, 1998.

15. Melvin, W.S., **Boros, L.G.**, Muscarella, P., Brandes, J.L., Johnson, J.A., Fisher, W.E., Schirmer, W.J., Ellison, E.C. Dehydroepiandrosterone-sulfate inhibits pancreatic cancer cell proliferation *in vitro* and *in vivo*. *Surgery* 121: 392-397, 1996.

16. **Boros, L.G.**, Puigjaner, J., Cascante, M., Lee, P., Brandes, J.L., Bassilian, S., Yusuf, F.I., Williams, R.D., Muscarella, P., Melvin, W.S., Schirmer, W.J. Oxythiamine and dehydroepiandrosterone inhibit the nonoxidative synthesis of ribose and cancer cell proliferation. *Cancer Research* 57: 4242-4248, 1997.

17. Fisher, W.E., Doran, T.A., Muscarella, P., **Boros, L.G.**, Ellison, E.C., Schirmer, W.J. Somatostatin receptor subtype 1-5 gene expression in human pancreatic cancer. *Journal of the National Cancer Institute* 90: 322-324, 1998.

18. **Boros, L.G.**, Lee, P., Brandes, J.L., Cascante, M., Muscarella, P., Schirmer, W.J., Melvin, W.S. Nonoxidative pentose phosphate pathways and their direct role in ribose synthesis in tumors: is cancer a disease of cellular glucose metabolism? *Medical Hypotheses* 50: 55-59, 1998.

19. **Boros, L.G.**, Brandes, J.L., Yusuf, F.I., Cascante, M., Williams, R.D., Schirmer, W.J. Inhibition of the oxidative and nonoxidative pentose phosphate pathways by somatostatin. A possible mechanism of antitumor action. *Medical Hypotheses* 50: 501-506, 1998.

20. **Boros, L.G.**, Brandes, J.L., Lee, P., Cascante, M., Puigjaner, J., Revesz, E., Bray, T.M., Schirmer, W.J., Melvin, W.S. Thiamin supplementation to cancer patients: A double edged sword. *Anticancer Research* 18: 595-602, 1998.

21. **Boros, L.G.**, Williams, R.D. Chronic isofenphos poisoning: case report of agnogenic myeloid metaplasia with a rapid progression into acute myeloid leukemia. *Leukemia Research* 22: 849-851, 1998.

22. Lee P., **Boros, L.G.**, Puigjaner, J., Bassilian, S., Lim, S., Cascante, M. Mass isotopomer study of the nonoxidative pathways of the pentose cycle with [1,2-$^{13}C_2$]glucose. *American Journal of Physiology [Endocrinology & Metabolism]* 274: E843-E851, 1998.

23. Muscarella, P., **Boros, L.G.**, Fisher, W.E., Rink, C., Melvin, W.S. Oral dehydroepiandrosterone inhibits the growth of human pancreatic cancer in nude mice. *Journal of Surgical Research* 79: 154-157, 1998.

24. Fisher, W.E., Muscarella, P., **Boros, L.G.**, Schirmer, W.J. Gastrointestinal hormones as potential adjuvant treatment of exocrine pancreatic adenocarcinoma. *International Journal of Pancreatology* 24: 169-80, 1998.

25. Rais, B., Comin, B., Puigjaner, J., Brandes, J.L., Creppy, E., Saboureau, D., Ennamany, R., Lee, W-N.P., **Boros, L.G.**, Cascante, M. Oxythimaine and dehydroepiandrosterone induce a G1 phase cycle arrest in Ehrlich's tumor cells through inhibition of the pentose cycle. *FEBS Letters* 456: 113-19, 1999.

26. Cascante, M., Centelles, J.J., Veech, R.L., Lee, W-N.P., **Boros, L.G.**, The role of thiamine (vitamin-B_1) and transketolase in tumor cell proliferation. *Nutrition & Cancer* 36: 150-154, 2000.

27. **Boros, L.G.**, Torday, J.S., Lim, S., Bassilian, S., Cascante, M., Lee, W-N.P. TGF-□$_2$ promotes glucose carbon incorporation into nucleic acid ribose through the non-oxidative pentose cycle in lung epithelial carcinoma cells. *Cancer Research* 60: 1183-1195, 2000.

28. **Boros, L.G.**, Lim, S., Bassilian, S., Lee, W-N.P. Genistein inhibits non-oxidative ribose synthesis in MIA pancreatic adenocarcinoma cells: a new mechanism of controlling tumor growth. *Pancreas* 22: 1-7, 2000.

29. Lee, W-N.P., Bassilian, S., Lim, S., **Boros, L.G.** Loss of regulation of lipogenesis in the Zucker diabetic (ZDF) rat. *American Journal of Physiology [Endocrinology & Metabolism]* 279: E425-E432, 2000.

30. **Boros, L.G.** Population thiamine status and varying cancer rates between Western, Asian and African countries. *Anticancer Research* 20: 2245-8, 2000.

31. **Boros, L.G.**, Lapis, K., Szende, B., Tomoskozi-Farkas, R., Balogh, A., Boren, J., Marin, S., Cascante, M., Hidvegi, M. Wheat germ extract decreases glucose uptake and RNA ribose formation but increases fatty acid synthesis in MIA pancreatic adenocarcinoma cells. *Pancreas* 23: 141-147, 2001.

32. **Boros, L.G.**, Williams, R.D. Isofenphos induced metabolic changes in K562 myeloid blast cells. *Leukemia Research* 25: 883-890, 2001.

33. Comín-Anduix, B., Boren, J., Martinez, S., Moro, C., Centelles, J.J., Trebukhina, R., Petushok, N., Lee, W-N.P., **Boros, L.G.**, Cascante, M. The effect of thiamine supplementation on tumor proliferation: A metabolic control analysis study. *European Journal of Biochemistry* 268: 4177-82, 2001.

34. Boren, J., Cascante, M., Marin, S., Comín-Anduix, B., Centelles, J.J., Lim, S., Bassilian, S., Ahmed, S., Lee W-N.P., **Boros, L.G**. Gleevec (STI571) influences metabolic enzyme activities and glucose carbon flow towards nucleic acid and fatty acid synthesis in myeloid tumor cells. *Journal of Biological Chemistry* 276: 37747-37753, 2001.

35. **Boros, L.G.**, Lee, W-N.P., Go, V.L.W. A metabolic hypothesis of cell growth and death in pancreatic cancer**.** *Pancreas* 24: 26-33, 2002.

36. Bassilian, S., Ahmed, S., Lim, S.K., **Boros, L.G.,** Mao, C.S., Lee, W-N.P. Loss of regulation of lipogenesis in the Zucker diabetic rat. II. Changes in stearate and oleate synthesis. *American Journal of Physiology Endocrinology & Metabolism* 282: E507-13, 2002.

37. **Boros, L.G.**, Cascante, M., Lee, W-N.P. Metabolic Profiling of Cell Growth and Death in Cancer: applications in drug discovery. *Drug Discovery Today* 7: 364-372, 2002.

38. Cascante, M., **Boros, L.G.**, Comin, B., Atauri, P., Centelles, J.J., Lee, W-N.P. Metabolic control analysis in drug discovery and disease. *Nature Biotechnology* 20: 243-249, 2002.

39. **Boros, L.G.**, Lee, W-N.P., Cascante, M. Imatinib and chronic-phase leukemias. *New England Journal of Medicine* 347: 67-68, 2002.

40. **Boros, L.G.**, Torday, J.S., Lee W-N.P., Rehan, V.H. Oxygen-induced metabolic changes and transdifferentiation in immature fetal rat lung fibroblasts. *Molecular Genetics & Metabolism* 77: 230-236, 2002.

41. Comín-Anduix, B., **Boros, L.G.**, Marin, S., Boren, J.A., Callol-Massot, C., Centelles, J.J., Torres, L., Agell, N., Bassilian, S., Cascante, M.S. Fermented wheat germ extract inhibits enzymes of glucose metabolism and induces apoptosis through the activation of poly(ADP-ribose) polymerase in Jurkat T-cell leukemia tumor cultures. *Journal of Biological Chemistry* 77: 46408-464014, 2002.

42. Bulotta, A., Hui, H., Anastasi, E., Bertolotto, C., **Boros, L.G**., Di Mario, U., Perfetti, R. Cultured pancreatic ductal cells undergo cell cycle re-distribution and beta-cell-like differentiation in response to glucagon-like peptide-1. *Journal of Molecular Endocrinology* 29: 347-60, 2002.

43. Guo, T.B., **Boros, L.G.**, Chan, K.C., Hikim, A.P., Hudson, A.P., Swerdloff, R.S., Mitchell, A.P., Salameh, W.A. Spermatogenetic expression of RNA-binding motif protein 7, a protein that interacts with splicing factors. *Journal of Andrology* 24: 204-214, 2003.

44. Bulotta, A., Perfetti, R., Hui, H., **Boros, L. G.** Glucagon-like peptide-1 stimulates glucose derived *de novo* fatty acid synthesis and chain elongation during cell differentiation. *Journal of Lipid Research* 44: 1559-1564, 2003.

45. Boren, J., Lee, W.N., Bassilian, S., Centelles, J.J., Lim, S., Ahmed, S., **Boros, L.G.,** Cascante, M. The stable isotope-based dynamic metabolic profile of butyrate induced HT29 cell differentiation. *Journal of Biological Chemistry* 278: 28395-28402, 2003.

46. **Boros, L.G.,** Steinkamp, M.P., Fleming, J.C., Lee, W-N.P., Cascante, M., Neufeld, E.J. Defective RNA ribose synthesis in fibroblasts from patients with thiamine-responsive megaloblastic anemia (TRMA): mechanism for the syndrome. *Blood* 102: 3556-3562, 2003.

47. **Boros, L.G.**, Brackett, D.J., Harrigan, G.G. Metabolic biomarker and kinase drug target discovery in cancer using stable isotope-based dynamic metabolic profiling (SIDMAP). *Current Cancer Drug Targets* 3: 445-453, 2003.

48. Marin, S., Chiang, K, Bassilian, S., Lee, W-N.P., ***Boros, L.G.***, Fernández-Novell, J.M., Centelles, J.J., Medrano, A., Rodriguez-Gil, J.E., Cascante, M. Metabolic strategy of boar spermatozoa revealed by a metabolomic characterization. *FEBS Letters* 554: 342-346, 2003.

49. Marin, S., Lee, W.N., Bassilian, S., Lim, S., **Boros, L.G.**, Centelles, J.J., Fernandez-Novell, J.M., Guinovart, J.J., Cascante, M. Dynamic profiling of the glucose metabolic network in fasted rat hepatocytes using [1,2- $^{13}C_2$]-glucose. *Biochemical Journal* 381: 287-294, 2004.

50. Williams, R.D., **Boros, L.G.**, Kolanko, C.J., Jackman, S.M., Eggers, T.R. Chromosomal aberrations in human lymphocytes exposed to the anticholinesterase pesticide isofenphos with mechanisms of leukemogenesis. *Leukemia Research* 28: 947-958, 2004.

51. Lee, W.N., Guo, P., Lim, S., Bassilian, S., Lee, S.T., Boren, J., Cascante, M., Go, V.L., **Boros, L.G.** Metabolic sensitivity of pancreatic tumour cell apoptosis to glycogen phosphorylase inhibitor treatment. *British Journal of Cancer* 91: 2094-2100, 2004.

52. **Boros, L.G.**, Serkova, N.J., Cascante, M., Lee, W.N. Use of metabolic pathway flux information in targeted cancer drug design. *Drug Discovery Today Therapeutic Strategies* 1: 435-443, 2004.

53. Harrigan, G.G., Brackett, D.J., **Boros, L.G.** Medicinal chemistry, metabolic profiling and drug target discovery: a role for metabolic profiling in reverse pharmacology and chemical genetics. *Mini Reviews in Medicinal Chemistry* 5: 13-20, 2005.

54. Eibl, G., Takata, Y., **Boros, L.G.**, Liu, J., Okada, Y., Reber, H.A., Hines, O.J. Growth Stimulation of COX-2-Negative Pancreatic Cancer by a Selective COX-2 Inhibitor. *Cancer Research* 65: 982-990, 2005.

55. Balog, A., Gyulai, Z., **Boros, L.G.**, Farkas, G., Takacs, T., Lonovics, J., Mandi, Y. Polymorphism of the TNF-alpha, HSP70-2, and CD14 genes increases susceptibility to severe acute pancreatitis. *Pancreas* 30:e46-e50, 2005.

56. Vizan, P., **Boros, L.G.,** Figueras, A., Capella, G., Mangues, R., Bassilian, S., Lim, S., Lee, W-N.P., Cascante, M. K-ras codon-specific mutations produce distinctive metabolic phenotypes in human fibroblasts. *Cancer Res*. 65: 5512-5, 2005.

57. **Boros, L.G.,** Nichelatti, M., Shoenfeld, Y. Fermented Wheat Germ Extract (Avemar) in the Treatment of Cancer and Autoimmune Diseases. *Ann N Y Acad Sci*. 1051: 529-542, 2005. DOI: 10.1196/annals.1361.097

58. **Boros, L.G.,** Nichelatti, M., Shoenfeld, Y. Fermentiertes Weizenkeimextrakt (Avemar) bei der Behandlung von Krebs- und Autoimmunerkrankungen. *Ann N Y Acad Sci* (GER). 1051: 529-542, 2005.

59. Serkova, N., **Boros, L.G.** Detection of resistance to imatinib by metabolic profiling: clinical and drug development implications. *Am J Pharmacogenomics* 5: 293-302, 2005.

60. **Boros, L.G.**, Lerner, M.R., Morgan, D.L., Taylor, S.L., Smith, B.J., Postier, R.G., Brackett, D.J. [1,2-$^{13}C_2$]-D-glucose profiles of the serum, liver, pancreas and DMBA-induced pancreatic tumors of rats. *Pancreas* 31: 337-43, 2005.

61. Maguire, G., Lee, W-N.P., Manheim, D., **Boros, L.G**. SIDMAP: a metabolomics approach to asses the effects of drug candidates on the dynamic properties of biochemical pathways. *Expert Opin Drug Discov* 1: 351-359, 2006.

62. Rehan, V.K., Wang, Y., Sugano, S., Santos, J., Patel, S., Sakurai, R., **Boros, L.G.**, Lee, W.P., Torday, J.S. In utero nicotine exposure alters fetal rat lung alveolar type II cell proliferation, differentiation, and metabolism. *Am J Physiol Lung Cell Mol Physiol*. 292: 323-333, 2007.

63. Centelles, J.J., Ramos-Montoya, A., Lim, S., Bassilian, S., **Boros, L.G.**, Marín, S., Cascante, M., Lee, W-N.P. Metabolic profile and quantification of deoxyribose synthesis pathways in HepG2 cells. *Metabolomics* 3: 105-111, 2007.

64. Huang, J., Gabrielsen, J.S., Cooksey, R.C., Luo, B., **Boros, L.G.**, Jones, D.L., Jouihan, H.A., Soesanto, Y., Knecht, L., Hazel, M.W., Kushner, J.P., McClain, D.A. Increased glucose disposal and AMP-dependent kinase signaling in a mouse model of hemochromatosis. *Journal of Biological Chemistry* 282: 37501-37507, 2007.

65. **Boros, L.G.**, Boros, T.F. Use of metabolic pathway flux information in anticancer drug design. *Ernst Schering Found Symp Proc.* 4:189-203, 2007.

66. Harrigan, G.G, Maguire, G., **Boros, L.G.** Metabolomics in Alcohol Research and Drug Development. *Alcohol Res Health* 31(1):: 26-35, 2008.

67. Vazquez, A., Beg, Q.K., de Menezes, M.A., Ernst, J., Bar-Joseph, Z., Barabasi, A.L., **Boros, L.G.**, Oltvai, Z.N. Impact of the solvent capacity constraint on E. coli metabolism. *BMC Syst Biol*. 2: 7, 2008.

68. **Boros, L.G.**, Deng, Q., Pandol, S.J., Tsukamoto, H., Go, V-L.W., Lee, W-N.P. Ethanol Diversely Alters Palmitate, Stearate, and Oleate Metabolism in the Liver and Pancreas of Rats Using the Deuterium Oxide Single Tracer. *Pancreas* 38:e47-e52, 2009.

69. Kominsky, D.J., Klawitter, J., Brown, J.L., **Boros, L.G**., Melo, J.V., Eckhardt, S.G., Serkova, N.J. Abnormalities in glucose uptake and metabolism in imatinib-resistant human BCR-ABL-positive cells. *Clinical Cancer Research* 15: 3442-50, 2009.

70. Hui, H., Huang, D., McArthur, D., Nissen, N., **Boros, L.G.**, Heaney, A.P. Direct spectrophotometric determination of serum fructose in pancreatic cancer patients. *Pancreas* 38:706-12, 2009.

71. Beger, R.D., Hansen, D.K., Schnackenberg, L.K., Cross, B.M., Fatollahi, J.J., Lagunero, F.T., Sarnyai, Z., **Boros, L.G**. Single valproic acid treatment inhibits glycogen and RNA ribose turnover while disrupting glucose-derived cholesterol synthesis in liver as revealed by the [U-C(6)]-d-glucose tracer in mice. *Metabolomics*. 5(3):336-345, 2009.

72. Espinoza, D.O., **Boros, L.G.**, Crunkhorn, S., Gami, H., Patti, M.E. Dual modulation of both lipid oxidation and synthesis by peroxisome proliferator-activated receptor-gamma coactivator-1alpha and -1beta in cultured myotubes. FASEB J. 24(4): 1003-1014, 2010.

73. Liu, H., Huang, D., McArthur, D.L., **Boros, L.G.**, Nissen, N., Heaney, A.P. Fructose Induces Transketolase Flux to Promote Pancreatic Cancer Growth. *Cancer Research* 70(15): 6368-6376, 2010.

74. Huang, D., Dhawan, T., Young, S., Yong, W.H., Boros, L.G., Heaney, A.P. Fructose impairs glucose-induced hepatic triglyceride synthesis. *Lipids Health Dis*. 10(1):20, 2011. - designated as 'Highly accessed'

75. Gu, W., Lloyd, D.J., Chinookswong, N., Komorowski, R., Sivits, G., Graham, M., Winters, K.A., Yan, H., **Boros, L.G.**, Lindberg, R.A., Veniant, M.M. Pharmacological targeting of glucagon and GLP-1 receptors has different effects on energy state and glucose homeostasis in diet-induced obese mice. *J Pharmacol Exp Ther* 338: 70-81, 2011.

76. Sonko, B.J., Schmitt, T.C., Guo, L., Shi, Q., **Boros, L.G.**, Leakey, J.E., Beger, R.D.. Assessment of usnic acid toxicity in rat primary hepatocytes using 13C isotopomer distribution analysis of lactate, glutamate and glucose. *Food Chem Toxicol* 49(11): 2968-2974, 2011.

77. Bhalla K., Hwang B.J., Dewi R.E., Ou L., Twaddel W., Fang H.B., Vafai S.B., Vazquez F., Puigserver P., **Boros, L.G.**, Girnun G.D.. PGC1 promotes tumor growth by inducing gene expression programs supporting lipogenesis. *Cancer Res* 71(21): 6888-6898, 2011.

78. **Boros L.G.**, Huang, D., Heaney, A.P. Fructose Drives Glucose via Direct Oxidation and Promotes Palmitate/Oleate Co-Release from Hepg2 Cells: Relevance with the Randle Cycle. *Metabolomics: Open Access* 2: 107, 2012. doi: 10.4172/2153- 0769.1000107

79. Huang, J., Simcox, J.,Mitchell, T.J., Jones, D., Cox, J., Luo, B., Cooksey, R.C., **Boros, L.G.**, McClain, D.A.. Iron regulates glucose homeostasis in liver and muscle via AMP-activated protein kinase in mice. *FASEB J* 27: 2845-2854, 2013. doi: 10.1096/fj.12-216929

80. Singh, A., Happel, C., Manna, S.K., Acquaah-Mensah, G., Carratero, J., Kumar, S., Nasipuri, P., Krausz, W.K., Wakabayashi, N., Dewi, L., **Boros, L.G.**, Gonzalez, F.J., Gabrielson, E., Wong, K.K., Girnun, G., Biswal, S. Transcription factor NRF2 regulates miR-1 and miR-206 to drive tumorigenesis. *Journal of Clinical Investigation* 123(7): 2921–2934, 2013. doi: 10.1172/JCI66353

81. Yang, Y., Lane, A.N., Ricketts, C.J., Sourbier, C., Wei, M-H., Shuch, B., Pike, L., Wu, M., Rouault, T.A., **Boros, L.G.**, Fan, T.W.-M., Linehan, W.M. Metabolic Reprogramming for Producing Energy and Reducing Power in Fumarate Hydratase Null Cells from Hereditary Leiomyomatosis Renal Cell Carcinoma. *PLoS ONE* 8(8): e72179, 2013. doi: 10.1371/journal.pone.0072179

82. Tedeschi P.M., Markert E.K., Gounder M., Lin H., Dvorzhinski D., Dolfi S.C., Chan L.L., Qiu J., DiPaola R.S., Hirshfield K.M., **Boros L.G.**, Bertino J.R., Oltvai Z.N., Vazquez A. Contribution of serine, folate and glycine metabolism to the ATP, NADPH and purine requirements of cancer cells. *Cell Death and Disease* 4: e877, 2013. doi: 10.1038/cddis.2013.393

83. Jenkins, Y., Sun, T.-Q., Markovtsov, V., Li, W., Nguyen, H., Foretz, M., Li, Y., Pan, A., Uy, G., Gross, L., Baltgalvis, K., Yung, S.L., Gururaja, T., Kinoshita, T., Owyang, A., Smith, I.J., McCaughey, M., White, K., Godinez, G., Alcantara, R., Choy, C., Ren, H., Basile, R., Sweeny, D.J., Xu, X., Issakani, S.D., Carroll, D.C., Goff, D.A., Shaw, S.J., Singh, R., **Boros, L.G.**, Laplante, M.-A., Marcotte, B., Kohen, R., Viollet, B., Marette, A., Payan, D.G., Kinsella, T.M., Hitoshi, Y. AMPK Activation through Mitochondrial Regulation Results in Increased Substrate Oxidation and Improved Metabolic Parameters in Models of Diabetes. *PLoS ONE* 8(12): e81870, 2013. doi:10.1371/journal.pone.0081870

84. Lamonte, G., Tang, X., Chen, J.L., Wu, J., Ding, C.K., Keenan, M.M., Sangokoya, C., Kung, H.N., Ilkayeva, O., Boros, L.G., Newgard, C.B., Chi, J.T. Acidosis induces reprogramming of cellular metabolism to mitigate oxidative stress. *Cancer and Metabolism* 1(1): 23, 2013. doi: 10.1186/2049-3002-1-23 (Highly Accessed)

85. Cantoria, M.J., **Boros, L.G.**, Meuillet, M.J. Contextual inhibition of fatty acid synthesis by metformin involves glucose-derived acetyl-CoA and cholesterol in pancreatic tumor cells. *Metabolomics* 10: 91-104, 2014. doi: 10.1007/s11306-013-0555-4 - Best Publication Award - Metabolomics Society & Springer – San Francisco, CA, USA, July 02, 2015

86. Laderoute, K.R., Calaoagan, J.M., Chao1, W-r., Dinh, D., Denko, N., Duellman, S., Kalra, J. Liu, X., Papandreou, I., Sambucetti, L., **Boros, L.G.** 5'-AMP-Activated Protein Kinase (AMPK) Supports the Growth of Aggressive Experimental

Human Breast Cancer Tumors. *Journal of Biological Chemistry* 289: 22850-64, 2014. PMID: 24993821 doi: 10.1074/jbc.M114.576371.

87. Reitman, Z,J, Duncan, C.G., Poteet, E., Winters, A., Yan, L.J., Gooden, D.M., Spasojevic, I., **Boros, L.G.**, Yang, S.H., Yan, H. Cancer-associated Isocitrate Dehydrogenase 1 (IDH1) R132H Mutation and D-2-hydroxyglutarate Stimulate Glutamine Metabolism under Hypoxia. *Journal of Biological Chemistry* 289: 23318-28, 2014. PMID: 24986863 doi: 10.1074/jbc.M114.575183.

88. Varma, V., **Boros, L.G.**, Nolen, G.T., Chang, C-W., Wabitsch, M., Beger, R.D., Kaput, J. Metabolic fate of fructose in human adipocytes: A targeted ^{13}C tracer fate association study. *Metabolomics* 11(3): 529-544, 2015. doi: 10.1007/s11306-014-0716-0

89. Glick, G.D., Rossignol, R., Lyssiotis, C.A., Wahl, D., Lesch, C., Sanchez, B., Liu, X., Hao, L.Y., Taylor, C., Hurd, A., Ferrara, J.L., Tkachev, V., Byersdorfer, C., **Boros, L.G.**, Opipari, A.W. Targeting increased anaplerotic metabolism of pathogenic T cells to treat immune disease. *Journal of Pharmacology & Experimental Therapeutics* 351: 298-307, 2014. PMID: 25125579 doi: 10.1124/jpet.114.218099.

90. Buescher, J.M., Antoniewicz, M.R., **Boros, L.G.**, Brugess, S., Brunengraber, H., Clish, C.B., DeBerardinis, R.J., Feron, O., Frezza, C., Ghesquiere, B., Gottlieb, E., Hiller, K., Jones, R.G., Kamphorst, J.J., Kibbey, R.G., Kimmelman, A.C., Locasale, J.W., Lunt, S.Y., Maddocks, O., Malloy, C., Metallo, C.M., Meuillet, E.J., Munger, J., Nöh, K., Rabinowitz, J.D., Ralser, M., Sauer, U., Stephanopoulos,G., St-Pierre, J., Tennant, D.A., Wittmann, C., Vander Heiden, M.G., Vazquez, A., Vousden, K., Young, J.D., Zamboni, N., Fendt, S-M.. A roadmap for interpreting 13C metabolite labeling patterns from cells. *Current Opinion in Biotechnology* 34C: 189-201, 2015. doi: 10.1016/j.copbio.2015.02.003

91. **Boros, L.G.**, Somlyai, G. Compartmentalized NADPH Synthesis, Intramolecular Deuterium Disequilibrium and Water Pools of Mammalian Cells. *Molecular Cell* 55: 253–263, 2014. http://www.cell.com/molecular-cell/comments/S1097-2765(14)00402-X

92. Varma, V., **Boros, L.G.**, Nolen, G. T., Chang, C-W., Wabitsch, M, Beger, R.D., Kaput, J. Fructose alters intermediary metabolism of glucose in human adipocytes and diverts glucose to serine oxidation in the one–carbon cycle energy producing pathway. *Metabolites* 5(2): 364-385, 2015. doi: 10.3390/metabo5020364

93. Montal, E. D., Dewi, R., Bhalla, K., Ou, L., Hwang, B.J., Ropell, A. E., Gordon, C., Liu, W-J., DeBerardinis, R. J., Sudderth, J., Twaddel, W., **Boros, L. G.**, Shroyer, K. R., Duraisamy, S., Drapkin, R., Powers, R. S., Rohde, J. M., Boxer, M. B., Wong, K-K., Girnun, G. D. PEPCK Coordinates the Regulation of Central Carbon Metabolism to Promote Cancer Cell Growth. *Molecular Cell* 60(Nov 19): 1-13. doi: 10.1016/j.molcel.2015.09.025

94. **Boros, L.G.**, D'Agostino, D.P., Katz, H.E., Roth, J.P., Meuillet, E.J., Somlyai, G. Submolecular regulation of cell transformation by deuterium depleting water exchange reactions in the tricarboxylic acid substrate cycle. *Medical Hypotheses* 87: 69-74, 2016. doi: 10.1016/j.mehy.2015.11.016

95. **Boros, L.G.**, Somlyai, G., Collins, T.Q., Patel, H., Beger, R.D. Serine Oxidation via Glycine Cleavage (SOGC) Continues its Emergence as a Hallmark of Defective Mitochondria. *Cell Metabolism* 23: 635–648, 2016. https://goo.gl/vTHaC0

96. **Boros, L.G.**, Collins, T.Q., Somlyai, G. What to eat or what not to eat - that is still the question. *Neuro-Oncology* 19(4): 595-596, 2017. doi: 10.1093/neuonc/now284

97. Somlyai, G., Collins, T.Q., Meuillet, E.J., Hitendra, P., D'Agostino, D.P., **Boros, L.G.** Structural homologies between Phenformin, Lipitor and Gleevec aim the same metabolic oncotarget in leukemia and melanoma. *Oncotarget* 8: 50187-50192, 2017. doi: 10.18632/oncotarget.16238

98. Edderkaoui, M., Chheda, C., Soufi, B., Zayou, F., Hu, R., Ramanujan, V.K., Pan, X., **Boros, L.G.**, Tajbakhsh, J., Madhav, A., Bhowmick, N., Wang, Q., Lewis, M., Tuli, R., Habtezion, A., Murali, R., Pandol, S.J. An Inhibitor of GSK3B and HDACs Kills Pancreatic Cancer Cells and Slows Pancreatic Tumor Growth and Metastasis in Mice. *Gastroenterology* 155: 1985–1998, 2018. doi: 10.1053/j.gastro.2018.08.028

99. Joyner, M.J., **Boros, L.G.**, Fink G. Biological Reductionism versus Redundancy in a Degenerate World. *Perspectives in Biology and Medicine* 61(4): 517-526, 2018. doi: 10.1353/pbm.2018.00612018

100. **Boros, L.G.**, Collins, T.Q., Boros, E.A., Lantos, F., Somlyai, G. Deuterium and metabolic water matter – what this means biochemically and clinically. Science Advances 4(8): eaat7314, 2018. DOI: 10.1126/sciadv.aat7314 - https://advances.sciencemag.org/content/4/8/eaat7314/tab-e-letters

Book Contributions

1. **Boros, L.G.,** Singer, M.V. Animal models of chronic pancreatitis. A critical review of experimental studies. *In:* Pancreatitis. New data and geographical distribution. *Eds.* H. Sarles, CD Johnson, JF Sauniere. Chapter 7, pages: 67-82. *Arnette Blackwell, Paris, France 1991.*

2. Robertson, F.M., Bijur, G.N., Oberyszyn, A.S., Nill, M.R., **Boros, L.G.**, Spencer, W.J., Sabourin, C.L., Oberyszyn, T.M. Interleukin-1 □ in murine multistage carcinogenesis. *In:* Skin Cancer: Mechanisms and Human Relevance. *Eds.* Hasan Mukhtar. Chapter 20, pages: 255-272. *CRC Press, Boca Raton, Ann Arbor, London, Tokyo* 1995.

3. Singer, M.V., **Boros, L.G.**, Mayr, C. Experimentelle Modelle der chronischen Pankreatitis. *In:* Erkrankungen des exokrinen Pankreas. *Eds.* Mössner, J., Adler, G., Fölsch, U.R., Singer, M.V., eds.. Jena, Stuttgart: Gustav Fischer, 1995: 303-312.

4. Cascante, M., Comin, B., Raïs, B., Boren, J., Centelles, J.J., Puigjaner, J., Lee, W-N.P., **Boros, L.G.** Application of metabolic control analysis to the design of a new strategy for cancer therapy. *In.* Technological and Medical Implications of Metabolic Control Analysis. *Eds.* Cornish-Bowden, A. and Cardenas, M.L. Kluwer Academic Publishers, The Netherlands, 1999: 173-180.

5. **Boros, L.G.**, Cascante, M., Lee, W-N.P. Stable Isotope-Based Dynamic Metabolic Profiling in Disease and Health. *In:* Metabolite Profiling: Its Role in Biomarker Discovery and Gene Function Analysis. *Eds.* Harrigan, G.G. and Goodacre, R.; Kluwer Academic Publishers, United States of America, 2003 pp. 141-169.

6. **Boros, L.G.**, Lee, W-N.P. Metabolic Network Characteristics in Cell Growth and Death in Cancer. *In:* Nutritional Oncology, Second Edition, *Eds.* Heber, Blackburn, Go, & Milner; Elsevier, United States of America, 2006 pp. 57-68.

7. **Boros, L.G.**, Lee, W-N.P. Targeted Drug Design and Metabolic Pathway Flux. *In:* Metabolome Analyses: Strategies for Systems Biology. *Eds.* Vaidyanathan, S., Harrigan, G.G. and Goodacre, R.; Springer, Boston, United States of America, 2005 pp. 323-337.

8. Cascante, M., **Boros, L.G.**, Boren J.A. Modeling of Regulation of Glycolysis and Overall Energy Metabolism Under a Systems Biology Approach. *In:* Handbook of Neurochemistry & Molecular Neurobiology 3rd, Brain Energetics, Integration of Molecular and Cellular Processes; *Eds*. Gibson & Dienel; Part 8, 2006 pp. 861-875.

9. Sarnyai, Z., **Boros, L.G.** Modeling Networks of Glycolysis, Overall Energy Metabolism and Drug Metabolism under a Systems Biology Approach. *In:* Annual Reports in Medicinal Chemistry, Chapter 20, Volume 43, 2008 pp. 329–349.

10. Cantoria, M.J., Patel, H., **Boros, L.G.**, Meuillet, E.J. Metformin and Pancreatic Cancer Metabolism. Pancreatic Cancer - Insights into Molecular Mechanisms and Novel Approaches to Early Detection and Treatment (In). Dr. Kelly McCall (Ed.), ISBN: 978-953-51-1375-1, InTech, DOI: 10.5772/57432. Available from: http://www.intechopen.com/books/pancreatic-cancer-insights-into-molecular-mechanisms-and-novel-approaches-to-early-detection-and-treatment/metformin-and-pancreatic-cancer-metabolism

11. **Boros L.G.,** Beger R.D., Meuillet E.J., Colca J.R., Szalma S., Thompson P.A., Dux L, Farkas Gy. Jr., Somlyai G. Targeted ^{13}C-labeled tracer fate associations for drug efficacy testing in cancer. *In:* Tumor Cell Metabolism – Pathways, Regulation & Biology, *Eds*. Shoshan, M. (Karolinska Institute, Stockholm, Sweden) & Mazurek, S.L. (Justus-Liebig-University, Giessen, Germany), Chapter 15 pages 349-372, 2014. ISBN 978-3-7091-1823-8 ISBN 978-3-7091-1824-5 (eBook) DOI 10.1007/978-3-7091-1824-5 Publisher Springer Vienna; Copyright Holder: Springer-Verlag Wien

A b s t r a c t s

1. **Boros, L.G.**, Pap, A, Berger, Z. Chronic pancreatitis-like lesions provoked by duct occlusion with Ethibloc in rats can be maintained by alcohol administration. Presented at the European Pancreatic Club, Manchester, England, September, 1985.

2. **Boros, L.G.**, Pap, A. Recovery of the pancreatic enzyme content in Ethibloc induced obstructive pancreatitis can be inhibited by alcohol administration. Presented at the European Pancreatic Club, Nijmegen, The Netherlands, September, 1986.

3. **Boros, L.G.**, Hajnal, F., Pap, A., Takats, T., Nagy, I. Pancreatic insufficiency and atrophy provoked by intraductal oleic acid can be progressed by alcohol and regenerated by cholecystokinin octapeptide (CCK 8). Presented at the European Pancreatic Club, Marseille, France, September, 1987.

4. **Boros, L.G.**, Berger, Z., Pap, A., Takats, T., Nagy, I. CCK-8 accelerates, the CCK antagonist CR-1409 inhibits pancreatic regeneration after resection in rat. Presented at the European Pancreatic Club, Budapest, Hungary, August, 1988.

5. **Boros, L.G.**, Pap, A., Takats, T., Nagy, I. Alcohol inhibits the regeneration after pancreatic resection in rats. Presented at the European Pancreatic Club, Budapest, Hungary, August, 1988.

6. **Boros, L.G.**, Oberyszyn, T.M., Sabourin, C.L., Bijur, G.N., Oberyszyn, A.E., Robertson, F.M. Cytokines regulating neutrophil migration during cutaneous inflammation. Presented at the Association of Leukocyte Biology, Charlestown, NC, USA, December, 1992.

7. **Boros, L.G.**, Muscarella P., Brandes, J.L., Johnson J.A., Schirmer, W.J., Ellison, E.C., Melvin, W.S. The effect of BZA-5B, a farnesyl protein transferase inhibitor, on the growth of human pancreatic cancer. Presented at the American Gastroenterological Society, Washington, DC, USA, May, 1996.

8. Muscarella P., **Boros, L.G.**, Brandes, J.L., Johnson J.A., Melvin, W.S., Schirmer, W.J., Ellison, E.C. Dehydroepiandrosterone-sulfate inhibits pancreatic cancer cell proliferation in vitro and in vivo. Presented at the American Gastroenterological Society, Washington, DC, USA, May, 1996.

9. **Boros, L.G.**, Muscarella P., Brandes, J.L., Johnson J.A., Melvin, W.S., Schirmer, W.J., Ellison, E.C. Orally administered dehydroepiandrosterone inhibits the growth of subcutaneously injected pancreatic cancer cells in nude mice. Presented at the American Gastroenterological Society, San Francisco, CA, USA, May, 1997.

10. **Boros, L.G.**, Puigjaner, J., Rais, B., Comin, B., Lee, P., Melvin, W.S., Schirmer, W.J., Cascante, M. Oxythiamine and dehydroepiandrosterone inhibit the non-oxidative synthesis of ribose and cancer cell proliferation. Presented at the American Gastroenterological Society, San Francisco, CA, USA, May, 1997.

11. Rais, B., Comin, B., **Boros, L.G.**, Lee, P., Melvin, W.S., Schirmer, W.J., Cascante, M. Inhibition of Ehrlich's ascites tumor cell proliferation by pentose cycle inhibitors is associated with an arrest in the G0-G1 cell cycle phases. Presented at the The First Annual Meeting on Experimental Therapeutics of Human Cancer, Frederick, Maryland,USA, June, 1998.

12. Guenther, D.A., Huang, E., Ikramuddin S., **Boros, L.G.**, Melvin, W.S. Natural killer cell activity is not different following laparoscopy compared to open surgery. Presented at the Society of American Gastrointestinal and Endoscopic Surgeons, San Antonio, Texas, USA, March, 1999.

13. Cascante, M., Comin, B., Boren, J., Moro, C., Martinez, S., Centelles, J.J., LeeW-N.P., and **Boros, L.G.** Plenary lecture: Inhibition of tumor ribose-phosphate synthesis: Anew strategy to control tumor proliferation. Presented at the ComBio99. Australian Society for Biochemistry and Molecular Biology, Sidney, Australia, September, 1999.

14. Cascante, M., Comin, B., Raïs, B., Centelles, J.J., Puigjaner, J., Lee, W-N.P., **Boros, L.G.** Application of metabolic control analysis to the design of a new strategy for cancer therapy. Presented at the MCA 99 NATO Advanced Research Workshop on Technological and Medical Implications of Metabolic Control Analysis, Visegrad, Hungary, July, 1999.

15. **Boros, L.G.**, Comin, B., Boren, J., Martinez, S., Moro, C., Centelles, J.J., Lee, W.N.P., and M. Cascante. Over-expression of transketolase: a mechanism by which thiamine supplementation promotes cancer growth. Presented at the American Association for Cancer Research, San Francisco, CA, USA, April, 2000.

16. **Boros, L.G.**, Torday, J.S., Lim, S., Bassilian, S., Cascante, M., and Lee, W.N.P. TGF-□□ increases nucleic acid ribose synthesis through the non-oxidative pentose cycle in lung carcinoma cells. Presented at the American Association for Cancer Research, San Francisco, CA, USA, April, 2000.

17. Lee, W-N.P., Bassilian, S., Lim, S., **Boros, L.G.** 2-Deoxyglucose inhibits both the oxidative and non-oxidative branches of the pentose cycle. Presented at the Federation of American Societies for Experimental Biology, San Diego, CA, USA, April, 2000.

18. Steinkamp, M.P., Fleming, J.C., **Boros, L.G.**, Neufeld, E.J. Thiamine depletion in thiamine-responsive megaloblastic anemia (TRMA) mutant fibroblasts leads to a reduction in non-oxidative ribose synthesis. Presented at the American Society for Biochemistry and Molecular Biology and The American Society for Pharmacology and Experimental Therapeutics (ASBMB/ASPE), 2000.

19. Comin, B., Boren, J., Moro, S., Martinez, S., Lee, W-N.P., **Boros, L.G.**, Centelles, J.J., Cascante, M. New antitumoral drugs based on ribose-phosphate synthesis tested by metabolic control analysis. Presented at the 18th International Congress of Biochemistry and Molecular Biology, Birmingham, UK, July, 2000.

20. Boren, J., Comin, B., Centelles, J.J., Moro, S., Martinez, S., Le, W-N.P., **Boros, L.G.**, Cascante, M. Modeling metabolic networks for the search of new targets in cancer therapy. Presented at the Biochemical Systems Theory (SYMBIOSYS), Puerto de la Cruz, Tenerife, Canary Islands, Spain, September, 2000.

21. **Boros, L.G.**, Lee, W-N.P., Hidvegi, M., Go, V.L.W. Metabolic effects of fermented wheat germ extract with anti-tumor properties in cultured MIA pancreatic adenocarcinoma cells. Presented at the Combined Meeting of the International Association of Pancreatology and the American Pancreatic Association, Chicago, Illinois, USA, November, 2000.

22. **Boros, L.G.**, Lee, W-N.P., Go, V.L.W. Metabolic targets of tumor growth inhibitory signals in MIA pancreatic adenocarcinoma cells: a metabolic hypothesis of cellular signaling pathways. Presented at the Combined Meeting of the International Association of Pancreatology and the American Pancreatic Association, Chicago, Illinois, November, 2000.

23. Lee, W-N.P., Mao, C.S, Bassilian, S., **Boros, L.G.** Plasma fatty acid production and the role of de novo lipogenesis in energy transport. Presented at the American Federation for Medical Research Western Regional Meeting Metabolism III Session, Carmel, CA, February, 2001.

24. **Boros, L.G.**, Lee, W-N.P., Williams, R.D. Isofenphos organophosphate pesticide induces metabolic changes of the invasive phenotype in K562 myeloid blast cells. Presented at the American Federation for Medical Research Western Regional Meeting Metabolism III Session, Carmel, CA, February, 2001.

25. **Boros, L.G.**, Boren, A.J., Marin, S., Cascante, M., Lim, S., Bassilian, S., Ahmed, S., Lee, W-N.P. STI571 decreases glucose derived nucleic acid synthesis but increases direct glucose oxidation in K562 myeloid blast cells. Presented at the American Association for Cancer Research, New Orleans, LA, USA, March, 2001.

26. Lee, W-N.P., Lim, S., Bassilian, S., Ahmed S., Mao, C.S., **Boros, L.G.** Glucose metabolic changes in HepG2 cells induced by the phosphorylase inhibitor CP-329,626). Presented at the Federation of American Societies for Experimental Biology, Orlando, Florida, USA, March 31-April 4, 2001.

27. Lee, W-N.P., Martinez, S., Lim, S., Bassilian, S., Ahmed, S., Boren, J., Mao, C., **Boros, L.G.**, Cascante, M. Diverse metabolic changes of glucoseamine induced insulin resistance in HepG2 cells. Presented at the International Conference of Pediatric Endocrinology Montreal 2001, Montreal, Canada, Sept, 2001.

28. Rehan, V., Feng, S., Rehan, Y.H., Lee, W-N.P., Torday, J.S., **Boros, L.G.** Evidence for metabolic phenotype changes during trans-differentiation of pulmonary lipofibroblasts to myofibroblasts in response to hyperoxia. Presented at the Pediatric Academic Societies Annual Meeting, Baltimore, MD, April-May, 2001.

29. Lee, W-N.P., Martinez, S., Lim, S., Bassilian, S., Ahmed, S., Boren, J., Mao, C., **Boros, L.G.**, Cascante, M. Diverse Metabolic Changes of Glucosamine Induced Insulin Resistance in HEPG2 Cells. Presented at the Lawson Wilkins Pediatric Endocrine Society and the European Society for Pediatric Endocrinology (LWPES/ESPE) 6th Joint Meeting, Montreal, Canada, July, 2001.

30. **Boros, L.G.**, Syed, A.S., Bassilian S., Lim, S., Lee, W-N.P. Lack of proliferative and metabolic response in MIA pancreatic adenocarcinoma cell cultures to STI571 (Gleevec). Presented at the American Pancreatic Association, Chicago, Illinois, November, 2001.

31. Bulotta, A., Perfetti, R., Hui, H., **Boros, L.G.** Differentiation of cultured ARIP carcinoma cells is mediated via glucose intermediary metabolic changes in response to Glucagon-like peptide 1 (GLP-1) treatment. Presented at the American Pancreatic Association, Chicago, Illinois, November, 2001.

32. **Boros, L.G.**, Go, V.L., Lee, W-N.P. Metabolic Profiling of Cell Growth and Death in Cancer. Presented at the Cambridge Healthtech Institute's Premier Conference on Metabolic Profiling: Pathways to Discovery (keynote address), Sheraton Chapel Hill Hotel, Chapel Hill, North Carolina, December 4, 2001.

33. **Boros, L.G.**, Bassilian S., Lim, S., Lee, W-N.P. STI571 (Gleevec) inhibits de novo palmitate but does not affect nucleic acid synthesis in MIA pancreatic adenocarcinoma cells. Presented at the American Federation for Medical Research Western Regional Meeting Metabolism III Session, Carmel, CA, February, 2001.

34. Tucker, C., **Boros, L.G.**, Patel, S.M., Santos, J., Reddy, S.G., Lee, W-N.P., Torday, J.S., Rehan, V.K.. Dihydroxycholicalciferol (Vitamin D_3) affects lipid metabolism differentially in pulmonary alveaolar type II cells and fibroblasts. Presented to the Pediatric Academic Societies' Annual Meeting, Baltimore, MD, May, 2002.

35. Cascante, M., Comin, B., Raïs, B., Centelles, J.J., Puigjaner, J., Lee, W-N.P., **Boros, L.G.** Metabolic control theory and stable isotope based metabolic profiling. Presented at the EMBIO Meeting, Barcelona, Spain, June, 2002.

36. Cascante, M., Comin, B., Atauri, P., Ramos, A., Vizan, P., **Boros, L.G.**, Centelles, J.J., Mazurek, S., Eigenbrodt, E., Frederiks, W.M., Lee, W-N.P., Boren, J. Modeling metabolic networks in drug discovery and disease. Presented at the European Science Foundation (ESF) Meeting, Granada, June, 2002.

37. **Boros, L.G.**, Go, V.L.W., Lee, W-N.P. Stable isotope-based metabolic profiling in pancreatic cancer: applications in biomarker discovery and gene function analysis. Presented at the American Pancreatic Association, Chicago, Illinois, November, 2002.

38. **Boros, L.G.**, Deng, Q., Pandol, S.J., Tsukamoto, H., Go, V.L.W., Lee, W-N.P. Ethanol induced tissue specific lipotoxicity in the liver and pancreas. Presented at the American Pancreatic Association, Chicago, Illinois, November, 2002.

39. **Boros, L.G.**, Harrigan, G.G. Stable isotope-based metabolic profiling: applications in biomarker discovery & gene function testing. Presented at the Cambridge Healthtech Institute's Second Conference on Metabolic Profiling, Sheraton Chapel Hill Hotel, Chapel Hill, North Carolina, December 4, 2002.

40. Tucker, C., **Boros, L.G.**, Santos, J., Bassilian, S., Torday, J.S., Lee, W-N. P., Rehan, V. Differential proliferative and metabolic effects of vitamin D3 on near-term fetal rat lung fibroblasts and type II cells. Presented at the American Federation for Medical Research Western Regional Meeting Neonatology Session, Carmel, CA, February, 2003.

41. Ramos-Montoya, A. **Boros, L.G.**, Bassilian, S., Lim, S., Lee, W-N.P., Cascante, M. Pentose and purine synthetic pathway inhibitors do not have synergistic effect on colon carcinoma cell growth. Presented at the American Federation for Medical Research Western Regional Meeting Metabolism III Session, Carmel, CA, February, 2003.

42. Bulotta, A., Perfetti, R., Hui, H., **Boros, L.G.** Glucagon-like peptide-1 regulates insulin release via glucose derived de novo fatty acid synthesis and chain elongation in pancreatic carcinoma cells. Presented at the American Diabetes Association Meeting Metabolism III Session, Chicago, IL, March, 2003.

43. Tucker, C., **Boros, L.G.**, Santos, J., Torday, J.S., Rehan, V. Differential proliferative and metabolic effects of vitamin-D3 on near-term fetal rat lung fibroblasts and type II cells. Presented at the Pediatric Academic Societies' Annual Meeting in Seattle, Cardiopulmonary Development Session, Washington, May 3-6, 2003.

44. Lee, W-N.P., **Boros, L.G.**, Mao, C.S. Tracer approaches to determining glyconeogenesis. Presented at the American Society for Parenteral and Enteral Nutrition Meeting, Nutrition Week, San Antonio, TX, January, 2003.

45. **Boros, L.G.** Metabolic profiling using stable isotope tracer technology GC/MS. Presented at the 20th Annual Conference on Metabolic Profiling: Biomarker Discovery, Drug Efficacy and Fundamental Biochemistry, Asilomar, CA, October 15-18, 2004.

46. **Boros, L.G.**, Lerner, M., Morgan, D., Taylor, S., Postier, R., Brackett, D. Different positional accumulation of [1,2-13C2]glucose into RNA ribose of DMBA-induced pancreatic tumors, pancreas and liver. Presented at the American Pancreatic Association, Chicago, Illinois, November 4-5, 2004.

47. Guo, P., Bassilian, S., Lim, S., Lee, W.-N.P., **Boros, L.G.** Doxorubicin induces Mia PaCa-2 cell apoptosis by increasing GSK-3ß expression, ß-catenin degradation and by limiting DNA/RNA ribose synthesis in the pentose cycle. Presented at the American Pancreatic Association, Chicago, Illinois, November 4-5, 2004.

48. Miljus, J., Melo, J.V., **Boros, L.G.**, Anderson, N., Talpaz, M., Leibfritz, D., Eckhardt, S.G., Serkova, N. Metabolic profile of imatinib resistance in chronic myeloid leukemia cells. Presented at the 46th American Society of Hematology Meeting in San Diego, CA, December 4-7, 2004.

49. **Boros, L.G.** CASE STUDY: Single metabolic mechanism of Gleevec resistance regardless of the genetic makeup of leukemia cells. Presented at the 5th Annual Metabolic Profiling: Pathways in Discovery Meeting, Lake Buena Vista, FL, December 13-14, 2004.

50. **Boros, L.G.**, Lee, W-N.P. Predicting clinical resistance to Gleevec treatment by in vitro applied stable isotope-based dynamic metabolic profiling (SIDMAP). Presented at the 2005 FDA Science Forum, Washington, DC, April 27-28, 2005.

51. Sahai, I., M. Montefusco, C.M., Fleming, J.C., **Boros, L.G.**, Tartaglini, E., Chick, G., Neufeld, E.J. Role of Defective High-Affinity Thiamine Transporter slc19a2 in Marrow from a Mouse Model of Thiamine-Responsive Anemia Syndrome: Evidence for Defective Deoxyribose and Heme Synthesis. Presented at the 47th American Society of Hematology, San Diego, CA, December 3-6, 2005. link

52. Sugano, S., **Boros, L.G.**, Wang, Y., Santos, J., Lee, W-P., Torday, J.S., Rehan, V.K. Maternal nicotine exposure: lung alveolar type II cell proliferation, differentiation and metabolic profile. Presented at the Western Society for Pediatric Research (WSPR), Carmel, CA, February 3, 2006. (WINNER OF THE WSPR LOWELL GLASGOW STUDENT RESEARCH AWARD).

53. Erkkila, K., Liu, P.Y., Lee, P.W-N., **Boros, L.G.**, Ferrini, M., Sinha Hikim, A.P., Wang, C., Lue, Y.H., Swerdloff, R.S.. XXY mice exhibit altered palmitate and stearate metabolism in the brain. Presented at the Annual Meeting of the Endocrine Society (ENDO), Boston, MA, June 24-27, 2006.

54. **Boros, L.G.**, Kochegarov, A., Szigeti, I., Lee, S.T., Jancso, G., Jákli, G., Somlyai, G. Deuterium depleted water alters glucose-derived fatty acid and cholesterol synthesis of tumor cells. Presented at the Annual International Meeting of the Metabolomics Society, Boston, MA, June 25-29, 2006.

55. Beger, R.D., Hansen, D.K., Schnackenberg, L.K., Fatollahi, J.J., **Boros, L.G.** Decreased glycogen and RNA ribose synthesis and turnover from [U-$^{13}C_6$]-D-glucose is an early metabolic marker of valproic acid toxicity on the liver in mice. 3rd Annual Meeting of the Metabolomics Society, Manchester, UK, June 11-14, 2007.

56. **Boros, L.G.**, Szigeti, I. Szabo, G. Sarnyai, Z. Delayed uptake of [U-$^{13}C_6$]-D-glucose and abnormal ^{13}C isotopomer production after acute and chronic antipsychotic treatment in mice. Presented at the Annual International Meeting of the Metabolomics Society, Manchester, UK, June 11-14, 2007.

57. Vizan, P., **Boros, L.G.**, Peiris, M., Figueras, A., Capella, G., Mangues, R., Lee, W-N.P.. Selivanov., Cascante, M. K-ras codon-specific mutations produce distinctive metabolic phenotypes in mice fibroblasts. Presented at the Annual International Meeting of the Metabolomics Society, Manchester, UK, June 11-14, 2007.

58. Harris, D.M., Li, L., Fatollahi, J.J., Lagunero, F.T., Cross, B.M., Go, V.L.W., **Boros, L.G.** Luteolin inhibits proliferation and de novo fatty acid synthesis in pancreatic cancer cells. Presented at the American Association for Cancer Research, San Diego, CA, USA, April, 2008.

59. Sonko, B.J., Guo, L., Schmitt, T., Leakey, J., **Boros, L.G.**, Beger, R. *In Vitro* Usnic Acid Concentration/Time Dependency Toxicity Evaluation. Models and Mechanisms of Hepatotoxicity, Society of Toxicology, Salt Lake City, Utah, USA, March 7-11, 2009.

60. Sonko, B.J., Schmitt, T.M., **Boros, L.G.**, Sakar, S., Syed, A., Beger, R. Effect of Chronic MPTP Administration on Glycolysis and TCA cycle Pathways in Mouse Model of Parkinson's Disease. Twenty-sixth International Neurotoxicological Conference, Portland, Oregon, USA, June 5-10, 2010.

61. Varma, V., Nolen, G.T., **Boros L.G.**, Kaput, J. Fructose Metabolism and Its Influence on Glucose Metabolism in Human Adipocytes. 70th - Integrated Physiology Session, American Diabetes Association, Orlando, Florida, June 25-29, 2010.

62. Bolin, D., Ahmad, M., Banner, B., **Boros, L.G.**, Cai, J., Gillespie, P., Goodnow, P., Gubler, M.L., Hamilton, M.M., Hayden, S., Huang, K.S., Liu, X., Lou J.P., Mark D., McDermott L., Perrotta A., Qian Y., Ren Y., Rondinone C., Rowan K., Spence C., Tilley J., Sergi J., Thakkar K., Yi L., Yun W., Xiang Q., Zhang X., Conde-Knape C., Olivier A.R. A Novel Approach for the Treatment of Type 2 Diabetes (T2D): Characterization of a Potent, Orally Active, Small Molecule Glycogen Synthase Activator. 70th Scientific Sessions – Insulin Action and Metabolism, American Diabetes Association, Orlando, Florida, June 25-29, 2010.

63. Varma, V., Nolen, G.T., **Boros, L.G.**, Kaput, J. Fructose Alters Glucose Metabolism of Human Adipocytes. 1st Annual Foods Program Science and Research Conference, Food and Drug Administration, White Oak Campus, Silver Spring, Maryland, June 21-22, 2011.

64. Varma, V., Nolen, G.T., **Boros, L.G.**, Kaput, J. Fructose is a Potent Lipogenic Macronutrient in Human Adipocytes. Joint meeting on Diabetes and Obesity – 'Pathogenesis of Diabetes: Emerging Insights into Molecular Mechanisms' (J8) AND 'Genetic & Molecular Basis of Obesity and Body Weight Regulation' (J7) at Santa Fe, NM, January 29-February 3, 2012.

65. Cantoria, M.J., **Boros, L.G.**, Meuillet, M.J.. Metformin Inhibits the TCA Cycle and Fatty Acid Synthesis in MIAPaCa-2 Pancreatic Cancer Cells. International Association of Pancreatology and the American Pancreatic Association Joint Meeting, Miami, FL, October 31, November 02, 2012 (PII-60)

66. Yang, Y., Lane, A., Ricketts, C., Wei, M.H., Pike, L., Wu, M., Rouault, T.A., **Boros, L.G.**, Fan, T., Linehan, M. (C063) Metabolic reprogramming for producing energy and reducing power in fumarate hydratase null cells from hereditary leiomyomatosis renal cell carcinoma (HLRCC). Presented at the 9th American Associations for Cancer Research and Japanese Cancer Association Joint Conference: Breakthroughs in Basic and Translational Cancer Research, Preclinical Models, Maui, Hawaii, February 21-25, 2013.

67. **Boros, L.G.**, Serkova, N.J., Laderoute, K.R., Linehan, W.M., Meuillet, M.J.. Stable ^{13}C Isotope Enriched Metabolome (Isotopolome) Wide Associations (IWAS) Improve System Wide Association Studies (SWAS) for Phenotype and Drug Research. World Biotechnology Congress, Medical Biotechnology, Boston, MA, June 3-6, 2013.

68. **Boros, L.G.**, Lee, W-N.P. Cross-labeled ^{13}C-stearate fate detection in the [1,2-$^{13}C_2$]-d-glucose derived isotopolome improves system wide associations when compared with external; [U-$^{13}C_{18}$]-stearate incubation in rosiglitazone treated $HEPG_2$ Cells. 9th Annual Conference of the Metabolomics Society, SECC, Glasgow, Scotland, July 1-4, 2013.

69. Cantoria, M.J., **Boros, L.G.**, Patel, H., Han, H., Ignatenko, N. Meuillet, M.J. Metformin-induced metabolic changes are k-ras-dependent in animal models of pancreatic cancer. Presented at the American Association for Cancer Research, San Diego, CA, April 8, 2014.

70. **Boros, L.G.**, Meuillet, M.J., Somlyai, I., Jancsó, G., Jákli, G., Krempels, K., Puskás, L.G., Nagy, I.L., Molnár, M., Laderoute, K.L., Thompson, P.A., Somlyai, G. Fumarate hydratase and deuterium depletion control oncogenesis via NADPH-dependent reductive synthesis: mitochondrial matrix water, DNA deuteration and epigenetic events. Presented at the American Association for Cancer Research, San Diego, CA, April 8, 2014.

71. Weston, R., Rodier, J., Coffey, S., Glickenhaus, A., **Boros, L.G.**, MacDonald, M.E., Carroll, J.B. Investigating Hepatic Dysfunction In The Httq111/+ Mouse With A Perturbagen-based Primary Hepatocyte System. *J Neurol Neurosurg Psychiatry* 85: A19-A20, 2014. doi:10.1136/jnnp-2014-309032.58

72. **Boros, L.G.** Targeted ^{13}C Tracer Fate Association Studies for Clinical Isobolomics. Presented at SciX 2014, the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Reno, Lake Tahoe, NV, USA, September 30, 2014.

73. Vijayalakshmi, V., **Boros, L.G.**, Nolen, G.T., Beger, R.D., Kaput, J. Fructose diverts glucose to glycerol and serine oxidation in the one-carbon cycle energy producing pathway of human adipocytes. Diabetes and Metabolic Dysfunction, Mitochondria, Metabolism and Heart Failure, Keystone Symposium at the Santa Fe Community Convention Center, Santa Fe, NM, USA, January 27 – February 1, 2015.

74. **Boros, L.G.** Biochemical interpretations of $^{2}H/^{1}H$ ratio contrast magnetic resonance spectroscopy: tissue phenotyping by mitochondrial matrix (metabolic $^{1}H^{2}O$) and cytoplasmic ($^{2}H^{1}HO$) water ratios in cells. 3rd International Congress on Deuterium Depletion, Budapest, Hungary, EU, May 07, 2015 – 13th Presentation (23 minutes) LASZLO G. BOROS - http://www.deuteriumdepletion.com/2015program.php

75. **Boros, L.G.**, Katz, H.E., Roth, J.P., Somlyai, G. Gluconeogenesis and the pentose cycle impact deuterium depleted water efficacy in anticancer therapeutics. 3rd International Congress on Deuterium Depletion, Budapest, Hungary, EU, May 08, 2015 – 4th Presentation (52 minutes) LASZLO G. BOROS - http://www.deuteriumdepletion.com/2015program.php

76. Blanco, F.F., Zarei, M., Brody, J.R., **Boros, L.G.**, Winter, J.M. The RNA binding protein, HuR, regulates pancreatic cancer cell metabolism. *In:* Proceedings of the 106th Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia, PA. Philadelphia (PA): AACR; Cancer Res 2015;75(15 Suppl):Abstract nr 1191. doi:10.1158/1538-7445.AM2015-1191 - http://goo.gl/L0UszO

77. **Boros, L.G.**, Somlyai, G. Deuterium and Hydrogen Ratios Determine Proton Spin-Lattice T1-Weighted Magnetic Resonance Images: Clinical Applications in Cancer. European Society for Isotope Research, ESIR Isotope Workshop XIII September 20 – 24, pp: 92-93, 2015, Zadar, Croatia. *Eds*: Krajcar Bronić, I., Horvatinčić, N., Obelić, B., *Publisher*: Ruđer Bošković Institute, Zagreb, Croatia, 2015; ISBN 978-953-7941-08-6 - http://esir2015.irb.hr/Programme/Deuterium-and-hydrogen-ratios-determine-proton-spin-lattice-T1-weighted-Magnetic-Resonance-Images-Clinical-applications-in-cancer

78. **Boros, L.G.**, Patel, H., Somlyai, G. The oncoisotopic effect of deuterium and carbon-dependent oncoisotope depletion in processed carbohydrates by ketogenic mitochondrial substrate oxidation. 1st Annual Conference on Nutritional Ketosis and Metabolic Therapeutics, Tampa Bay, Florida, January 28-30, 2016

79. Zarei, M., Blanco, FF., **Boros, L.G.**, Yeo, C.J., Brody, J.R., Winter, J.M. Post-transcriptional regulation of IDH1 by the RNA-binding protein HuR is important for pancreatic cancer cell survival under nutrient deprivation. [abstract]. In: Proceedings of the AACR Special Conference: Metabolism and Cancer; Jun 7-10, 2015; Bellevue, WA. Philadelphia (PA): AACR; Mol Cancer Res 2016;14(1_Suppl):Abstract nr B41. - http://goo.gl/ZUo51p

80. **Boros, L.G.**, Nutritional ketosis improves nanomechanics for ATP synthase and TCA cycle turnover via aspartate mediated proton transfer in mitochondria. 2nd Annual Conference on Nutritional Ketosis and Metabolic Therapeutics, Tampa Bay, Florida, February 1-4, 2017.

81. Somlyai, G., Molnár, M., Somlyai, I., Fórizs, I., Czuppon, G., **Boros, L.G.** Hydrogen/deuterium ratio is a key regulator of energy production and cell proliferation – submolecular dimensions of drug development. 3rd International Conference on Clinical Sciences Drug Discovery, Reston, Virginia, USA, November 9-11, 2017.

82. Yee, J.K., Lu, Q., Lim, S., Han, G., Desai, M., **Boros, L.G.**, Ma, L. Flavonoids in the treatment of non-alcoholic fatty liver disease: a tracer-based cell culture study. Pediatrics Endocrine Society (PES) Annual Meeting, Fort Worth, Texas, USA, April 24-27, 2020.

Invited Presentations, Keynotes & Teaching

1. Distribution of stable ^{13}C labels in structural macromolecules of pancreatic adenocarcinoma cells from [1,2-$^{13}C_2$]glucose: The application of mass spectrometry to cancer cell metabolism. Central Research Institute of Experimental Medicine of the Hungarian Academy of Sciences and the Hungarian Gastroenterological Society Research Section Seminars, Invited Speaker, Budapest, Hungary, June, 1997

2. Ribose synthesis in tumor cells: A new target for anti-tumor therapy. Faculty and Student Research Conference, Department of Human Nutrition, The Ohio State University, Columbus, OH, USA, October, 1997

3. Thiamine and the tumor proliferation process; ribose synthesis through transketolase. Abbott-Ross Laboratories Research Seminar, Invited Speaker, Columbus, OH, USA, May 1997

4. Inhibition of tumor proliferation through the synthesis of RNA ribose. Pathology 850(b): Seminars in Pathology - Continuing Medical Education Program, The Ohio State University, Columbus, OH, USA, April, 1997

5. Inhibition of tumor cell proliferation through the synthesis of nucleic acid ribose: a new approach to tumor therapy. University of Barcelona department of Biochemistry Research Seminar, Barcelona, Catalonia, Spain, November, 1998

6. Gas Chromatography/Mass Spectrometry Chemical Analysis, Summer Student Advisor. Harbor-UCLA Research and Education Institute, Torrance, CA, USA, June-July, 1999.

7. Carbon ^{13}C mass isotope studies in cancer cell glucose metabolism: a practical application in tumor cell metabolic response to transforming growth factor-beta (TGF-β_2) treatment. Schebo-Tech presentation, Giessen, Germany, August, 1999

8. The role of thiamine (vitamin B_1) in the proliferation of tumor cells: clinical consequences. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, January 6, 1999

9. Transforming growth factor-beta (TGF-beta 2) induces non-oxidative glucose metabolic changes in tumor cells: an explanation for hypoxia resistance in tumors. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, September 22, 1999

10. Thiamine-responsive megaloblastic anemia and the role of vitamin B_1 in nucleic acid synthesis. Nutrition Research Seminars UCLA School of Medicine, Department of Nutrition, Los Angeles, CA, USA, January 31, 2000

11. Impaired non-oxidative nucleic acid ribose synthesis in thiamine responsive megaloblastic anemia. Endocrine Clinical Conference, UCLA School of Medicine, Department of Endocrinology. Torrance, CA, USA, March 15, 2000

12. Characterization of tumor cell metabolism with stable glucose isotopes and GC/MS in response to growth modifying agents. Sala de Graus, Facultat de Biologia. University of Barcelona, Barcelona, Spain, May 19, 2000

13. Metabolic phenotypic changes in pancreatic adenocarcinoma cells after fermented wheat germ extract (Avemar) treatment. UCLA School of Medicine, Center for Human Nutrition research seminars, Los Angeles, CA, USA, July 21, 2000

14. Methods of determining the metabolic phenotype of mammalian cells. UCLA School of Medicine, Harbor-UCLA Medical Center Basic Science Seminar, Torrance, CA, USA, December 12, 2000

15. Metabolic adaptation to promoters and inhibitors of human cell transformation. University of California Irvine, Division of Endocrinology, Diabetes and Metabolism, Faculty Science Seminar, Irvine, CA, USA, January 24, 2001

16. Metabolic markers of the lipofibroblast-myofibroblast trans-differentiation process in premature rat lung. UCLA School of Medicine, Center for Human Nutrition seminar presentation, Los Angeles, CA, USA, January 26, 2001

17. Metabolic characteristics of lipofibroblast-myofibroblast trans-differentiation in premature rat lung. UCLA School of Medicine, Department of Pediatrics research seminar, Los Angeles, CA, USA, February 15, 2001

18. Metabolic pathology of lipofibroblast-myofibroblast trans-differentiation. Harbor-UCLA Medical Center, Department of Pathology Grand Rounds, Torrance, CA, USA, February 16, 2001

19. Treatment of chronic myeloid leukemia with Bcr-Abl tyrosine kinase inhibitor Gleevec: the metabolic consequences. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, July 11, 2001

20. Basics of mass spectrometry and proteomics analyses. Introduction to Biomedical Research and Experimental Techniques. Fellow/Faculty Continued Education Program, University of California Research and Education Institute, Torrance, CA, USA, August 29, 2001

21. Metabolic Adaptation of Mammalian Cells to Growth Modifying Signals. Weitzman memorial research award acceptance lecture 2001, Faculty Society of Harbor-UCLA, Torrance, CA, USA, September 13, 2001

22. Stable isotope labeling of proliferation-related macromolecules using [1,2-$^{13}C_2$]glucose: the effect of growth modifying signals. Cedar Sinai Medical Center Research Conference, Los Angeles, CA, September 14, 2001

23. STI571 (Gleevec) and leukemia cell proliferation. Leukemia Research Group and Task Force Meeting, UCLA School of Medicine, Department of Internal Medicine Division of Hematology, Los Angeles, CA, October 1, 2001

24. Metabolic adaptive changes in chronic myeloid leukemia cells in response to STI571 (Gleevec) treatment. Endocrine/Metabolism Research Seminar Series, Cedar Sinai Medical Center, Los Angeles, CA, USA, October 5, 2001

25. Pancreatic and leukemia tumor growth-control through metabolic pathway-linked signal transduction pathways: the lesson learned with STI571. UCLA School of Medicine, Center for Human Nutrition Research Seminar, Los Angeles, CA, USA, October 19, 2001

26. ThermoQest Finnegan LCQ Classic, Duo, Deca and triple quadrupole (TSQ) basic instrument operations. Atmospheric pressure ionization (API) and ion trap theory. Harbor-UCLA Research and Education Institute, laboratory course, Torrance, CA, USA, December 11-12, 2002

27. Opposite metabolic adaptive changes in tumor genesis and tumor growth control in leukemia tumor cells. Sala de Graus, Facultat de Biologia. University of Barcelona, Barcelona, Spain, USA, December 18, 2001

28. Metabolic effects of ethanol injury in the liver and pancreas: tissue specific differences in fatty acid synthesis. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, January 9, 2002

29. Tissue specific lipotoxicity in the liver and pancreas after ethanol administration in rats. UCLA School of Medicine, Center for Human Nutrition Research Seminar, Los Angeles, CA, USA, January 25, 2002

30. Tumor cell metabolism and novel treatment modalities: Bcr-Abl tyrosine kinase inhibitor Gleevec. Endocrine and Metabolism Clinical Research Conference, City of Hope National Medical Center, Duarte, CA, USA, February 6, 2002

31. Molecules with memory: the stable isotope labeled metabolome in biomedical research. GC/MS research presentation, Visiting Professor Grand Rounds Part II, Torrance, CA, USA, March 5, 2002

32. Tracing pathways in dynamic metabolic profiling and their utilization in the drug discovery process. GC/MS research presentation, Visiting Professor Grand Rounds Part IV, Torrance, CA, USA, March 5, 2002

33. Metabolic profiles of tumor cells in response to novel anti-proliferative treatment modalities. Waters Metabolomics Technology Forum, Waters Corporation, Milford, MA, USA, March 26 & 27, 2002

34. Metabolic profiling of metabolic diseases with unknown mechanisms: how to make silent genes to talk. Harvard School of Medicine, Department of Hematology Research Seminar, Boston, MA, USA, March 27, 2002

35. Glucagon like peptide-1 (GLP-1) induced metabolic adaptation of pancreatic epithelial cells to differentiation and insulin release. Endocrine/Metabolism Research Seminar Series, Cedar Sinai Medical Center, Los Angeles, CA, USA, May 17, 2002

36. Glucagon like peptide-1 (GLP-1) induces differentiation and insulin release of pancreatic epithelial cells: Potential use for the treatment of type 2 diabetes mellitus. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, June 12, 2002

37. Ethanol-induced tissue specific lipotoxicity in the liver and pancreas: a new application of the stable isotope-based metabolic profiling technology. Research Seminar, University of Southern California (USC), Los Angeles, CA, USA, July 8, 2002

38. Stable isotope-based dynamic metabolic profiling for industrial drug target screening, drug efficacy testing and new drug development. Research Seminar, Pharmacia, Saint Louis, MO, USA, August 12, 2002

39. Utilization of ^{13}C labeled stable glucose isotopomers in the industrial drug testing process. Research Seminar, Sigma-Aldrich-Isotech, Miamisburg, OH, USA, August 13, 2002

40. Use of asparagine as a substitute for glutamine in cell cultures: effects on glucose metabolism. University of California School of Medicine Harbor-UCLA Research and Education Institute Summer Fellow Education Program Presentation, Torrance, CA, USA, August 14, 2002

41. Introduction to mass spectrometry for biomedical research and experimental techniques. Fellow/Faculty Continued Education Program, University of California School of Medicine Harbor-UCLA Research and Education Institute, Torrance, CA, USA, September 5, 2002

42. Metabolic profiling with stable isotopes and GC/MS. The Harbor-UCLA Symposium and Workshop On Metabolic Profiling and Metabolic Control Analysis, University of California School of Medicine Harbor-UCLA Research and Education Institute, Torrance, CA, USA, September 21, 2002

43. Differential effects of vitamin D_3 on premature lung cells. The Harbor-UCLA Symposium and Workshop On Metabolic Profiling and Metabolic Control Analysis, University of California School of Medicine Harbor-UCLA Research and Education Institute, Torrance, CA, USA, September 22, 2002

44. Application of metabolic profiling in cancer drug discovery: Gleevec. The Harbor-UCLA Symposium and Workshop On Metabolic Profiling and Metabolic Control Analysis, University of California School of Medicine Harbor-UCLA Research and Education Institute, Torrance, CA, September 23, 2002

45. Diagnostic applications of stable isotope tracers and their prognostic value in drug sensitivity testing of human tumor cells. Oncotech, Tustin, CA, USA, December 10, 2002

46. Adrenal cortical carcinoma: mass spectral analysis of plasma steroid profile (case presentation). Harbor-UCLA Medical Center, Department of Endocrinology Grand Rounds, Torrance, CA, USA, January 03, 2003

47. Stable isotopes in metabolic profiling of pancreatic tumor cell physiology: tracer designs, applications and data analysis/presentation methods. Pancreatic SPORE grant meeting research seminar, UCLA School of Medicine, Department of Surgery, Los Angeles, CA, January 9, 2003

48. Drug target discovery and drug testing through metabolic profiling. 5th Annual Biomedical Investment & Strategic Partnering Opportunities Conference by the Southern California Biomedical Council (SCBC) Poster Presentation Session, Los Angeles, CA, USA, March 11, 2003

49. Drug target discovery and drug testing through metabolic profiling. 5th Annual Biomedical Investment & Strategic Partnering Opportunities Conference by the Southern California Biomedical Council (SCBC) Poster Presentation Session, Los Angeles, CA, USA, March 11, 2003

50. Improving Drug Target Discovery And Drug Effectiveness For The Industry Through Metabolic Profiling. 5th Annual Biomedical Investment & Strategic Partnering Opportunities Conference by the Southern California Biomedical Council (SCBC), Los Angeles, CA, USA, March 13, 2003

51. Vitamin-D_3 for the treatment of lung fibrosis. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, April 23, 2003

52. Early diagnosis of pancreatic cancer using serum metabolome GC/MS analysis and [1,2-$^{13}C_2$]glucose as the tracer. Cambridge Isotope Laboratories, Andover, MA, July 2, 2003

53. Stable Isotope-Based Metabolic Profiling (SIDMAP) of human cancer. Utah Venture Associate presentation, Harbor-UCLA Medical Center, Torrance, CA, August 15, 2003

54. Glucagon-like peptide-1 stimulates glucose derived *de novo* fatty acid synthesis and insulin production during beta cell differentiation. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, September 17, 2003

55. Metabolic pathways regulating cell cycle and apoptosis. UCLA School of Medicine, Harbor-UCLA Medical Center Basic Science Seminar, Torrance, CA, USA, October 7, 2003

56. Biomarkers of tumor cell proliferation and apoptosis revealed by metabolomics. International Society for Analytical and Molecular Morphology, Santa Fe, NM, October 14, 2003

57. Glucagon-like peptide-1 regulates *de novo* fatty acid synthesis and insulin release of beta cells. Endocrine & Metabolism Clinical Research Conference, City of Hope National Medical Center, Duarte, CA, USA, October 29, 2003

58. Rottlerin in the treatment of pancreatic cancer. Department of Veterans Affairs - Greater Los Angeles Hospital, Los Angeles, CA, January 14, 2004

59. Unique metabolic characteristics of IBC cells aiding diagnosis and treatment. Inflammatory Breast Cancer Research Foundation - Activist Meeting, Washington DC, MD, April 30, 2004.

60. Metabolic Profiles Associated with Aggressive Inflammatory Breast Cancer Cell Growth: exploring new avenues of diagnosis and treatment. Inflammatory Breast Cancer Research Foundation - Board Meeting, Washington DC, MD, April 30, 2004

61. Organ Specific Metabolic Abnormalities in Thiamine Responsive Megaloblastic Anemia and Diabetes in Children. Harbor-UCLA Medical Center, Department of Pediatrics Grand Rounds, Torrance, CA, USA, July 29, 2004

62. Unlocking Thiamine Responsive Megaloblastic Anemia: an unknown disease entity of the past. General Clinical Research Center Excellence in Clinical Research Award for 2003; award acceptance lecture, Torrance, CA, USA, September 21, 2004

63. Time of Flight Mass Spectrometry: from science to clinic. UCLA School of Medicine, Harbor-UCLA Medical Center Basic Science Seminar, Torrance, CA, USA, October 5, 2004

64. Clinical Trials in a Test Tube: Understanding the Powers of Stable Isotope-based Dynamic Metabolic Profiling (SIDMAP) in Drug Discovery. Eight Annual Functional Genomics Meeting, Cambridge Healthtech Institute, Boston, MA, November 9, 2004

65. Understanding Glivec-induced metabolic network changes as markers of response in cancer. Oncology Research Management Board, Novartis Pharmaceuticals, Basel, Switzerland, March 22, 2005

66. Targeted drugs and the tracer labeled metabolome of tumor cells: how to predict resistance and develop intervention strategies. University of Utah, Department of Biochemistry Research Seminar, Salt Lake City, UT, April 18, 2005

67. Understanding drug resistance and failure using stable isotope-based dynamic metabolic profiling (SIDMAP). 62nd Annual Meeting of the Korean Society for Biochemistry & Molecular Biology, Cellular Metabolism and Metabolomics Seminar Lecture, Seoul, Korea, May 19, 2005

68. Predicting clinical resistance to targeted therapies using stable isotope-based dynamic metabolic profiling (SIDMAP). Korean Institute of Science and Technology Research Seminar, Seoul, Korea, May 19, 2005

69. Applications of stable isotope-based dynamic metabolic profiling (SIDMAP) in drug resistance. Pohang University of Sciences and Technology Department of Chemistry Research Seminar, Pohang, Korea, May 20, 2005

70. Classic laws of physics and mass spectrometry: time of flight, quadrupole, ion trap instruments and their principles of operation. AP Physics student class, Carson High School, Carson, California, June 10, 2005

71. Stable Isotope Based Metabolic Profiling (SIDMAP) and its Applications. First Scientific Meeting of the Metabolomics Society, Tsuruoka City, Japan, June 23, 2005

72. Tracer substrate-based metabolomics: data handling, biomarkers and patient stratification. Metabolomics Standards Workshop, National Institute of Diabetes & Digestive & Kidney Diseases, National Institutes of Health, Bethesda, Maryland, August 1-2, 2005

73. Why targeted drug therapies are doomed to fail: uncovering the mechanism of action using stable isotope-based dynamic metabolic profiling. Connective Tissue Research Institute, University City Science Center, Department of Medicine, University of Pennsylvania, School of Medicine, Philadelphia, PA, October 18, 2005

74. Evolving metabolic tracer technologies and targeted drug resistance in cancer. Third International Conference on Tumor Cell Metabolism, Plenary Lecture, Louisville, KY, October 20, 2005

75. Predicting Clinical Resistance to Gleevec Treatment by *in vitro* Applied Stable Isotope-based Dynamic Metabolic Profiling. Advances in Metabolic Profiling, Pharmaceutical and Disease State Applications, London, UK, November 1, 2005

76. Metabolic effects of anti-psychotic treatments and the development of type 2 diabetes. Department of Pharmacology, University of Cambridge, United Kingdom, November 3, 2005

77. Ethanol-induced organ-specific lipotoxicity in the plasma, liver and pancreas: an *in vivo* tracer substrate-based metabolomics study. Center for Regulatory and Environmental Analytical Metabolomics (CREAM) at the University of Louisville, 1st CREAM Symposium, Louisville, KY, November 5 & 6, 2005

78. Identifying Patients Who are at Risk for Developing Resistance to Targeted Therapies. IBC Life Sciences Metabolic Profiling Using Metabolomics and Metabonomics Technology to Accelerate Drug Discovery and Development, Research Triangle Park, NC, November 14-15, 2005

79. Developing Metabolic Biomarkers by Measuring Isotopomer Ratios of Specific Metabolites: Metabolic Profiling and Analytical Methods, Orlando, Florida, December 7-8, 2005

80. Tumor cell metabolism. Basic Science Seminar, UCLA School of Medicine Department of Surgery, General Surgery Basic Science Seminar, Los Angeles, CA, December 21, 2005

81. Flexibility of the metabolic network and targeted drug failures. UCLA School of Medicine, Los Angeles Biomedical Research Institute at the Harbor-UCLA Medical Center Basic Science Seminar, Torrance, CA, USA, April 18, 2006

82. Fermented Wheat Germ (Avemar) Effect and Mechanism of Action as Determined by Stable Isotope-based Dynamic Metabolic Phenotyping. International Society for the Study of Xenobiotics (ISSX), Cheju Island, Korea, May 27, 2006

83. Tracer substrate-based metabolomics to unlock metabolic phenotypes. Buck Institute for Age Research, Novato, CA, July 21, 2006.

84. Metabolic targeted therapies during and after failed small molecule kinase inhibitors in cancer. Conference on Small Molecule Science, San Diego, CA, July 25, 2006

85. Tracer Substrate-based Metabolomics and the 2005 Nobel Prize award in Physiology & Medicine. Innovation in Life Science, Healthcare Research & Product Development, Bryn Mawr College, Philadelphia, USA, October 16-19. 2006

86. Clinical Genomics in Gastroenterology. Asian Pacific Digestive Disease Week, Lahug Cebu City, Philippines, November 20, 2006

87. Mass Isotopomer Markers of Drug Efficacy and Toxicity in Plasma and Urine. Global Technology Community's (GTCbio) 2nd Modern Drug Discovery and Development Summit, Philadelphia, PA, December 4-6, 2006

88. Clinical metabolic biomarkers of drug safety and efficacy using ^{13}C-labeled substrates. Division of Endocrinology & Metabolism Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, September 6, 2006. *AMA PRA Category 1* Credits™. Institute for medical quality and the California Medical Association's continued medical association (CME) accreditation standards (IMQ/CMA)

89. [1,2-$^{13}C_2$]-D-glucose tolerance test in obesity. Keynote Lecture & Honorary Membership Recipient Presentation at the 49th International Meeting of the Hungarian Gastroenterological Association, Pancreatology Plenary Section, Tihany, Hungary, June 3, 2007

90. Stable ^{13}C isotope tracer substrate studies in drug target development, efficacy and safety testing. Research Seminar, Department of Pathophysiology and the Hungarian Academy of Sciences Szeged Regional Arm, Szeged, Hungary, June 9, 2007

91. Abnormal ^{13}C isotopomer production after acute and chronic antipsychotic treatment in mice. The Eight International Conference on Systems on Systems Biology; Systems Biology in Medicine, Long Beach, California, USA, October 5, 2007

92. Determination of New Biomarkers for Liver Toxicity in the form of Stable Isotope Labeled Metabolites. InnovationWell InterAction Meeting Session, Systems-based Biology & Toxicology, Bryn Mawr College, Philadelphia, PA, USA October 17, 2007

93. Use of metabolic pathway flux information in cancer drug design. Oncogenes meet metabolism – from deregulated genes to a broader understanding of tumor physiology, Berlin, Germany, November 14-16, 2007

94. Functional analysis of pancreatic cancer genes, signaling pathways and drugs using metabolomics. Fourth Hirshberg Symposium for Pancreatic Cancer Research, Los Angeles, California, USA, February 4, 2008

95. Metabolic pathway flux information and systems biology approaches in CNS disorders. 10th International Neuroscience Winter Conference, Sölden, Austria, April 5-10, 2008

96. Discovering markers of metabolic side effects from responses to drugs by altered synthesis and turnover of fatty acids and cholesterol. IBC's 13th Annual World Congress on Drug Discovery & Development of Innovative Therapeutics (DDT), World Trade Center, Boston, MA, August 4-7, 2008

97. Individual variations of metabolism, diabetes and obesity markers, ^{13}C substrate based dynamic metabolic profiling (SiDMAP) and SiD-ELISA. United States Food and Drug Administration (FDA) National Center for Toxicological Research Science and Collaboration Seminar, Jefferson, Arkansas, August 27, 2008

98. Non-invasive methods of studying cancer cell metabolism, drug action and drug response. American College for the Advancement in Medicine (ACAM) – Integrative approaches in Oncology, Las Vegas, Nevada, October 19, 2008. The American College for Advancement in Medicine designates this educational activity for 1.00 *AMA PRA Category 1 Credit ™.* Physicians can claim credit commensurate with the extent of their participation in the lecture.

99. Luteolin inhibits *in vitro* pancreatic cancer cell proliferation: a comparative tracer isotope study with a targeted fatty acid synthesis inhibitor compound (C75). UCLA Center for Excellence in Pancreatic Diseases Research Seminar, Greater Los Angeles Veterans Administration, Los Angeles, California, December 19, 2008

100. Stable (^{13}C) Isotope-labeled Metabolite Fragments' Isotopomer Regression Analysis (*SIMFIRA*) Studies in Cancer. Cancer Metabolism Workshop, Bethesda North Conference Center, Rockville, Maryland, July 9-10, 2009

101. Metabolic Flux and Nutritional Phenotypes. Nutritional Phenotype Database (dbNP) Workshop of the US Food and Drug Administration, Jefferson, Arkansas, January 21, 2010

102. Stable isotope tracer metabolite markers of failing kidney function. Department of Pathology Faculty Research Seminar, University of California at San Francisco, San Francisco, California, March 11, 2010

103. Intermediary metabolism and macromolecule synthesis in response to deuterium depletion in pancreatic, breast and lung cancer cell lines. 1st International Symposium on Deuterium Depletion, Budapest, Hungary, May 13-14, 2010

104. Tracer substrate-based metabolomics in renal cancer for target identification, reverse genomics and biomarker identification. Urologic Oncology Branch, National Cancer Institute, National Institutes of Health – M. Linehan's Laboratory, Bethesda, Maryland, July 12, 2010

105. Tracer substrate-based metabolomics: a technological overview. Stanford Research Institute (SRI) International Biosciences Division Friday Seminars, Menlo Park, CA, July 30, 2010

106. Fructose alters glucose metabolism in adipocytes: FDA initiatives for stable isotope plasma markers of obesity, diabetes and cancer. UCLA Center for Excellence in Pancreatic Diseases Research Seminar, Greater Los Angeles Veterans Administration, Los Angeles, California, October 12, 2010

107. Diverse substrate utilization by tumor cells: clinical implications. Pulmonary Clinical Conference, Greater Los Angeles Veterans Administration, Los Angeles, CA, December 21, 2010

108. Bioinformatics of Glucose-tracer Based Metabolomics. Seventh Hirshberg Symposium for Pancreatic Cancer Research, Los Angeles, California, USA, February 18, 2011

109. Metabolomics for Population and Drug Research: Peer Reviewed Methods and Program Initiatives. UCLA School of Medicine, Los Angeles Biomedical Research Institute Basic Science Seminar, Torrance, CA, USA, April 12, 2011

110. Metabolomic Studies of Cancer Using 13C Tracer Substrates and Model Fitting. Cancer Research UK, Cambridge, United Kingdom, June 2, 2011

111. Cornering tumor cells in hypoxia: ^{13}C substrate guided tour of the metabolic network. Genentech Research Seminars, San Francisco, CA, USA, July 07, 2011

112. Research at academic institutions and pharmaceutical companies: from ideas to drugs. UCLA School of Medicine, Los Angeles Biomedical Research Institute - Career Pathways in Biological Sciences Student Fellowship Program, Torrance, CA, USA, August 02, 2011

113. Metabolomics and Drug Development in the Post-Genomic Era. Department of Pharmaceutical & Biomedical Sciences, College of Pharmacy at the University of Georgia, Athens, GA, February 29, 2012

114. Business and Science Perspectives for Stable Isotope Tracer-based Metabolomics in 2012. Institute for Veterinary Physiology and Biochemistry, Justus-Liebig-University, Giessen, Germany, July 02, 2012

115. Impact of growth signaling and the kinase inhibitor Glivec on tumor cell metabolism. Department of Nutritional Sciences, College of Agriculture and Life Sciences, University of Arizona, Tucson, AZ, August 29, 2012

116. Metformin, cholesterol, K-*ras*: Contextual synthetic inhibition of fatty acid synthase. Science Fridays, Los Angeles Biomedical Research Institute at the Harbor-UCLA Medical Center, Torrance, CA, USA, November 02, 2012

117. ^{13}C Substrate-based Metabolomics and Drug Development in the Post-Genomic Era. Discovery Biology, Rigel Pharmaceuticals, Inc., South San Francisco, CA, November 16, 2012

118. Targeted Tracer Fate Associations (TTFAS) in the ^{13}C-labeled Metabolome. Preston Robert Tisch Brain Tumor Center at the Duke University Medical Center, Durham, NC, June 19, 2013 (Certified by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. CME credit (AMA PRA Category 1 Credit)™)

119. Targeted ^{13}C Tracer Fate Association Studies (TTFAS): *Isotopolomics powered by SiDMAP*. Johns Hopkins School of Medicine, Baltimore, MD, June 20, 2013.



120. Isocitrate degydrogenase-1 (IDH-1) mutation and D-2-hydroxyglutarate deregulate mitochondrial function. Endocrine Clinical Research Conference, Harbor-UCLA Medical Center, Torrance, CA, USA, August 07, 2013.

121. Serine oxidation and glycine cleavage SOGC-isobolome as the signature of malignancy and targeted drug resistance. United States Food & Drug Administration (FDA) National Center for Toxicological Research, Center Wide Biomarker Study Concept Seminar, Jefferson, Arkansas, November 15, 2013. http://harborpeds.org/news/dr-laszlo-boros-cancer-sog-pathway

122. Failing molecular drug targets: how to overcome them using targeted metabolic tracer fate associations. Discovery Biology, Rigel Pharmaceuticals, Inc., South San Francisco, CA, November 18, 2013.

123. Deuterium depletion and mitochondrial NADPH production: the link for epigenetic control of oncogenesis. Science Fridays, Los Angeles Biomedical Research Institute at the Harbor-UCLA Medical Center, Torrance, CA, USA, December 13, 2013. http://youtu.be/GkYAjabGxJs - doi: 10.12918/SCIENCEFRDEC132014LGB

124. Mitochondrial fumarate hydratase deficient metabolic network of tumor cells. Combined Biochemistry Seminar Lecture, Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, March 20, 2014. (Hungarian) https://youtu.be/-rMQd0n_TR8

125. Metabolic control analysis (MCA) using targeted ^{13}C tracer substrate fate associations. Combined Biochemistry Seminar Lecture, Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, March 18, 2014 (English) http://youtu.be/Pms6k9AQ3bQ

126. Deuterium depletion controls oncogenesis via NADPH-dependent reductive synthesis via the pentose cycle. Celebrate Half a Century of Medical Innovations at LA BioMed, Torrance, CA, USA, April 24, 2014.

127. Targeted Deuterium Fate Association Study in Medicine Using Deuterobolomics (TDFAS). Patent Committee Business Development & Technology Management Faculty Presentation, Los Angeles BioMedical Research Institute at the Harbor-UCLA Medical Center [LAB0106], Torrance, CA, USA, November 14, 2014.

128. Partial deuteration of hydrogen bonded systems and their role in cancer development. Science Fridays, Los Angeles Biomedical Research Institute at the Harbor-UCLA Medical Center, Torrance, CA, USA, November 21, 2014

129. Molecular Biology, Functional Biochemistry and Deuterobolomics in Scriptures. Department for the Study of Religions, Faculty of Arts, University of Szeged, Szeged, Hungary, European Union, December 4, 2014. http://youtu.be/a7PdYx0hHU4 - DOI: 10.13140/2.1.4907.5525

130. Stable isotope methods to trace metabolic channels. Combined Biochemistry Seminar Lecture, Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, March 10, 2014 (English)

131. Metabolic and cytoplasmic water in hydrogen bonding networks of biomolecules. Combined Biochemistry Seminar Lecture, Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, March 10, 2014 (English)

132. Metabolic and cytoplasmic water in hydrogen bonding networks of DNA. UCLA School of Medicine, Los Angeles Biomedical Research Institute Basic Science Seminar, Torrance, CA, USA, April 28, 2015

133. Anti-cancer properties of metformin via mitochondrial deuterium depletion. Endocrine Clinical Research Conference, UCLA School of Medicine, Harbor-UCLA Medical Center, Torrance, CA, USA, July 29, 2015

134. Submolecular regulation of cell transformation by deuterium. UCLA Center for Excellence in Pancreatic Diseases Research Seminar, Greater Los Angeles Veterans Administration, Los Angeles, California, November 25, 2015

135. Mitochondrial deuterium depletion as the central mechanism of anti-cancer drug action. UCLA Center for Excellence in Pancreatic Diseases Research Seminar, Greater Los Angeles Veterans Administration, Los Angeles, California, December 02, 2015

136. How carbohydrates become oncometabolites when intracellular deuterium depletion fails. UCLA School of Medicine, Los Angeles Biomedical Research Institute Basic Science Seminar, Torrance, CA, USA, December 08, 2015

137. Stable isotope-based dynamic metabolic phenotyping. Combined Biochemistry Seminar Lecture, Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, March 08, 2016

138. Oncogenes, oncometabolites, oncoisotopes and cell transformation. Combined Biochemistry Seminar Lecture, Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, March 08, 2016

139. Deuterobolomics: Course Proposal for the Honor Collegium at UCLA UCLA School of Medicine, Los Angeles Biomedical Research Institute Basic Science Seminar, Torrance, CA, USA, March 15, 2016

140. Nanoindentations of fast moving enzymes and their lubrication with deuterium depleted water in mitochondria: applications for hyperbaric oxygen and nutritional ketosis. Department of Molecular Pharmacology and Physiology, Morsani College of Medicine, Hyperbaric Biomedical Research Laboratory, University of South Florida, Tampa, FL, USA, April 29, 2016

141. Nanoindentations of fast moving enzymes and their lubrication with deuterium depleted water: oncological applications for ATP synthase in the matrix of mitochondria. UCLA Center for Excellence in Pancreatic Diseases Research Seminar, Greater Los Angeles Veterans Administration, Los Angeles, California, May 04, 2016

142. Biological Nanomechanics: ATP Synthesis and Deuterium Depletion. UCLA School of Medicine, Los Angeles Biomedical Research Institute Basic Science Seminar, Torrance, CA, USA, August 23, 2016 - https://youtu.be/6P8gqB4zLGQ

143. Metabolomics and Biomarkers for the Prevention of Cancer and other Degenerative Diseases. American College for the Advancement in Medicine (ACAM) – Preventive approaches in Oncology, Tucson, Arizona, September 16, 2016. Educational activity for 1.00 AMA PRA Category 1 Credit™.

144. Ketogenic Diet and Deuterium Depleted Water for the Prevention and Treatment of Cancer and Neurodegenerative Conditions. American College for the Advancement in Medicine (ACAM) – Preventive approaches in Oncology, Tucson, Arizona, September 16, 2016. Educational activity for 1.00 AMA PRA Category 1 Credit™.

145. Nanomechanics of ATP Synthesis and Deuterium Depletion. Biochemistry, Biophysics, Molecular and Cell Biology PhD Elective Course in 2016/2017 first semester - Department of Biochemistry, Albert Szent-Györgyi Medical University, Szeged, Hungary, EU, October 12, 2016

146. The Effect of Deuterium Depletion on Cancer Cell Metabolism: Therapeutic Perspectives. 2nd International Conference for Cancer Metabolism and Therapy (CMT2017), First Affiliated Hospital of Wenzhou Medical University, Wenzhou, Zhejiang Province, China, October 15, 2017

147. In Memoriam: The Scientific Contributions of Dr. Wai-Nang Paul Lee. 3rd International Conference for Cancer Metabolism and Therapy (CMT2018), Shanghai General Hospital, Shanghai Jiaotong University, Shanghai, China, October 13, 2018

148. Deuterium Depleted Metabolic Water and Mitochondrial Health. China Academy Of Science & Technology Development, Shenzhen, China, March 23, 2019

149. Deutenomics, the inherent autonomic discrimination of deuterium by Nature: medical implications. Hirshberg Foundation Seed Grant Awardees Presentations, University of California Los Angeles School of Medicine UCLA Faculty Center Sequoia Room, September 20, 2019

150. Mitochondrial deupletion (deuterium depletion) restrains prokaryote proliferation and virus hosting cellular events thus alleviates the use of biologics. New Frontiers of Biology, Biological Drugs - Precision Medicine and -omic Sciences: The Role of Biologists, Place Parco dei Principi, Rome, Italy, European Union, April 18, 2020

151. Metabolic profiling and deutenomics of mitochondrial diseases. Institute for Women's and Children's Health at The Lundquist Institute and the Harbor-UCLA Medical Center, Torrance, CA, USA, June 01, 2020

Peer Review Panels

African Journal of Biotechnology (ISSN 1684-5315) (2014); *Analytical Biochemistry* (ISSN 0003-2697) (2003); *Anti-Cancer Drugs* (ISSN: 0959-4973) (2016); *Biochemical Pharmacology* (ISSN: 0006-2952) (2005); *Biochimica et Biophysica Acta - Molecular Basis of Disease* (ISSN: 0925-4439) (2015); *Biomarkers in Medicine* (ISSN 1752-0363) (2007); *BMC Cancer* (ISSN 1471-2407((2017); *BMC Systems Biology* (ISSN 1752-0509) (2014); *British Journal of Cancer* (ISSN 0007-0920) (2008); *Cancer & Metabolism* (ISSN 2049-3002) (2013); *Cancer Cell International* (ISSN 1475-2867) (2011); *Cancer Epidemiology, Biomarkers & Prevention* (ISSN 1538-7755) (2017); *Cancer Investigation* (ISSN 1532-4192) (2010); *Cancer Letters* (ISSN 1872-7980) (2007); *Cancer Metabolomics* (ISSN 2299-1085) (2012); *Cancer Research* (ISSN 1538-7445) (2011); *Cancers* (ISSN 2072-6694) (2014); *Carcinogenesis* (ISSN 1460-2180) (2009); *Cell Biology & Toxicology* (ISSN 1573-6822) (2007); *Cell Chemical Biology* (ISSN: 1074-5521) (2016); *Cells* (ISSN 2073-4409) (2019); *Cellular Oncology* (ISSN 2211-3428) (2011); *Chemistry and Biodiversity* (ISSN: 1612-1880) (2016); *Digestive Diseases & Sciences* (ISSN: 1573-2568) (2003); *Drug Design, Development and Therapy* (ISSN 1178-8881) (2013); *Dutch Cancer Society (Nederlandse Kankerbestrijding)* (2003); *European Journal of Pharmacology* (ISSN 0014-2999) (2006); *Evidence-Based Complementary and Alternative Medicine* (ISSN 1741-4288) (2013); *Federation of European Biochemical Societies (FEBS) Letters* (ISSN 0014-5793) (2005); *Free Radical Biology & Medicine* (ISSN 0891-5849) (2009); *French Recherche Médicale - Research pioneers programme CHEMISTRY FOR MEDICINE* (2018); *Frontiers in Endocrinology* (ISSN 1664-2392) (2019); *Genes & Nutrition* (ISSN: 1555-8932) (2019); *Harbor-UCLA Research and Education Institute (REI), Grants & Contracts* (2001 - 2004); *Hormone & Metabolic Research* (ISSN 0018-5043) (2000); *International Journal of Cancer* (ISSN 1097-0215) (2007); *International Journal of Molecular Sciences* (ISSN 1422-0067) (2019); *Israel Science Foundation* (2016); *Journal of Industrial and Engineering Chemistry* (ISSN: 1226-086X) (2017); *Journal of Theoretical Biology* (ISSN: 0022-5193) (2018); *Journal of Translational Medicine* (ISSN: 1479-5876) (2015); *Lipids in Health and Disease* (ISSN: 1476-511X) (2015); *Lung Cancer* (ISSN 0169-5002) (2010); *Metabolic Engineering* (ISSN 1096-7176) (2012); *Metabolites* (ISSN 2218-1989) (2013); *Metabolomics* (ISSN 1573-3890) (2004); *Molecular Cancer Research* (ISSN: 1541-7786 (Print)) (2019); *Molecular Cancer Therapeutics* (ISSN: 1535-7163 (Print)) (2019); *Molecular Medicine Reports* (ISSN 1791-2997) (2017); *Molecules* (ISSN 1420-3049) (2013); *Natural Sciences & Engineering Research Council of Canada* (2000); *Nature Protocols* (ISSN 1754-2189) (2007); *NMR in Biomedicine* (ISSN 1099-1492 (Online)) (2018); *Nutrients* (ISSN 2072-6643) (2019); *Nutrition & Cancer* (ISSN 1532-7914) (2004); *Oncogene* (ISSN 0950-9232) (2004); *Oncotarget* (ISSN · 1949-2553) (2018); *Pancreatology* (ISSN: 1424-3903) (2016); *Pharmacology & Therapeutics* (ISSN 0163-7258) (2012); *Phytomedicine* (ISSN: 0944-7113) (2017); *Public Library of Science (PLoS) Computational Biology* (ISSN 1553-7374) (2018); *Scientific Reports – Nature Publishing Group* (ISSN: 2045-2322) (2018); *The European Foundation for Alcohol Research* (ERAB) (2017); *The Journal of Pediatrics* (ISSN 0022-3476) (2006); *University of Alabama at Birmingham Clinical Nutrition Research Center* (2004)

Funding History & Current Support

ACTIVE

1. **STABLE ISOTOPE PROFILES OF SERUM, SALIVA, URINE AND CELL PELLETS IN HEALTH AND DISEASE**
   Epigenix Foundation, El Segundo, CA, USA
   P.I. – L. G. Boros 01/15/2017 - 12/15/2020
   Continued Medical Education (CME) and College Course Development $60,000 25%

   This grant is to cover CignatureHealth teaching functions and clinical stable deuterium and oxygen isotope sample collection in various body fluids. MRI and 13C tracer guided metabolomics are also covered under this amendable project towards additional clinical deuterobolomics research efforts including tENOX2 profiling.

2. **HEPATOTOXICITY FLUX STUDY FOR REGORAFENIB**
   United States Food and Drug Administration, Jefferson, Arkansas, USA
   P.I. – L. G. Boros 09/15/2016 – 09/01/2021
   ^{13}C and ^{2}H markers of Stivarga's Liver Toxicity $25,410 40%

   This project will determine precise mitochondrial toxicity markers in the liver with a translational edge regarding regorafenib

3. **DEUTEROBOLOMICS AND KETOBOLOMICS**
   Epigenix Foundation, El Segundo, CA, USA
   P.I. – L. G. Boros 05/15/2016 - 05/15/2017
   Continued Medical Education (CME) and College Course Development $75,000 30%

   This grant is to develop biochemistry courses that train physicians and honors students for interpreting deuterium and hydrogen biochemistry in response to ketogenic dietary modifications which deplete deuterium with applications in biology and medicine. The topic is for continued medical education (CME) credits and also considered for the UCLA Honors College.

4. **HUNTINGTON SOCIETY OF CANADA** - New Pathways Research Grant
   Western Washington University, Bellingham, WA, USA
   WWU (P.I. – J. Carroll); UCLA SubK (Co-P.I. – L. Boros) 01/01/2016 - 12/31/2016
   Peripheral silencing of Htt^{Q111} in Huntington's disease $18,000 15%

   This grant is to establish whether peripheral silencing of Htt^{Q111} is associated with rescue of central metabolic dysregulation in Huntington's disease using U-^{13}C-glucose to determine striatal ^{13}C-lactate -, glutamate and –palmitate ^{13}C labeling.

5. **RO1CA169919 US NIH/NCI**
   University of Maryland and UCLA Liver Cancer Research Project
   JHSM (P.I. – G. Girnun); UCLA SubK (Co-P.I. – L. Boros) 09/01/2012 - 08/31/2017
   Metabolic control of hepatocellular carcinoma by PGC1-alpha $337,000 5%

   Stable isotope tracer substrate technology is used to reveal peroxisome proliferator-activated receptor gamma co-activator 1-alpha (PGC1alpha) in liver carcinogenesis and its Systems' Biology and how it affecting the metabolic network.

PENDING

6. **CA150640P1** – United States Department of Defense (P.I. – Boros) 03/31/2016 - 10/30/2019
Contextual Metabolic Background for Pancreatic Cancer Treatment $325,000 20%

This project reveals ^{13}C plasma and tissue markers of deuterium depleting Metformin actions in the context of fatty acid and cholesterol intake in animals and patients. (This project has passed proposal screening and is invited for full submission by Sept 29, 2015 to the DoD)

COMPLETED

1. **MRDF 53656** (P.I. - Boros) 01/01/1995-12/31/1995
The Ohio State University Department of Surgery $4,996
Tumor ribose synthesis pathways.

This project allowed preliminary/feasibility investigations in the field of tumor specific nucleic acid ribose synthesis pathways from glucose as the precursor and source for nucleic acid backbone sugar synthesis.

2. **PO1 CA42710-12** (P.I. - Heber) 01/01/1998-12/31/1998
US NIH Clinical Nutrition Research Unit/UCLA (CNRU) $15,000
Lipid and RNA ribose synthesis in tumor cells and the mechanism of soy protein action on pentose cycle activity using ^{13}C labeled glucose or acetoacetate.

This project provided preliminary/feasibility funding for studying specific inhibitors of pentose cycle enzymes in order to inhibit *in vitro* pancreatic tumor cell growth and transformation.

3. **Fulbright** (P.I. - Cascante) 01/07/1999-31/06/2000
Commission for Cultural, Educational and Scientific Exchange of Spain $12,780
Travel grant for scientific exchange and visits between the US and Spain.

4. **Harbor-UCLA Inaugural Collegium** (P.I. - Boros) 2001
Harbor-UCLA Research and Education Institute $12,000 N/A
Equipment purchase award for an atmospheric pressure chemical ionization (APCI) probe for the LCQ Deca ion trap mass spectroscope instrument.

5. **MO1 RR00425-34** (P.I. - Anderson) 12/01/1977 - 09/30/2003
US DHHS/NIH/NCRR (Mass Spectroscopist - Boros)
General Clinical Research Center

This project provided continued support for an inpatient General Clinic Research Center (GCRC) unit, outpatient GCRC facilities, a Perinatal Clinical Research Center (PCRC) at Martin Luther King Drew Medical Center, and a Satellite GCRC at Cedars-Sinai Medical Center.

6. **MA 1760/2-1 & 1760/2-2; German Research Communications (Deutsche Forschungsgemeinschaft (DFG)** (P.I. – Mazurek) 02/01/2001 - 01/31/2003
Habilitation and scientific exchange studies for Dr. Sybille Mazurek $20,000.00 N/A

7. **Henry L. Guenther Core Metabolic Profiling Laboratory (P.I. – Lee)** 08/01/2003
Harbor-UCLA Research & Education Institute (Co-P.I. – Boros) $380,000.00

This project provides funds for a one-time purchase of a time of flight (TOF) mass spectrometer (Applied Biosystems - Voyager), a Liquid Chromatograph Finnegan Deca Ion Trap mass spectrometer (LCQ-Deca) and their support peripheries.

8. **Inflammatory Breast Cancer Research Foundation** (P.I. - Boros) 03/01/2003 - 02/28/2004
   Metabolic profile of inflammatory breast cancer cells. $20,000
   N/A

   This project provides funding to clarify inflammatory breast cancer metabolic characteristics and to develop new treatment strategies based on metabolic pathway inhibitors in this rapidly growing undifferentiated cancer on a renewable seed grant basis.

9. **RO1 HL66182-01A1 SUBK** (P.I. - Neufeld) 10/01/2001 - 09/30/2006
   US DHHS/NIH/NCI (P.I.-Boros; Operating Institution Project Director) $20,050 14%
   Pathophysiology of Thiamine-Responsive Anemia Syndrome

   This project describes the biochemical defect involved in the thiamine responsive megaloblastic anemia syndrome using stable isotope based metabolic profiling *in vitro* and *in vivo*.

10. **PO1 CA42710-16 SUBK** (P.I. Heber) 05/01/1992 - 04/30/2007
    UCLA Subcontract (Mass Spectroscopist - Boros) $19,637 5%
    Clinical Nutrition Research Unit: Stable Isotope Core.

    The major goal of this project is to develop chemo preventative approach to cancer through nutrition modification. To operate and co-direct the GC/MS core for CNRU approved projects.

11. **6-FY2002-181** (P.I.-Torday) 06/01/2003 - 5/31/2007
    March of Dimes (Boros-Co. I.) $68,182 10%
    The Role of Myofibroblasts in the Pathophysiology of Bronchopulmonary Dysplasia.

    The aim of this project is to determine the mechanism of lipo-fibroblast transdifferentiation in newborns using combined genetic and metabolic profiling approaches.

12. **RO1 HL66182-01A1 SUBK** (P.I. – Eibl) 03/01/2004 - 31/12/2008
    US NIH/NCI (Co-P.I. – Boros) $225,000 10%
    The Role of COX-2 and PPAR-□ in Pancreatic Cancer

    The proposed studies explicate the effect of COX-2 and PPAR gamma inhibitors in pancreatic cancer anti-proliferative treatment and metabolic phenotype.

13. **REI Project #: 200279-00-00** (Los Angeles Biomedical Research Institute) 07/01/2004 - 06/30/2010
    Hirshberg Foundation for Pancreatic Cancer Research (P.I. - Boros) $25,000 14%
    Biochemistry of Pancreatic Cancer using Stable Isotope-based Metabolic Profiling

    This project describes the biochemical defect involved in the development and progression of pancreatic cancer using stable isotope based metabolic profiling *in vitro* and *in vivo*.

14. **RO1CA140492 US NIH/NCI**
    Johns Hopkins School of Medicine and UCLA Nrf2 Lung Cancer Research Project
    JHSM (P.I. – S. Biswal); UCLA SubK (Co-P.I. – L. Boros) 04/01/2010 - 03/31/2015
    Regulation of Tumorigenesis and Therapeutic Resistance by Nrf2 in Lung Cancer $325,000 5%

Stable isotope tracer substrate technology is used to reveal therapeutic resistance in lung cancer using several Nrf2 gene constructs and their effect on the metabolic network.

15. **UCLA 20038-01 (Interim) - NIH NCI Chemical Biology Consortium**
Stanford Research Institute (SRI) and UCLA Applicant Organizations

SRI (P.I. – Sambucetti); UCLA-Metabolomics Core (P.I. – Boros) 05/01/2011 - 06/31/2012
Project Consortium for new Cancer Drug Development $108,877 25%

This project determines the effect of AMP-Kinase growth signaling in cancer cell energy metabolism *in vitro* and *in vivo*.

16. **1 P01 AT003960-01A1**
US NIH/NCI (P.I. – Go); Metabolomics Core (Co-P.I.s – Lee-Boros) 10/01/2007 - 09/30/2012
UCLA Center for Excellence in Pancreatic Diseases $125,000 5%

Stable isotope tracer substrate technology is used to reveal natural phytochemical and nutritional products and their preventive/therapeutic applications in pancreatic diseases, including inflammation and cancer.

17. **HUNTINGTON SOCIETY OF CANADA** - New Pathways Research Grant
Western Washington University, Bellingham, WA, USA
WWU (P.I. – J. Carroll); UCLA SubK (Co-P.I. – L. Boros) 07/01/2013 - 06/31/2014
Mapping hepatic dysfunction in Huntington's disease $135863
5%

This grant is to quantify metabolic flux from 13C-labeled glucose and palmitate in primary hepatocytes from Htt+/+ and Htt Q111/+ mice fed medium- and high-fat diets. Additional transcriptomic data sets from parallel cultures of purified hepatocytes are generated to refine existing genome-scale models of hepatic metabolism, in hopes of identifying key signaling nodes that could serve as targets for future therapeutic development.

18. **HUNTINGTON SOCIETY OF CANADA** - New Pathways Research Grant
Western Washington University, Bellingham, WA, USA
WWU (P.I. – J. Carroll); UCLA SubK (Co-P.I. – L. Boros) 07/01/2015 - 06/30/2016
Mapping hepatic dysfunction in Huntington's disease $93,000
15%

This grant is to quantify metabolic flux from ^{13}C-labeled glucose, glutamine and palmitate tracers in primary hepatocytes isolated from Huntington's mice fed a normal diet across an allelic series of 6 different allele lengths using Huntington's gene constructs.

19. **Pilot 1506944155** - The University of Arizona Cancer Center
National Cancer Institute-designated Comprehensive Cancer Center
The UACC — Orange Grove Campus, Tucson, AZ, USA
UACC (P.I. – H. Patel, MD); Harbor-UCLA Consortium (Co-P.I. – L. Boros) 07/01/2015 - 06/31/2016
Pilot project to study metabolic profile in patients with pancreatic adenocarcinoma $140,000 15%

This grant is to determine targeted tracer fate association patterns (TTFAS) by metabolic products of [U-$^{13}C_6$]-D-glucose in control subjects and in patients with pancreatic cancer. The study is designed to establish functional ^{13}C-based plasma markers of mitochondrial deuterium depletion and oxygen saturation to enhance anti-cancer drug efficacy based on individual metabolic profiles.

Languages & Communications Skills

Fluent and literate in English and Hungarian, basic language skills in German, advanced computer skills, Microsoft-office, Word Perfect, Corel graphics, Mass Spectra analyses/processing using Excel macros and Visual Basic

Courses, Compliance and Certifications

Advanced Tools for Proteomics and Pharmaceutical Analysis – Dionex Corporation 2001 Spring Seminar Series for Laboratory Professionals, *Woodland Hills, CA, May 17th, 2001*

Data and Safety Monitoring Policy and Procedures for the General Clinical Research Centers (GCRCs) of the United States – Harbor-UCLA Medical Center, *Torrance, CA, March 28th, 2001*

LCQ Operations – ThermoQest Finnegan LCQ Classic, Duo, Deca and triple quadrupole (TSQ) basic instrument operations, including atmospheric pressure ionization (API) and ion trap theory, tuning, calibration, data collection, maintenance, qualitative and quantitative data analysis/processing using Xcalibur - *Riviera Beach, Florida, February 26- March 2, 2001*

Responsible Conduct of Research Curriculum – Harbor-UCLA Research and Education Institute General Clinical Research Center, *Torrance, CA, February 28th, 2001*

Protecting Study Volunteers in Research – Educational/Training Course Certification – Harbor-UCLA Research and Education Institute – *Torrance, CA, Sep 29th, 2000*

Laboratory Animal Care and Handling Course, guided by the Institutional Laboratory Animal Care and Use Committee (ILACUC) of the University of California at Los Angeles, *Torrance, CA, October, 1998*

Basic Life Support cognitive and skills evaluation certificate for healthcare providers, curriculum of the American Heart Association – Ohio Valley, Columbus State C.C. Training Center, *Columbus, OH, June 12th, 1998*

Laboratory Animal Care and Handling Course, guided by the Institutional Laboratory Animal Care and Use Committee (ILACUC) of the Ohio State University, *Columbus, Ohio, July, 1990*

The Impact of Colorful Fruits and Vegetables on Health, UCLA Center for Human Nutrition, *Los Angeles, CA, September 5, 2001*

Matrix assisted laser desorption time of flight mass spectrometry (MALDI-TOF) sample preparations, operations, data analysis. UCLA Department of Chemistry, *Los Angeles, CA, March 18, 2001*

Human Proteome Organization (HUPA) & Amersham Proteomics Tour 2002. University of California Faculty Center, *Los Angeles, CA, September 19, 2002*

Finnigan Technology Forum: Gel analysis by mass spectrometry, Protein quantitation and analysis of phosphoproteins. Thermo Finnigan Western Region, *La Jolla, CA, November 21, 2002*

Linear ion trap technology, high throughput quantitative analysis by liquid chromatography/mass spectrometry (LC/MS/MS), advanced structural characterization, and metabolite and impurity identification. Applied Biosystems Applications seminar, *Buena Park, CA, November 22, 2002*

Southern California Biomedical Council Presentation Preparation Course for Venture and Investment Opportunities. KPMG International, *Los Angeles, CA, February 6, 2003*

Preparative Screening Course for Academic Institutions, the Southern California Biomedical Council and Kaiser Permanente Management Ground (KPMG) International, *Los, Angeles, CA, February 13, 2003*

Protected Health Information (PHI) Health Insurance Portability & Accountability Act Certificate of the Harbor-UCLA Research and Education Institute, *Torrance, CA, May30, 2003*

Voyager-DE™ STR BioSpectometry™ Workstation (Applied Biosystems MALDI-TOF) Training Course, *Foster City, California, July 13-16, 2004*

Research Services Training: Current Laboratory Animal Handling and Use. Los Angeles Biomedical Research Institute, *Torrance, CA, June 06, 2005*

Title 8, Section 5193 California Code of Regulations Bloodborne Pathogen and Disease Training Course. Los Angeles Biomedical Research Institute, *Torrance, CA, June 13, 2005*

Infectious Agents and Diagnostics Specimens Transportation Saf-T-Pack Training (Tested As Per 49CFR 172.700 / IATA 1.5). Los Angeles Biomedical Research Institute, *Torrance, California, July 14, 2005*

Integrated Medical Research Information System - iMedRIS Data Corporation on-site Training Course at the Los Angeles Biomedical Research Institute, *Torrance, California, July 15, 2005*

Sexual Harassment Prevention Training Course – State of California Code Training Course at the Los Angeles Biomedical Research Institute, *Torrance, California, December 16, 2005*

Mandated Section Test Los Angeles County Department of Health Services Harbor-UCLA Medical Center Re-orientation: Infection Control, Environment of Care, Family Violence, Cultural Diversity, HIPAA & Age Appropriate Care Considerations. Result: Pass; *Torrance, California, July 10, 2006*

Department of Health & Human Services – USA; Los Angeles County DHS Compliance Training Program, *June 22, 2007*

Mandatory Online Sexual Harassment Prevention Course for University of California (UC) Faculty. Sexual Harassment Prevention Training - required by California law (AB1825), October 11, 2007

Mandatory Compliance Briefing: University of California Ethical Values and Conduct. April 05, 2010

Mandatory Online Sexual Harassment Prevention Course for University of California (UC) Faculty Title VII of the Civil Rights Act of 1964 - Title IX of the Education Amendments of 1972, April 05, 2010

Basics of Drug Safety and Pharmacovigilence. Pharmacovigilance audit compliance course of global drug safety and pharmacovigilance regulations. FDA and EMA drug safety regulations. Park Avenue Presentations, Inc., webinar: Wednesday, December 8, 2010

California Medical Waste Management Act Inspection Mandatory Course. N-14 Board Room, LABiomed at the Harbor-UCLA Medical Center, Gil Armangue, CHMM, Safety Director, November 30, 2010

General Training - Corporate Integrity Agreement (CIA). Office of the Inspector General (OIG), USA Department of Health and Human Services per Novartis Pharmaceuticals. January 23, 2011

Interactions with Health Care Providers (HCPs): Payments, Meals and the Provision of Other Items - Corporate Integrity Agreement (CIA). Office of the Inspector General (OIG), USA Department of Health and Human Services per Novartis Pharmaceuticals. January 23, 2011

Federal Compliance and Process/Approval Mechanisms - Corporate Integrity Agreement (CIA). Office of the Inspector General (OIG), USA Department of Health and Human Services per Novartis Pharmaceuticals. January 23, 2011

The Health Insurance Portability and Accountability Act (HIPAA) LABiomed Online Educational Training Course - Protection of Research Subjects, February 09, 2011

Good Clinical Practices Properly Informed Investigator/Faculty Certificate – General Clinical Research Center at the Harbor-UCLA Medical Center, Torrance, CA, February 12, 2011

Association for the Accreditation of Human Research Protection Programs, Inc., From the Investigator's Point of View – LABioMed – UCLA Certification Update and Course, RB-2, Torrance, CA, October 27, 2011

Investigator Manual - accreditation updates for responsibilities of investigators and staff when conducting human research. LABioMed – UCLA Certification Update Course, RB-3, Torrance, CA, December 02, 2011

Human Research Protection Program Accreditation - Protocol and Consent Form Template (Unit 2, 2012). Research Building (RB)-2, Torrance, CA, March 19, 2012

Sexual Harassment Prevention Training Course (supervisory employees) – Unlawful Harassment and Non-Retaliation Policy Review, two-year mandatory re-certification – State of California Code Training Course at the Los Angeles Biomedical Research Institute, Torrance, California, April 20, 2012

Financial Conflict of Interest (FCOI) Training, Office of Research Administration Los Angeles Biomedical Research Institute, Harbor-UCLA Medical Center, Torrance, California, December 07, 2012

Financial Conflict of Interest (FCOI), National Institutes of Health Office of Extramural Research, Bethesda, Maryland, USA, December 11, 2012 - http://grants.nih.gov/grants/policy/coi/tutorial2011/fcoi.htm

Office of Continuing Medical Education, Duke School of Medicine, Conflict of Interest Disclosure For Presenters, May 29, 2013.

Workplace Safety, Hazardous Substances & Materials. Hazard Communication & GHS – What Employees Need to Know". Los Angeles Biomedical Research Institute, Harbor-UCLA Medical Center, Torrance, California, November 22, 2013

Workplace Safety, Hazardous Substances & Materials. Hazard Communication & GHS – What Supervisors Need to Know". Los Angeles Biomedical Research Institute, Harbor-UCLA Medical Center, Torrance, California, November 22, 2013.

Human Biomedical Research Basic Scientists - Collaborative Institutional Training Initiative at the University of Miami, Florida, USA – Pass - REFERENCE ID – 13515591, July 18, 2014. (Expire July 17, 2017)

Human Biomedical Research Staff - Collaborative Institutional Training Initiative at the University of Miami, Florida, USA – Pass - REFERENCE ID – 13515590, July 18, 2014. (Expire July 17, 2017)

Human Biomedical Research Investigators – FDA Regulated Research - Collaborative Institutional Training Initiative at the University of Miami, Florida, USA – Pass - REFERENCE ID – 13515593, July 18, 2014.

University of California Los Angeles (UCLA) Employee Safety Handbook material re-certified ehs.ucla.edu/SafetyHandbook.pdf, July 27, 2017

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) - University of California, Los Angeles (UCLA) (ID: 762) - PEDIATRICS-ENDOCRINOLOGY - UCLA HIPAA (ID:13861) June 29, 2015
Supervisor Anti-Harassment (CA) - 300: Intersections: LawRoom Inspired Employer Solutions course of the Los Angeles Biomedical Research Institute, Torrance, California, February 10, 2016

Accident Investigations - BUSINESS & LEGAL RESOURCES – The importance of accident investigation, how to talk to witnesses, what questions to ask when evaluating an accident scene, how to determine causal factors, and how to identify corrective actions – Pass: August 30, 2016

Americans with Disabilities Act – What Supervisors Need to Know - BUSINESS & LEGAL RESOURCES – To handle job interviews and post-offer discussions properly, deal appropriately with leaves of absence and reinstatement, and avoid discrimination based on disability – Pass: August 30, 2016

Basic First Aid for Medical Emergencies - BUSINESS & LEGAL RESOURCES – to recognize the benefits of obtaining first-aid and CPR certification; identify proper procedures for a variety of medical emergencies; assist in administering first aid when a co-worker is injured; and do no further harm – Pass: August 30, 2016

Fire prevention and extinguishers in California - BUSINESS & LEGAL RESOURCES – To understand the requirements enforced by the California Occupational Safety and Health Administration for both fire prevention and portable fire extinguishers – Pass: August 30, 2016

Hazard Communication and GHS - What Supervisors Need to Know - BUSINESS & LEGAL RESOURCES – To recognize the revised chemical labels and safety data sheets, or SDSs, and train employees to read and interpret GHS-compliant labels and SDSs – Pass: August 30, 2016

Laboratory Recordkeeping for Supervisors - BUSINESS & LEGAL RESOURCES – To cover all the basic laboratory safety records you have to maintain concerning the use of hazardous chemicals in the lab – Pass: August 30, 2016

Laboratory Safety- the Supervisor's Role - BUSINESS & LEGAL RESOURCES – To gain a better understanding of your role as a supervisor in implementing and maintaining chemical hygiene and safety in the laboratory – Pass: August 30, 2016

Violence in Workplace- How to Prevent and Defuse for Supervisors - BUSINESS & LEGAL RESOURCES – To identify the causes of workplace violence, spot the signs of potential violence, follow required security procedures, respond effectively to violent acts, and recognize and respond to terrorist threats – Pass: August 30, 2016

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) – Los Angeles Biomedical Research Institute (LABIOMED) (ID: 2094) - PEDIATRICS – EXPORT COMPLIANCE (ID:16800) - Oct 06, 2016

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) – Los Angeles Biomedical Research Institute (LABIOMED) (ID: 2094) - PEDIATRICS – CONFLICT OF INTEREST COURSE – Introduction (Cal-Basic) (ID: 15177) - Financial Conflicts of Interest: Overview, Investigator Responsibilities, and Cal Rules (Cal-Basic) (ID: 15070) - Institutional Responsibilities as They Affect Investigators (Cal-Basic) (ID: 15072) - Oct 06, 2016

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) – Los Angeles Biomedical Research Institute (LABIOMED) (ID: 2094) - PEDIATRICS – STAGE-1 ANIMAL RESEARCH POST-APPROVAL MONITORING – June 19, 2018

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) – Los Angeles Biomedical Research Institute (LABIOMED) (ID: 2094) - PEDIATRICS – ANIMAL WELFARE REFRESHER – June 26, 2018

SUPERVISORS [CALIFORNIA] - HARASSMENT PREVENTION FOR SUPERVISORS (AB1825 COMPLIANT) May 30, 2019

SCIENTIFIC REPORTS - NATURE - EDITORIAL BOARD MEMBER COURSE - CERTIFICATE OF COMPLETION - July 01, 2019

BIOMEDICAL RESEARCH – BASIC/REFRESHER – STAGE 2 (Curriculum/Course Learner Group) - (CITI PROGRAM) – EXPIRATION DATE: 24 SEP 2022 – RECORD ID: 33153483

HUMAN RESEARCH - BIOMEDICAL RESEARCHERS & STAFF (ID 38617) - COMPLETION DATE 10-FEB-2020, EXPIRATION DATE 09-FEB-2023, RECORD ID 33953071 - HTTPS://WWW.CITIPROGRAM.ORG/VERIFY/?W61BEE093-26D8-4B72-9022-354E77238881-33953071

P e r s o n a l

Date and Place of Birth: June 12, 1962, Szolnok, Hungary

Marital status: Single (divorced)

Child: 1 Daughter (born March 26, 1988, Germany)

Native of Hungary and citizen of the European Union

Lawfully Admitted Permanent Resident of the United States of America: Professional holding an advanced degree and of exceptional ability" [#203 (b) a(A) of the Immigration and Nationality Act; category E26]" – May 04, 1993 – January 19, 2011

Citizen of the United States of America: January 19, 2011

EXHIBIT “B”

ABSTRACTS

1. Khatami M. Cancer; an induced disease of twentieth century! Induction of tolerance, increased entropy and 'Dark Energy': loss of biorhythms (Anabolism v. Catabolism). Clin Transl Med. 2018;7(1):20. Published 2018 Jul 2. doi:10.1186/s40169-018-0193-6

   [Metric--5% top rated]

   Maintenance of health involves a synchronized network of catabolic and anabolic signals among organs/tissues/cells that requires differential bioenergetics from mitochondria and glycolysis (biological laws or biorhythms). We defined biological circadian rhythms as Yin (tumoricidal) and Yang (tumorigenic) arms of acute inflammation (effective immunity) involving immune and non-immune systems. Role of pathogens in altering immunity and inducing diseases and cancer has been documented for over a century. However, in 1955s decision makers in cancer/medical establishment allowed public (current baby boomers) to consume million doses of virus-contaminated polio vaccines. The risk of cancer incidence and mortality sharply rose from 5% (rate of hereditary/genetic or innate disease) in 1900s, to its current scary status of 33% or 50% among women and men, respectively. Despite better hygiene, modern detection technologies and discovery of antibiotics, baby boomers and subsequent 2-3 generations are sicker than previous generations at same age. American health status ranks last among other developed nations while America invests highest amount of resources for healthcare. In this perspective we present evidence that cancer is an induced disease of twentieth century, facilitated by a great deception of cancer/medical establishment for huge corporate profits. Unlike popularized opinions that cancer is 100, 200 or 1000 diseases, we demonstrate that cancer is only one disease; the severe disturbances in biorhythms (differential bioenergetics) or loss of balance in Yin and Yang of effective immunity. Cancer projects that are promoted and funded by decision makers are reductionist approaches, wrong and unethical and resulted in loss of millions of precious lives and financial toxicity to society. Public vaccination with pathogen-specific vaccines (e.g., flu, hepatitis, HPV, meningitis, measles) weakens, not promotes, immunity. Results of irresponsible projects on cancer sciences or vaccines are increased population of drug-dependent sick society. Outcome failure rates of claimed 'targeted' drugs, 'precision' or 'personalized' medicine are 90% (± 5) for solid tumors. We demonstrate that aging, frequent exposures to environmental hazards, infections and pathogen-specific vaccines and ingredients are 'antigen overload' for immune system, skewing the Yin and Yang response profiles and leading to induction of 'mild', 'moderate' or 'severe' immune disorders. Induction of decoy or pattern recognition receptors (e.g., PRRs), such as IRAK-M or IL-1dRs ('designer' molecules) and associated genomic instability and over-expression of growth promoting factors (e.g., pyruvate kinases, mTOR and PI3Ks, histamine, PGE2, VEGF) could lead to immune tolerance, facilitating cancer cells to hijack anabolic machinery of immunity (Yang) for their increased growth requirements. Expression of constituent embryonic factors would negatively regulate differentiation of tumor cells through epithelial-mesenchymal-transition and create "dual negative feedback loop" that influence tissue metabolism under hypoxic conditions. It is further hypothesized that induction of tolerance creates 'dark energy' and increased entropy and temperature in cancer microenvironment allowing disorderly cancer proliferation and mitosis along with increased glucose metabolism via Crabtree and Pasteur Effects, under mitophagy and ribophagy, conditions that are toxic to host survival. Effective translational medicine into treatment requires systematic and logical studies of complex interactions of tumor cells with host environment that dictate clinical outcomes. Promoting effective immunity (biological circadian rhythms) are fundamental steps in correcting host differential bioenergetics and controlling

cancer growth, preventing or delaying onset of diseases and maintaining public health. The author urges independent professionals and policy makers to take a closer look at cancer dilemma and stop the 'scientific/medical ponzi schemes' of a powerful group that control a drug-dependent sick society before all hopes for promoting public health evaporate.

2. Khatami M. Is cancer a severe delayed hypersensitivity reaction and histamine a blueprint?. Clin Transl Med. 2016;5(1):35. doi:10.1186/s40169-016-0108-3 Abstract
Longevity and accumulation of multiple context-dependent signaling pathways of long-standing inflammation (antigen-load or oxidative stress) are the results of decreased/altered regulation of immunity and loss of control switch mechanisms that we defined as Yin and Yang of acute inflammation or immune surveillance. Chronic inflammation is initiated by immune disruptors-induced progressive changes in physiology and function of susceptible host tissues that lead to increased immune suppression and multistep disease processes including carcinogenesis. The interrelated multiple hypotheses that are presented for the first time in this article are extension of author's earlier series of 'accidental' discoveries on the role of inflammation in developmental stages of immune dysfunction toward tumorigenesis and angiogenesis. Detailed analyses of data on chronic diseases suggest that nearly all age-associated illnesses, generally categorized as 'mild' (e.g., increased allergies), 'moderate' (e.g., hypertension, colitis, gastritis, pancreatitis, emphysema) or 'severe' (e.g., accelerated neurodegenerative and autoimmune diseases or site-specific cancers and metastasis) are variations of hypersensitivity responses of tissues that are manifested as different diseases in immune-responsive or immune-privileged tissues. Continuous release/presence of low level histamine (subclinical) in circulation could contribute to sustained oxidative stress and induction of 'mild' or 'moderate' or 'severe' (immune tsunami) immune disorders in susceptible tissues. Site-specific cancers are proposed to be 'severe' (irreversible) forms of cumulative delayed hypersensitivity responses that would induce immunological chaos in favor of tissue growth in target tissues. Shared or special features of growth from fetus development into adulthood and aging processes and carcinogenesis are briefly compared with regard to energy requirements of highly complex function of Yin and Yang. Features of Yang (growth-promoting) arm of acute inflammation during fetus and cancer growth will be compared for consuming low energy from glycolysis (Warburg effect). Growth of fetus and cancer cells under hypoxic conditions and impaired mitochondrial energy requirements of tissues including metabolism of essential branched amino acids (e.g., val, leu, isoleu) will be compared for proposing a working model for future systematic research on cancer biology, prevention and therapy. Presentation of a working model provides insightful clues into bioenergetics that are required for fetus growth (absence of external threat and lack of high energy-demands of Yin events and parasite-like survival in host), normal growth in adulthood (balance in Yin and Yang processes) or disease processes and carcinogenesis (loss of balance in Yin-Yang). Future studies require focusing on dynamics and promotion of natural/inherent balance between Yin (tumoricidal) and Yang (tumorigenic) of effective immunity that develop after birth. Lawless growth of cancerous cells and loss of cell contact inhibition could partially be due to impaired mitochondria (mitophagy) that influence metabolism of branched chain amino acids for biosynthesis of structural proteins. The author invites interested scientists with diverse expertise to provide comments, confirm, dispute and question and/or expand and collaborate on many components of the proposed working model with the goal to better understand cancer biology for future designs of cost-effective research and clinical trials and prevention of cancer. Initial events during oxidative stress-induced damages to DNA/RNA repair mechanisms and inappropriate expression of inflammatory mediators are potentially correctable, preventable or druggable, if future studies were to focus on systematic understanding of early altered immune response dynamics toward multistep chronic diseases and carcinogenesis.
Maeda H, Khatami M. Analyses of repeated failures in cancer therapy for solid tumors: poor

tumor-selective drug delivery, low therapeutic efficacy and unsustainable costs. Clin Transl Med. 2018;7(1):11. Published 2018 Mar 1. doi:10.1186/s40169-018-0185-6

References:

1) https://www.nature.com/srep/about/editorial-board#biologicalphysics (BIOLOGICAL PHYSICS)
2) https://www.mdpi.com/journal/molecules/editors
3) https://journals.lww.com/md-journal/Pages/Open-Access-Editorial-Board.aspx
4) G D Glick, et al. Anaplerotic metabolism of alloreactive T cells provides a metabolic approach to treat graft-versus-host disease. J Pharmacol Exp Ther. 2014; 351(2):298-307. doi: 10.1124/jpet.114.218099
5) L G Boros, R D Williams. Chronic isofenphos poisoning: case report of agnogenic myeloid metaplasia with a rapid progression into acute myeloid leukemia. Leuk Res. 1998; 22(9):849-51. doi: 10.1016/s0145-2126(98)00052-6
6) L G Boros, R D Williams. Isofenphos induced metabolic changes in K562 myeloid blast cells. Leuk Res. 2001; 25(10):883-90. doi: 10.1016/s0145-2126(01)00043-1
7) R D Williams, et al. Chromosomal aberrations in human lymphocytes exposed to the anticholinesterase pesticide isofenphos with mechanisms of leukemogenesis. Leuk Res. 2004; 28(9):947-58. doi: 10.1016/j.leukres.2003.12.014
8) G D Glick, A W Opipari, L G Boros. Methods and compositions for detecting immune system activation. United States Patent Application number PCT/US2013/031879; Publication date Sep 26, 2013; Filing date Mar 15, 2013; Priority date Mar 19, 2012, September 2013 Patent: WO2013142303 A1
9) M L Anderson, et al. The Effect of Influenza Vaccination for the Elderly on Hospitalization and Mortality. An Observational Study With a Regression Discontinuity Design. Original Research in Ann Intern Med. 2020; 173(4):322-323. https://doi.org/10.7326/M19-3075

10) A Donzelli. Effect of Influenza Vaccination for the Elderly on Hospitalization and Mortality. Ann Intern Med. 2020; 173(4):322. doi: 10.7326/L20-0828. https://doi.org/10.7326/L20-0828

11) https://youtu.be/a7el_zNfq4A - full recording: https://www.c-span.org/video/?466609-1/flu-vaccine-science-innovation

12) J G Donahue, et al. Association of spontaneous abortion with receipt of inactivated influenza vaccine containing H1N1pdm09 in 2010-11 and 2011-12. Vaccine. 2017; 35(40):5314-5322. doi: 10.1016/j.vaccine.2017.06.069

13) J G Donahue, et al. Inactivated influenza vaccine and spontaneous abortion in the Vaccine Safety Datalink in 2012–13, 2013–14, and 2014–15. Vaccine. 2019; 37(4):6673-6681. https://doi.org/10.1016/j.vaccine.2019.09.035

14) D J Trump, The White House. Executive Order on Modernizing Influenza Vaccines in the United States to Promote National Security and Public Health. September 19, 2019. https://www.whitehouse.gov/presidential-actions/executive-order-modernizing-influenza-vaccines-united-states-promote-national-security-public-health/

15) G Somlyai, et al. Naturally occurring deuterium is essential for the normal growth rate of cells. FEBS Lett. 1993; 317(1-2):1-4. doi: 10.1016/0014-5793(93)81479-j

16) E A Belongial, M T Osterholm. COVID-19 and flu, a perfect storm. Science. 2020; 368(6496):1163.(EDITORIAL) DOI: 10.1126/science.abd2220

17) L G Boros, et al. Deuterium and metabolic water matter – what this means biochemically and clinically. Science Advances. 2018; 4(8):eaat7314. https://advances.sciencemag.org/content/4/8/eaat7314/tab-e-letters

18) L G Boros, et al. Submolecular regulation of cell transformation by deuterium depleting water exchange reactions in the tricarboxylic acid substrate cycle. Med Hypotheses. 2016; 87:69-74. https://doi.org/10.1016/j.mehy.2015.11.016

19) M Lorizate, H-G Kräusslich. Role of Lipids in Virus Replication. Cold Spring Harb Perspect Biol. 2011 Oct; 3(10): a004820. doi: 10.1101/cshperspect.a004820

20) D V Chistyakov, et al. Deuterated Arachidonic Acids Library for Regulation of Inflammation and Controlled Synthesis of Eicosanoids: An In Vitro Study. Molecules. 2018; 23(12):3331. doi: 10.3390/molecules23123331

21) S E Dahlén, et al. Leukotrienes promote plasma leakage and leukocyte adhesion in postcapillary venules: in vivo effects with relevance to the acute inflammatory response. Proc Natl Acad Sci U S A. 1981;78(6): 3887-91. doi: 10.1073/pnas.78.6.3887

22) C D Funk, A Ardakani. A Novel Strategy to Mitigate the Hyperinflammatory Response to COVID-19 by Targeting Leukotrienes. Front Pharmacol. 2020; https://doi.org/10.3389/fphar.2020.01214

23) J A Chandrasekharan, N S-Walia. Arachidonic Acid Derived Lipid Mediators Influence Kaposi's Sarcoma-Associated Herpesvirus Infection and Pathogenesis. Front Microbiol. 2019; https://doi.org/10.3389/fmicb.2019.00358