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SUMMARY OF QUALIFICATIONS

Expert in nutrition, genomics and epigenomics, nutrigenomics/nutrigenetics, obesity, metabolic diseases (including liver), with extensive experience in research, study design and implementation, and scientific leadership. Proven ability to meet objectives, exceed expectations, and promote scientific innovation.

- Developed the most advanced nutrigenetic test, currently (2019) licensed to MAKO Medical Laboratories (US and Canada) and to SmartEpigenetX (Europe)
- Developed product pipelines for nutritional supplements, medical foods, and associated genetic testing;
- Developed nutrigenetic platforms and algorithms;
- Ensured requirements for FDA compliance, efficacy studies, and necessary IND and IRB documentation;
- Designed and led basic and clinical studies unraveling mechanisms involved in gene-nutrient interactions, metabolism, and maternal-child interactions;
- Designed and completed the first study establishing the epigenetic role of choline;
- Built and led teams (clinical and research) of up to 20 members;
- Mentored and taught students ranging from undergraduate to postdoctoral level;
- Expertise in the design, implementation, and interpretation of basic and translational studies, including clinical interventions using nutrients;
- Extensive publication and presentation record;
- Internationally recognized in the field of nutrient-gene interactions and nutritional epigenetics;
- Extensive expertise in reviewing scientific projects, including grant review for U.S. and abroad funding agencies;
- Ability to conceptualize, design and implement pioneering research and novel paradigms;
- Developed and licensed nutrigenetic tests and nutritional supplements with emphasis on personalized nutrition;

EDUCATION AND TRAINING

2001 – 2005 **Ph.D.**, Nutrition Biochemistry, University of North Carolina at Chapel Hill, NC, U.S.A.
2000 – 2001 Postdoctoral Fellow, Nutrition Biochemistry, University of North Carolina at Chapel Hill, NC, U.S.A.
1996 – 2000 Resident, Brasov County Hospital, Romania
1989 – 1995 **M.D.**, Carol Davila University of Medicine, Bucharest, Romania

PROFESSIONAL EXPERIENCE

Associate Professor **2017 - present**
Center for Genomic Medicine, “Victor Babes” University of Medicine and Pharmacy, Timisoara, Romania.

- Project director (principal investigator) for project “NutriGen”, funded with 2 M euros (European funds) through the Romanian Government.

Consulting in nutrition research, nutrigenomics & nutrigenetics **2014 - present**
Advanced Nutrigenomics LLC (www.advancenutrigenomics.com). Consulting services in nutrition research, product development and regulatory issues (medical foods and supplements), and in the development of nutrigenetic platforms.

Developed the nutrigenetic test Advanced NGx, the most complex and advanced nutrigenetic test on the market.

Acting Chief Scientific Officer (consultant) **2014 – 2016**
Nutrigene Sciences LLC (www.nutrigenesci.com). A startup company with UNC at Chapel Hill as vested partner. In charge with establishing the scientific mission and product development strategy around licensed IP. Actively participating to establishing the network required for VC investment and other funding opportunities. Developed its product pipeline on genetic testing and medical foods as treatment for metabolic imbalances and associated medical conditions.

Assistant Professor **2008 - 2015**
Department of Nutrition, Gillings School of Global Public Health at the University of North Carolina at Chapel Hill. Double appointment with the UNC Nutrition Research Institute at Kannapolis.

- Established a new line of research on the role of maternal nutrition and perinatal development, with emphasis on obesity, polyunsaturated fatty acids, polyphenols, brain development, and epigenetics.
- Employed modern research tools including systems biology approaches for the analysis of epigenomic, genomic, transcriptomic, and metabolomic data.
- Taught various nutrition courses to graduate students.
- Initiated, designed, and managed clinical research studies in collaboration with scientists within U.S. and abroad.
- Mentored graduate and post-doctoral students.

Research Assistant Professor **2006 - 2008**
Department of Nutrition, Gillings School of Global Public Health at the University of North Carolina at Chapel Hill.

- Collaborated with the principal investigator in designing and writing grant proposals, and implementing approved grants.
- Supervised and coordinate scientific activity within Zeisel Lab.
- Implemented new research techniques (laser-capture micro-dissection, statistical analysis for gene expression arrays and real-time RT-PCR, etc.).
- Supervised and coordinate graduate and undergraduate students, in collaboration with Steven H. Zeisel.

- Invited member in the dissertation committee for the PhD candidates within the UNC School of Dentistry.
- Taught nutrition courses to graduate students.

Research Associate	2005 - 2006
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Department of Nutrition, Gillings School of Global Public Health at the University of North Carolina at Chapel Hill.

- Designed and manage animal and cell culture studies with a research team.
- Developed assays using DNA-modifying techniques, gene expression using micro-arrays and polymerase chain reaction (PCR), protein expression and other molecular biology techniques.
- Managed and coordinated laboratory activity.
- Collaborated with the principal investigator in designing, writing and implementing approved grants and grant proposals.
- Taught nutrition courses to graduate students.

Postdoctoral Fellow	2000 - 2001
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Department of Nutrition, Gillings School of Global Public Health at the University of North Carolina at Chapel Hill.

- Conducted research on the effects of choline deficiency on fetal brain development.

Co-founder and Manager	1997 - 1999
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The MiroMedica Family Practice and Medical Laboratory, Brasov, Romania.

- Coordinated the activity of nine doctors and three staff members (family medicine, family planning, internal medicine, cardiology, psychiatry, ultra-sound, pathology, and biochemistry).
- Conducted medical activity.

Assistant Professor	1996 - 2000
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Transilvania University in Brasov, Romania, School of Medicine, Department of Human Physiology.

- Taught and designed selected courses in Human Physiology for medical students (Digestion, Excretion, Blood, Cardiovascular, and Neuro-endocrine systems).
- Taught and designed laboratory classes in Human Physiology.
- Directed student research; organized and hosted student research seminars.

HONORS & AWARDS

- 2003 The Graduate School UNC: Dean's Award for Graduate Student Research Benefiting North Carolina
- 2003 ASNS – Gerber Foundation Fellowship for Outstanding Research
- 2003 ASNS – Procter & Gamble Abstract Competition
- 2013 Delta Omega Alumni Award – UNC at Chapel Hill

MEMBERSHIPS

2003 – 2018	American Society of Nutrition (ASN)
2009 – 2012	Society for Neuroscience (SFN)
2017 – present	International Society for Nutrigenomics and Nutrigenetics (ISNN)

IN NEWS & MEDIA

Radio

2011 WFAE, Charlotte, NC: Charlotte Talks with Mike Collins, 02/25/2011: *Food In The Body*.

Press releases

2012 ScienceDaily & other news outlets (FASEB release): Epigenetics: Mother's nutrition - before pregnancy - may alter function of her children's genes.

<http://www.sciencedaily.com/releases/2012/09/120920140156.htm>

2016 Agerpress: (Romanian language) Precision nutrition now accessible in Romania.

<https://www.agerpres.ro/sanatate/2016/06/29/nutritia-de-precizie-accesibila-si-in-romania-18-12-25>

2017 Digi24: (Romanian language) A project unique worldwide in Timisoara.

<https://www.digi24.ro/regional/proiect-unic-in-lume-la-timisoara-727336>

Interviews

2012 Carolina Scientific: *Food for Thought: The Effect of Maternal Diet in Brain Development of Offspring* (Yurhee Lee reporting), 4(2), 18-19.

2012 BioTechniques: *How Diet Affects Genes: From Honeybees to Humans | Epigenetics Feature* (Janelle Weaver reporting), ahead of print:

<http://www.biotechniques.com/news/How-Diet-Affects-Genes-From-Honeybees-to-Humans--Epigenetics-Feature/biotechniques-332178.html?autnID=315662#.UC0W-KB2N8E>

2018 Look Medica Romania (in Romanian):

<https://www.facebook.com/TVLookmedica/videos/272833250033689/?t=42>

PUBLICATIONS

Peer Reviewed

1. **NICULESCU, M. D.** & ZEISEL, S. H. (2002) Diet, methyl donors and DNA methylation: interactions between dietary folate, methionine and choline. *J Nutr*, 132, 2333S-2335S.
2. **NICULESCU, M. D.**, YAMAMURO, Y. & ZEISEL, S. H. (2004) Choline availability modulates human neuroblastoma cell proliferation and alters the methylation of the promoter region of the cyclin-dependent kinase inhibitor 3 gene. *J Neurochem*, 89, 1252-9.
3. **NICULESCU, M. D.**, CRACIUNESCU, C. N. & ZEISEL, S. H. (2005) Gene expression profiling of choline-deprived neural precursor cells isolated from mouse brain. *Brain Res Mol Brain Res*, 134, 309-22.
4. **NICULESCU, M. D.**, CRACIUNESCU, C. N. & ZEISEL, S. H. (2006) Dietary choline deficiency alters global and gene-specific DNA methylation in the developing hippocampus of mouse fetal brains. *FASEB J*, 20, 43-9.
5. DA COSTA, K. A., **NICULESCU, M. D.**, CRACIUNESCU, C. N., FISCHER, L. M. & ZEISEL, S. H. (2006) Choline deficiency increases lymphocyte apoptosis and DNA damage in humans. *Am J Clin Nutr*, 84, 88-94.
6. ZEISEL, S. H. & **NICULESCU, M. D.** (2006) Perinatal choline influences brain structure and function. *Nutr Rev*, 64, 197-203.
7. **NICULESCU, M. D.**, DA COSTA, K. A., FISCHER, L. M. & ZEISEL, S. H. (2007) Lymphocyte gene expression in subjects fed a low-choline diet differs between those who develop organ dysfunction and those who do not. *Am J Clin Nutr*, 86, 230-9.
8. **NICULESCU, M. D.**, POP, E. A., FISCHER, L. M. & ZEISEL, S. H. (2007) Dietary isoflavones differentially induce gene expression changes in lymphocytes from postmenopausal women who form equal as compared with those who do not. *J Nutr Biochem*, 18, 380-90.
9. **NICULESCU, M. D.**, WU, R., GUO, Z., DA COSTA, K. A. & ZEISEL, S. H. (2007) Diethanolamine alters proliferation and choline metabolism in mouse neural precursor cells. *Toxicol Sci*, 96, 321-6.
10. RESSEGUIE, M., SONG, J., **NICULESCU, M. D.**, DA COSTA, K. A., RANDALL, T. A. & ZEISEL, S. H. (2007) Phosphatidylethanolamine N-methyltransferase (PEMT) gene expression is induced by estrogen in human and mouse primary hepatocytes. *FASEB J*, 21, 2622-32.
11. STRAUSS, K. A., MORTON, D. H., PUFFENBERGER, E. G., HENDRICKSON, C., ROBINSON, D. L., WAGNER, C., STABLER, S. P., ALLEN, R. H., CHWATKO, G., JAKUBOWSKI, H., **NICULESCU, M. D.** & MUDD, S. H. (2007) Prevention of brain

disease from severe 5,10-methylenetetrahydrofolate reductase deficiency. *Mol Genet Metab*, 91, 165-75.

12. CRACIUNESCU, C. N., **NICULESCU, M. D.**, GUO, Z., JOHNSON, A. R., FISCHER, L. & ZEISEL, S. H. (2009) Dose response effects of dermally applied diethanolamine on neurogenesis in fetal mouse hippocampus and potential exposure of humans. *Toxicol Sci*, 107, 220-6.
13. TINT, D., COCUZ, M. E., ORTAN, O. F., **NICULESCU, M. D.** & RADOI, M. (2009) Cardiac involvement in trichinellosis: a case of left ventricular thrombosis. *Am J Trop Med Hyg*, 81, 313-6.
14. **NICULESCU, M. D.** & LUPU, D. S. (2009) High fat diet-induced maternal obesity alters fetal hippocampal development. *Int J Dev Neurosci*, 27, 627-33.
15. MEHEDINT, M. G., **NICULESCU, M. D.**, CRACIUNESCU, C. N. & ZEISEL, S. H. (2010) Choline deficiency alters global histone methylation and epigenetic marking at the Re1 site of the calbindin 1 gene. *FASEB J*, 24, 184-95.
16. ZHANG, S., BARROS, S. P., **NICULESCU, M. D.**, MORETTI, A. J., PREISSER, J. S. & OFFENBACHER, S. (2010) Alteration of PTGS2 promoter methylation in chronic periodontitis. *J Dent Res*, 89, 133-7.
17. **NICULESCU, M.D.** & Lupu, D.S. (2011) Nutritional influence on epigenetics and effects on longevity. *Curr Opin Clin Nutr Metab Care*, 14(1):35-40.
18. **NICULESCU M.D.** (2011). Epigenetic transgenerational inheritance: Should obesity-prevention policies be reconsidered? *Synesis J*, 2, G18-26.
19. **NICULESCU M.D.**, LUPU D.S., & CRACIUNESCU C.N. (2011) Maternal α -linolenic acid availability during gestation and lactation alters the postnatal hippocampal development in the mouse offspring. *Int J Dev Neurosci*, 29, 795-802.
20. TINT D., LUPU D.S., FISCHER LM, & **NICULESCU M.D.*** (2011) Low dose flaxseed oil supplementation alters the fatty acids profile and the progression of metabolic syndrome in men without adequate medical treatment. *J Nutrition Disorder Ther*, S7, 1-8.
21. LUPU D.S., & **NICULESCU M.D.*** (2011) Epigenetic implications in rare diseases. *Rom J Rare Diseases*, 2, 10-20.
22. **NICULESCU M.D.** (2012) Challenges in nutrition-related DNA methylation studies. *BioMol Concepts*, 3(2), 151-160.
23. LUPU D.S., TINT D., & **NICULESCU M.D.*** (2012) Perinatal Epigenetic Determinants of Cognitive and Metabolic Disorders. *Aging and Disease*, (3)5, epub ahead of print.

24. TSANG V., FRY R.C., **NICULESCU M.D.**, RAGER J.E., SAUNDERS J., PAUL D.S., ZEISEL S.H., WAALKES M.P., STYBLO M., & DROBNA Z. (2012) The epigenetic effects of a high prenatal folate intake in male mouse fetuses exposed in utero to arsenic. *Toxicol Appl Pharmacol*, Aug 31, epub ahead of print.
25. **NICULESCU M.D.**, LUPU D.S., & Craciunescu C.N. (2012) Perinatal manipulation of α -linolenic acid intake induces epigenetic changes in maternal and offspring livers. *FASEB J*, Sep 20, epub ahead of print.
26. **NICULESCU M.D.** (2012) Nutritional Epigenetics. *ILAR J*, 53(3-4), 270-278.
27. Zhang S., Barros S.P., Moretti A.J., Yu N., Zhou J., Preisser J.S., **Niculescu M.D.**, Offenbacher S. (2013) Epigenetic Regulation of TNFA Expression in Periodontal Disease. *J Periodontol*, Jan 31, epub ahead of print.
28. Shafiee-Kermani S., Grusak M.A., Gustafson S.J., Lila M.A. & **Niculescu M.D.*** (2013) Lower Concentrations of Blueberry Polyphenolic-Rich Extract Differentially Alter HepG2 Cell Proliferation and Expression of Genes Related to Cell-Cycle, Oxidation and Epigenetic Machinery. *J Nutrition Disorder Ther*, 3:120, doi:10.4172/2161-0509.1000120.
29. Jackson F.L., **Niculescu M.D.**, Jackson R.T. (2013) Conceptual Shifts Needed to Understand the Dynamic Interactions of Genes, Environment, Epigenetics, Social Processes, and Behavioral Choices. *Am J Public Health*, 103 Suppl 1:S33-42.
30. da Costa K.A., Corbin K.D., **Niculescu M.D.**, Galanko J.A., Zeisel S.H. (2014) Identification of new genetic polymorphisms that alter the dietary requirement for choline and vary in their distribution across ethnic and racial groups. *FASEB J*, 28(7):2970-8.
31. **Niculescu M.D.** (2014) Alpha-linolenic acid alters cell cycle, apoptosis, and DNA methyltransferase expression in mouse neural stem cells, but not global DNA methylation. *J Hum Nutr Food Sci* 2(1): 1026.
32. He F., Lupu D.S., **Niculescu M.D.** (2014) Perinatal α -linolenic acid availability alters the expression of genes related to memory and to epigenetic machinery, and the Mecp2 DNA methylation in the whole brain of mouse offspring. *Int J Dev Neurosci*. 2014 May 24;36:38-44.
33. Lupu DS, Cheatham CL, Corbin KD, **Niculescu MD**. (2015) Genetic and epigenetic transgenerational implications related to omega-3 fatty acids. Part I: maternal FADS2 genotype and DNA methylation correlate with polyunsaturated fatty acid status in toddlers: an exploratory analysis. *Nutr Res*. 2015 Nov;35(11):939-47.
34. Cheatham CL, Lupu DS, **Niculescu MD**. (2015) Genetic and epigenetic transgenerational implications related to omega-3 fatty acids. Part II: maternal FADS2 rs174575 genotype and DNA methylation predict toddler cognitive performance. *Nutr Res*. 2015 Nov;35(11):948-55.

35. Zimbru CG, Andreescu N, Chirita-Emandi A, Stanciu A, Silea I, **Niculescu MD**, Puiu M. (2017) Splice site pattern analysis and identification of similar sequences in the deep intron areas of human chromosome 21. E-Health and Bioengineering Conference (EHB).
36. Zimbru CG, Andreescu N, Chirita-Emandi A, Stanciu A, Silea I, Puiu M, **Niculescu MD**. (2017) Analysis of decision tree performance in predicting the relationship between a scored outcome and multiple single nucleotide polymorphisms. E-Health and Bioengineering Conference (EHB).
37. Serafim V, Tiugan DA, Andreescu N, Mihailescu A, Paul C, Velea I, Puiu M, **Niculescu MD**. (2019) Development and Validation of a LC-MS/MS-Based Assay for Quantification of Free and Total Omega 3 and 6 Fatty Acids from Human Plasma. *Molecules*. 2019 Jan 20;24(2). pii: E360. doi: 10.3390/molecules24020360.
38. Șerban CL, Sima A, Hogeia CM, Chiriță-Emandi A, Perva IT, Vlad A, Albai A, Nicolae G, Putnoky S, Timar S, **Niculescu MD**, Puiu M. (2019) Assessment of Nutritional Intakes in Individuals with Obesity under Medical Supervision. A Cross-Sectional Study. *IJERPH*. 2019, Volume 16, Issue 17. doi: 10.3390/ijerph16173036.

Invited Editorials & Commentaries

1. **Niculescu, M.D.** (2010) Invited review on Nutrients and Epigenetics (Choi & Friso eds). In *American Journal of Human Biology*, 22(6), 856-857.
2. **NICULESCU M.D.** (2011) Invited editorial: Nutritional genomics: the need for a unified and comprehensive approach. *J Nutrition Disorder Ther*, 1(1), 1-2.
3. **Niculescu M.D.** (2013) Invited commentary: Pregestational nutrition and the epigenetic landscape in next generations: still an almost virgin land to be explored. *Epigenomics*, 5(1), 13-15.
4. **Niculescu M.D.** (2013) Invited editorial: NIH Grant Funding: Why Should it Change and How. *J Nutr Disorders Ther* 3:e104. doi:10.4172/2161-0509.1000e104.
5. **Niculescu M.D.** (2013) Invited editorial: Are We Ready for Personalized Dietary Guidelines? *Journal of Human Nutrition & Food Science*, 1(2), 1013.

Edited Books

1. *Nutrition in Epigenetics* (**MD Niculescu & P Haggarty**, Eds), Wiley-Blackwell, Hoboken. 2011. 332 pages. ISBN: 978-0-470-95980-0.

Book Chapters

1. Zeisel, S.H., **Niculescu, M.D.** (2005) Choline and Phosphatidylcholine. In *Modern Nutrition in Health and Disease* (M.E. Shils, M. Shike, A.C. Ross, B. Caballero, R.J. Cousins, eds) Lippincott Williams & Wilkins, Philadelphia, pp. 525-536.
2. **Niculescu, M.D.**, Zeisel, S.H. (2008) Choline and Neural Development. In *Nutrition in the Prevention and Treatment of Disease*, 2nd Edition (Coulston, A. and Boushey, C., Eds.) Elsevier Inc., Boston, pp. 241-251.
3. **Niculescu, M.D.** (2012) Choline and Brain Development. In *Nutrition in the Prevention and Treatment of Disease*, 3rd Edition (Coulston, A., Boushey, C. & Ferruzzi M. Eds.) Elsevier Inc., Boston, pp. 265-278.
4. **Niculescu, M.D.** (2013) Choline and Phosphatidylcholine. In *Encyclopedia of Human Nutrition*, 3rd Edition (Allen L., Prentice A., & Caballero B. Eds.), Elsevier Inc., Boston, pp. 346-351.
5. **Niculescu, M.D.** (in print) Epigenetic Impact of Nutrition. In *Encyclopedia of Human Biology*, 3rd Edition (Simon M.I. & Abelson J.N. Eds), Elsevier Inc., San Diego.
6. Andreescu N, Puiu M, **Niculescu M.D.** (2018) Effects of Dietary Nutrients on Epigenetic Changes in Cancer. In *Cancer Epigenetics for Precision Medicine* (Dumitrescu R & Verma M. Eds), Humana Press, Springer, ISBN 978-1-4939-8751-1.

PRESENTATIONS

Invited Lectures

- 2003 EB Meeting, San Diego, U.S.A.: *Choline deficiency inhibits cell proliferation and is associated with hypomethylation of CDKN3 promoter in IMR-32 cells.*
- 2008 Charlotte Biotechnology Conference: *Add this to the equation: Epigenetic Markers.* Charlotte, NC, U.S.A.
- 2010 NIH National Cancer Institute: *Maternal obesity alters cancer-related pathways in the offspring and induces epigenetic changes.* Bethesda, MD, U.S.A.
- 2011 BIT 2011 Conference: *Gestational obesity alters the development and the epigenetic status of fetal brain.* Xiamen, China.
- 2011 Appetite For Life Academy Seminar Series: *Eating for Two – The Healthy Way.* Kannapolis, NC, U.S.A.
- 2011 Obesity Conference 2011: Defining Best Practices for Obesity and Comorbidity Management. *When should obesity prevention start? An insight into the epigenetic roles of maternal nutrition.* Charlotte, NC, U.S.A.
- 2011 Oxford Round Table: Children's Health and Rights. *Rethinking Early Prevention of Obesity: The Role of Transgenerational Epigenetic Inheritance and the Need for*

Establishing Coherent Prevention Policies Spanning Multiple Generations. Oxford, UK.

- 2012 CLEPSO Meeting: *Nutritional Epigenetics and Brain Development: Potential Roles of Early Nutrition in the Delay of Pathological Aging*. Homburg, Germany.
- 2012 Max Planck Institute of Immunobiology and Epigenetics: *The roles of maternal genetics and epigenetics in defining the phenotype in the offspring: a combined approach*. Freiburg, Germany.
- 2012 NCRC Seminar Series: *The epigenetic role of alpha-linolenic acid in modulating PUFA metabolism in mother and offspring*. Kannapolis, North Carolina.
- 2012 Key-note speaker: Diaspora Conference in Scientific Research and Higher Education in Romania [Rom: Diaspora in Cercetarea Stiintifica Romaneasca si Invatamantul Superior]: *Rolul geneticii si epigeneticii materne in metabolismul copilului: cazul genei FADS2 (The roles of maternal Genetics and Epigenetics in children's metabolism: the case of the FADS2 gene)*. Bucharest, Romania.
- 2012 Mid-Atlantic NORC: *Alpha-linolenic acid and the genetic and epigenetic regulation of FADS2 expression: a reciprocal relationship across two generations*. University of Maryland School of Medicine, Baltimore, MD.
- 2015 ISNN Congress, Chapel Hill:
Genetic variations of one-carbon metabolism in health and disease. Panel discussion member.
- Workgroup: Tailoring Essential Fatty Acid Intakes*. Session leader and speaker.
- Nutriepigenomics for practical use*. Session leader and speaker.
- 2015 The National Congress of Medical Genetics, Romania: *Transgenerational nutrigenomics of polyunsaturated fatty acids metabolism: the mother-child connection*.
- 2015 The American Association of Pharmaceutical Scientists (AAPS), Orlando FL. *From Nutrigenetic Testing to Personalized Nutrition: When Challenges become Opportunities*.
- 2015 World Diabetes Congress, Vancouver, Canada: *Nutrition and epigenetics - diabetes prevention*.

REVIEWER ACTIVITIES

Grant Reviewer

- 2009 Phase I, NIH CSR (Challenge Grants in Health and Science Research, part of the American Recovery and Reinvestment Act of 2009).

- 2009 Medical Research Council (MRC), UK.
- 2010 KAUST (King Abdullah University of Science and Technology, Saudi Arabia).
- 2011 Biotechnology and Biological Sciences Research Council (BBSRC), UK.
- 2012 Phase I & II, NIH NCI (Research Answers to NCI's Provocative Questions).
- 2012 Medical Research Council (MRC), UK.
- 2013 Phase I & II, NIH NIEHS (ZES1 SET J(TG)), RFA ES12-006 & ES12-07, Transgenerational Inheritance in Mammals after Environmental Exposure (R21 and R01).
- 2013 Brooklyn College SCORE Program.
- 2013 The Netherlands Organization for Scientific Research (NWO) – The Netherlands.
- 2013 The Executive Agency for Higher Education, Research, Development and Innovation Funding (Romania).
- 2014 Qatar National Research Fund (QNRF).
- 2014 KAUST (King Abdullah University of Science and Technology, Saudi Arabia).
- 2014 DIABETES UK (UK).
- 2015 KAUST (King Abdullah University of Science and Technology, Saudi Arabia).
- 2015 NIH, Endocrinology, Metabolism, Nutrition and Reproduction Sciences (ZRG1 EMNR-W (10)), panel review member.
- 2016 Qatar National Research Fund (QNRF).
- 2017 Qatar National Research Fund (QNRF).
- 2018 Qatar National Research Fund (QNRF).

Journal Reviewer

AGE

Brain Research

British Journal of Nutrition

Canadian Journal of Physiology and Pharmacology

Central European Journal of Biology

Developmental Origins of Health and Disease

Diabetes, Obesity and Metabolism

DNA and Cell Biology

Ecology of Food and Nutrition

European Journal of Nutrition

Experimental and Molecular Pathology

Journal of Cellular Biochemistry

Journal of Health, Population and Nutrition

Journal of Neurochemistry

The FASEB Journal

The Journal of Nutrition

Journal of Nutritional Biochemistry

Molecular Carcinogenesis

Molecular Nutrition and Food Research

Nutrition Journal

Nutrition Research

PloS

Progress in Neuro-Psychopharmacology & Biological Psychiatry

Reviewer for Books & Chapters

1. Early-life epigenetic programming of human disease and aging, in *Epigenetics in Human Disease* (Tollefsbol, Ed), Elsevier, 2012.

RESEARCH SUPPORT

- 2005 – 2010 Co-Investigator (S. Zeisel, PI), Biochemistry of Supplemental Choline in Neonatal Rats, NIA.
- 2008 – 2010 **Principal Investigator**, Genistein Alters the DNA Methylation and the Phenotype of Mouse Neural Progenitors, UNC URC.
- 2008 – 2010 **Principal Investigator**, Maternal High-fat Diet Alters the Fetal Brain Development by Epigenetic Mechanisms, UNC CNRC.
- 2008 – 2010 **Principal Investigator**, Maternal Availability of α -Linolenic Acid During Lactation Alters Postnatal Brain Development, CECN-Mead Johnson.
- 2010 – 2015 **Lead Principal Investigator** of NRI Subcontract: Individualized Nutrition: Interactions Between Plant Food Consumption and Human Health Outcomes, USDA funded program to NCSU.
- 2016 – 2019 **Principal Investigator**, Use of nutrigenomic models for the personalized treatment with medical foods in obese people, University of Medicine and Pharmacy Victor Babes, Timisoara Romania (direct budget 2M euros from EU funds).
- 2018-2022 **Co-investigator**, STOP project, a Horizon 2020 project funded by the EU.

INTERNAL SERVICE

- 2009 – 2015 NCRC Institutional Animal Care and Use Committee (IACUC), Kannapolis, NC, U.S.A.
- 2009 – 2013 Member, Doctoral Committee, Nutrition Department, UNC at Chapel Hill, NC, U.S.A.
- 2010 NRI – UNC Department of Genetics search committee (member): tenure-track faculty recruitment
- 2010 NRI search committee (member): tenured faculty recruitment
- 2010 NRI – UNC Department of Nutrition search committee (member): research-track faculty recruitment
- 2011 UNC Nutrition Department, Marilyn Gentry Fellowship Search Committee (member)

- 2012 NRI – UNC Department of Nutrition search committee (member):
tenured faculty recruitment in epigenetics
- 2013 NRI – chair of the internal panel on Mission and Vision: A White Paper
containing the conclusions and the recommendations of the NRI
Mission Panel, in regard to the future development of NRI and its place
in the present and future scientific environment.

EXTERNAL SERVICE

Scientific Meetings

- 2011 Co-chair, Obesity section 6.2, BIT 2011, Xiamen, China.
- 2011 Panel member: Lost in Translation: A Conversation on Childhood Obesity,
Kannapolis, NC.
- 2011 Panelist, Maternal-Fetal Dyad Panel, Third Annual UNC-Duke African American
Economic Summit, Biological Consequences of Chronic Exposures to Social and
Economic Disadvantages, Chapel Hill, NC, U.S.A.
- 2012 Speaker Presenter, The Genetics of the Peoples of Africa and the Transatlantic
Africa Diaspora, Chapel Hill, NC, U.S.A.
- 2015 Organizing committee member, ISNN 2015 Congress, Chapel Hill, NC, U.S.A.
- 2018 Organizing committee member, ISNN 2019 Congress, Cambridge, UK.
- 2018 Organizing committee member, ISNN 2020 Congress, Timisoara, Romania (2020
edition)
- 2019 Coordinator of the ISNN work group on choline.

Editorial Boards

- 2010 – present Scientific Board Member, Romanian Journal of Rare Diseases
(<http://www.rjrd.ro/node/3>)
- 2012 – present Editorial Board member, Journal of Nutritional Biochemistry
http://www.elsevier.com/wps/find/journaleditorialboard.cws_home/525013/editorialboard
- 2013 – 2015 Editorial Board member, Journal of Human Nutrition & Food Science
<http://www.jscimedcentral.com/Nutrition/editors.php>

TEACHING & MENTORING

Didactic Course Work

- 1996 – 2000 **Human Physiology:** years I & II, School of Medicine, Transilvania University
in Brasov, Romania.
- 2004 NUTR 40 **Introduction in Human Nutrition** – UNC Chapel Hill, Niculescu
guest lecture on antioxidants.

- 2007 – 2008 NUTR 885 **Doctoral Seminar** – UNC Chapel Hill.
- 2007 NUTR 620 **Micronutrients** – UNC Chapel Hill, Niculescu guest lecture on B12, Folate, Choline, S-adenosylmethionine & DNA methylation.
- 2008 NUTR 868 **Nutrients and Disease: Brain Function and Development** – UNC Chapel Hill, Niculescu faculty leader on Choline and Brain.
- 2008 NUTR 845 **Nutrition Metabolism** – UNC Chapel Hill. Invited expert on Trans-generational epigenetics.
- 2008 – 2009 NUTR 862 **Epigenetics in Nutrition**, Nutrition Graduate Program, UNC.
- 2009 – 2010 NUTR 885 **Doctoral Seminar** – UNC Chapel Hill.
- 2011 – 2012 NUTR 845 **Nutrition Metabolism** – Nutrition Graduate Program, UNC Chapel Hill.
- 2011 – 2012 NUTR 620 **Micronutrients** – UNC Chapel Hill, Niculescu guest lecture on folate and epigenetics.
- 2012 – 2013 NUTR 862 **Epigenetics in Nutrition**, Nutrition Graduate Program, UNC.
- 2012 – 2013 NUTR 620 **Micronutrients** – UNC Chapel Hill, Niculescu guest lecture on folate and epigenetics.
- 2013 – 2014 NUTR 845 **Nutrition Metabolism** – Nutrition Graduate Program, UNC Chapel Hill.

Graduate Mentoring

- 2011 – 2014 **PhD Mentor**, Daniel Lupu, Nutrition, UNC
- 2011 – 2013 **MS Mentor**, Fuli He, Nutrition, UNC
- 2010 – 2012 **Postdoctoral Mentor**, Farideh Shafiee-Kermani, USDA-ARS at NC Research Campus, Kannapolis, NC, U.S.A.
- 2011 PhD Committee Member, Shaoping Zhang, Oral Biology, UNC
- 2011 MS Committee Member, Verne Tsang, Nutrition, UNC
- 2012 PhD Committee Member, Ya-Wen Teng, Nutrition, UNC
- 2012 PhD Committee Member, Amy Johnson, Nutrition, UNC
- 2014 PhD Committee Member, John Calaway, Genetics, UNC
- TBD PhD Committee Member, Kelly Will, Psychology, UNC
- 2014 MS Committee Member, Xiaomeng You, Nutrition, UNC

OTHER ACTIVITIES

Scientific Consultant

- Undisclosed companies