Rao M. Uppu, PhD, DABT, ATS
Professor of Environmental Toxicology (Tenured), Southern University-Baton Rouge (SUBR)
Program Leader, Environmental Toxicology PhD Program, SUBR
Director, Health Research Center, SUBR
Adjunct Professor of Chemistry, SUBR
Adjunct Professor of Pathobiological Sciences, LSU School of Veternary Medicine (Baton Rouge, LA)

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Citizenship: USA

A. Profile:

- Over twenty years of experience working at the interface of chemistry and toxicology with specific interest in the role(s) played by reactive oxygen species (endogenous as well as air-borne) and xenobiotics and their electrophilic intermediates in the etiology of degenerative diseases.
- Major accomplishments include—
  Modeling of oxidative and free radical reactions of ozone with proteins and lipids at the air/lung interface;
  Postulation of nitrocarbonate as an intermediate in the down-regulation of nitric oxide (•NO);
  Free radical nitration and nitrosation in •NO-producing biological systems;
  'Ozone-specific' oxysterols in early events of atherosclerosis, neuronal amyloid formation and apoptosis; and
  Analytical methods for biological reactive intermediates (epoxides, alloxan, and α,β-unsaturated carbonyls).
- Edited a book entitled, "**Free Radical and Antioxidant Protocols**" (Co-Editors: Subramanyam Murthy, Willam Pryor, and Narasimham Parinandi; ISBN: 978-1-58829-710-5; *Methods in Molecular Biology* series, vol. 610) for the Humana (now Springer) Press, Totowa, NJ.
- Named University-wide Research Professor of the Year 2007 (received commendations from the U.S. Senate) and received Chancellor's Award for Excellence in Teaching (2013)
- Distinguished educator and mentor for undergraduate (BS) and graduate (MS and PhD) students majoring in biology, chemistry and toxicology.
- A board-certified toxicologist of the American Board of Toxicology (DABT) and a Fellow of the Academy of Toxicological Sciences (Fellow ATS).
- Elected Fellow of the American Association for the Advancement Science (AAAS Fellow)

B. Academic Background:

Postdoctoral Fellow (Chemical Carcinogenesis) – July 1989 to May 1990; The Eppley Institute for Research in Cancer and Allied Diseases, University of Nebraska Medical Center (UNMC), Omaha, NE.

Postdoctoral Fellow/Sr. (Oxidative Chemistry and Biology) – September 1990 to July 1996; The Biodynamics Institute, Louisiana State University (LSU), Baton Rouge, LA.

PhD (Biochemistry) – 1988; National Institute of Nutrition (Indian Council of Medical Research)/Osmania University, Hyderabad, India.

Dissertation: **Redox Reactions of Nicotinamide Coenzymes in Aqueous Micellar Systems as Models for Enzymatic Hydride/Electron Transfer**

MSc (Biochemistry) – 1977; Andhra University Waltair, AP, India.

BSc (Chemistry) – 1975; The Hindu College, Machilipatnam, AP, India (Mathematics and Physics – minors).

C. Positions and Employment:

2014-present	Director, Health Research Center, Southern University, Baton Rouge, LA
2013-present	Director, Environmental Toxicology PhD Program, Southern University, Baton Rouge, LA
2010-present	Graduate/Doctoral Research Faculty-Level 2, Southern University, Baton Rouge, LA.
2008-present	Adjunct Professor of Pathobiological Sciences, School of Veterinary Medicine,

Louisiana State University, Baton Rouge, LA.
2007-present Adjunct Professor of Chemistry, Southern University, Baton Rouge, LA.
2007-present Professor of Environmental Toxicology (Tenured), Southern University, Baton Rouge, LA.
2002-07 Associate Professor (Tenure-Track), Southern University, Baton Rouge, LA.
2003-10 Graduate/Doctoral Research Faculty-Level 1, Southern University, Baton Rouge, LA.
2000-01 Patent Examiner, US Patent & Trademark Office, Alexandria, VA.
1996-00 Research Assistant Professor, Lousiana State University, Baton Rouge, LA.
1987-89 Lecturer in Biochemistry, Nizam's Institute of Medical Sciences (NIMS), Hyderabad, India.

D. Other Experience and Professional Memberships:

1980-1986 Member, Society of Biological Chemists-India (SBCI)
1982-1983 Member, Human Genetics Society of India (HGSI)
2002-present Member, American Association for Advancement of Science (AAAS)
2006-2012 Member, Society for Free Radical Biology and Medicine (SFRBM)
2004-present Member, Society of Toxicology (SOT)
2014-present Member, National Environmental Health Association (NEHA)

E. Awards and Honors:

2015- Elected Fellow of the American Association for the Advancement of Science (AAAS Fellow)
2015- Member, Faculty Senate Committee on Facilities, SUBR
2015- Member, CyHABs Research Consortium, Ames, IA
2014- Diplomate of the American Board of Toxicology (DABT; board certification)
2014- Senator, Faculty Senate, Southern University, Baton Rouge, LA
2013- Member, Chancellor's Advisory Committee on Intellectual Property, SUBR
2013- Elected Fellow of the Academy of Toxicological Sciences (Fellow ATS)
2013 Chancellor's Award for Excellence in Teaching, SUBR
2011 Southern University Business and Industry Cluster (BIC) Quality Award
2011 Telugu Association of North America (TANA) Excellence in Science Award
2010–14Editor (2010-12) and Editor-in-Chief (2012-14), *Journal of Diabetes & Metabolism* (JDM)
2010– Member, LBRN (NCRR IDeA) Peer Review Panel on Summer Graduate and Faculty Research Programs
2010 Chairperson, Neurodegenerative Disease, 49th Annual Meeting of SOT, Salt Lake City, UT
2010– Member, NSF Peer Review Panel on Drug Discovery and Development
2010 Editor, *Free Radical and Antioxidant Protocols. Second Edition* (ISBN: 978-1-58829-710-5) Methods in Molecular Biology, Vol. 610, Humana (now Springer) Press, Totowa, NY
2009 Distinquihed Researcher, Louisiana Biomedical Reseach (LBRN)/National Insitutes of Health (NIH)
2007 Co-Editor-in-Chief, *SMART Findings: An Undergraduate STEM Research Journal*
2007 Outstanding Research Investigator (University-wide), SUBR
2007 Faculty Researcher of the Year (Natural Sciences), College of Sciences, SUBR
2006 Outstanding Reseacher (Natural Sciences), College of Sciences, SUBR
2006 Chairperson, session on Gene Regulation, 45th Annual Meeting of SOT, San Diego, CA
2006 Associate Editor, *Journal of Alzheimer's Disease* (JAD)
2005 Chairperson, Biotransformation/Cytochrome P450, 44th Annual Meeting of SOT, New Orleans, LA

F. Research Experience and Training:

Academic and research training in the fields of oxidative and free radical reactions of ozone and nitrogen oxides, bioanalytical chemistry, bioorganic reaction mechanisms, multistep organic synthesis, nanomaterials, cell culture and signal transductions.

G. Teaching (since 2002):

Graduate (Environmental Toxicology)–

a. ENTX 725 Biochemical & Molecular Toxicology (fall)
b. ENTX 736 Special Topics (spring)
c. ENTX 737 Biochemical Methods (fall, spring, and summer)
d. ENTX 799 Research Practicum (fall, spring, summer)

e. ENTX 800 Dissertation Research (fall, spring, and summer)

H. Research Mentoring (since 2002):

Served as Major/Minor Advisor for fourteen PhD Graduates

Major Advisor (6) —

Sainath Babu, Dissertation: *An Integrated Approach to Understand Molecular Targets and Cellular Oxidative Stress Responses to Bisphenol A, A Xenoestrogen and Semipersistent Organic Pollutant in Urban Environments*; Year of Graduation: Summer 2012; Current Status: Research Assistant Professor at Hampton University, Hampton, VA.

Leroy K. Davis, Dissertation: *Engineering Cellulosic Bioreactors by Heterogeneous Expression of Plant Derived Glycosyl Hydrolase Genes: Evolution of A. thaliana Glycosyl Hydrolases by Template Assisted DNA Shuffling and In Vitro Recombination*; Year of Graduation: Spring 2012. Current Status: Postdoctoral research associate, Prairieville A&M College, Prairieville, Tx..

Laura Laynes, Dissertation: *Oxidative Stress Status and Related Mitogen-Activated Protein Kinase Signaling in Cardiomyocytes Exposed to 3β-Hydydroxy-5-oxo-5,6-secocholestan-6-al: Role of NADPH Oxidase System*; Year of Graduation: Spring 2011; Current Status: Assistant Professor of Environmental Sciences at Baton Rouge Community College (BRCC), Baton Rouge, LA.

Faruq Mohammad, Dissertation: *Luteinizing Hormone-Releasing Hormone Bound Core-Shell Magnetic Nanoparticles: Synthesis, Characterization and Studies of Hyperthermia-induced Cytotoxicity*; Year of Graduation: Spring 2011; Current Status: Postdoctoral Fellow at University Putra Malaysia, Serdang, Selangor 43400, Malaysia.

Xueli Gao, Dissertation: *Cytotoxicity and Inflammatory Potential of Cholesterol Secoaldehyde: A Cell-Based Mechanistic Study of a Putative Ozone-Specific Oxysterol with Implications for Cardiovascular Disease*; Year of Graduation: Fall 2009; Current Status: Postdoctoral Fellow at the West Virginia University Center for Neuroscience, Morgantown, WV.

Catrina Dupard-Julien, Dissertation: *Development of Analytical Methods for Determination of Electrophilic Intermediates in Biological Fluids*; Year of Graduation: Fall 2008; Current Status: Lab Coordinator at the Our Lady of the Lake College, Baton Rouge, LA.

Minor Advisor (8)—

Lulit Affin, Dissertation: *Nanosilver Impregnated Activated Carbon/Polyurethane Foam Composite for Water Filtration*; Year of Graduation: fall 2015 (successfully defended the dissertation research)

Philip Jones, Dissertation: *Photoinduced Toxicity of Engineered Nanomaterials*; Year of Graduation: Spring 2013; Current Status: Postdoctoral Fellow at University of Washington, Seattle, WA.

Brian Bourgeois, Dissertation: *Characterization and Cytotoxicity of PM2.5 Collected in the Baton Rouge-Port Allen Corridor*; Year of Graduation: Fall 2011**.**

Christopher Sparrow, Dissertation: *A Novel Group of Quaternary Ammonium Salts as Ionic Liquids and Deep Eutectic Solvents*; Year of Graduation: Spring 2011; Current Status: Assistant Professor of Chemistry at Texas College, Taylor, TX.

Shireesha Sankella, Dissertation: *Characterization of the Mechanism of Phytoestrogen Responsive Gene Expression at Chromatin Level*; Year of Graduation: Summer 2009; Current Status: Postdoctoral Fellow at UT Southwestern, Dallas, TX.

Sowmya Koppula, Dissertation: *Biochemical and Molecular Effects of Butadiene Diepoxide in Prostate Cancer Cells*; Year of Graduation: Summer 2009.

Rajasree Solipuram, Dissertation: *Regulation of Steroid 5-α-Reductase Type II Gene Expression by Phytoestrogens in Prostate Cancer Cells*; Year of Graduation: Fall 2008; Current Status: Postdoctoral Fellow at Pennington Biomedical Research Center (PBRC), Baton Rouge, LA.

Sridevi Yadaville, Dissertation: *Cellular and Molecular Mechanisms Mediating 1,3-Butadience Induced Cytotoxicity in Human Lymphoblasts*; Year of Graduation: Spring 2005; Current Status: Postdoctoral Fellow at Children's National Medical Center, Washington, DC.

Served as Major/Minor Advisor for Three MS Graduates

Teresa T. Mutahi, Thesis: *Hypochlorous Acid-Mediated Oxidative Modifications of a Protein Nitrotyrosine Model, N-Acetyl-L-3-nitrotyrosine Ethyl Ester: Significance to Biomarker Discovery*; Year of Graduation:

Spring 2012 (major advisor); Current Status: Doctoral Student, Science and Mathematics Education PhD program, Southern University, Baton Rouge, LA.

Brittany C. Martin, Thesis: *Biotransformation of Bisphenol A, an Environmental Xenoestrogen, by Cellular Oxidants*; Year of Graduation: Spring 2012 (minor advisor); Current Status: Doctoral Student, Science and Mathematics Education PhD program, Southern University, Baton Rouge, LA.

Ardrene D. Ferguson; Thesis: *A Study of Peroxynitrite Oxidation of Methionine and Methionine-Containing Di- and Tripeptides*; Year of Graduation: Summer 2011 (minor advisor); Current Status: Environmental Scientist, LDEQ Water Permits Division, Baton Rouge, LA.

Currently Serving as Chair/Member/Major Professor for the Following MS/PhD Students

Name of the Student	Masters/Doctoral	Chair/ Member	Year of Graduation/ Institution
1. James Hines	Doctoral	Chair	Spring 2016/SUBR*
2. Curtstine Deere	Doctoral	Chair	Fall 2016/SUBR*
3. Ogad Agu	Doctoral	Chair	Fall 2016/SUBR*
4. Joy Sporlock	Doctoral	Chair	Spring 2016/SUBR*
5. Chintan Pathak	Doctoral	Major Prof	Spring 2017/SUBR**
6. Swathi Kasibhatla	Doctoral	Major Prof	Fall 2019/SUBR**
7. Rakeysha Pinkston	Doctoral	Major Prof	Fall 2020/SUBR**

* Tentative; ** Tentative but do not have a committee in place

Served on Thesis Adjudication Committees of Five PhD/DSc Graduates (International)

A. Ramesh, DSc (Medicine-Medical Specialties), Thesis: *Specification of Environmental Pollutants – New Analytical Methods*; Year of Graduation: 2009; The Tamil Nadu Dr. M.G.R. University, Chennai, India.

R. Shanmugasundaram, PhD (Toxicology; pending final approval)), Thesis: *Acute, Reproduction and Genotoxicity of Certain Soil Applications Agrochemicals to the Earthworm, Eisenia* fetida; Year of Graduation: 2016; University of Madras, Chennai, India.

M. Yogananda, PhD (Zoology-Toxicology), Thesis: *Effect of Organochlorine Pesticide Lindane on Neuroendocrine Control of Reproduction in the Male Catfish Heteropneustes fossilis*; Year of Graduation: 2006; Madras University, Chennai, India.

V. Gayatri, PhD (Zoology-Toxicology), Thesis*: Studies on Certain Biochemical Parameters, Knockdown Resistances Gene and Antennal Response in Anopheles stephensi Liston (Diptera: Culicidae) Induced for Deltamethrin Resistance*; Year of Graduation: 2005; University of Madras, Chennai, India.

V.V. Sangeeta, PhD (Molecular Biology-Toxicology), Thesis: *Molecular Gene Expression Studies in Indian Patients with Sporadic Meningioma*; Year of Graduation: 2005; University of Madras, Chennai, India.

. **Postdoctoral Fellows—**

Mentored Five Postdoctoral Fellows in Areas of Chemical and Molecular Toxicology

Faruq Mohammad, PhD (Environmental Toxicology), August 2011 to December 2011; currently working as Postdoctoral Researcher at University Putra Malaysia, Serdang, Selangor 43400.

Achuthan C. Raghavamenon, PhD (Biochemistry), January 2007 to August 2011; currently working as Associate Professor of Biochemistry at the Amala Institute of Medical Sciences, Thrisssur, Kerala, India.

K. Sathishkumar, PhD (Veterinary Pharmacology), December 2004 to March 2007; currently working as Assistant Professor at the University of Texas Medical Branch, Galveston, TX.

Thirugnanam Perumal, PhD (Organic Chemistry), January 2005 to April 2006; currently working as Senior Scientist at the International Institute for Biotechnology and Toxicology, Padappai, Tamil Nadu, India.

Bhaskarachary Kandlakunta, PhD (Biochemistry), December 2002 to July 2004; currently a senior Scientist at the National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, Telangana, India.

Mentoring Prior to the Year 2000 (in India)— While working at the Nizam's Institute of Medical Sciences (NIMS; January 2007-March 1989) and subsequently at LSU (August 1996-September 2000), mentored numerous undergraduate (BS) and graduate (MS/PhD) students in biochemistry and environmental sciences, supervised part-time and full-time Lab Techs, and interacted with fellow postdoctoral researchers. Also, in collaboration with Dr. U.N. Das, had an opportunity to set up a state-of-the-art laboratory for research in biomedical sciences and recruited the first ten doctoral research students at NIMS.

I. Refereed Publications:

1. B.K. London, M.O. Fletcher Claville, S. Babu, F.R. Froenczek, and **R.M. Uppu**, (2015). A co-crystal of nonahydrated disodium(II) with mixed anions from m-chlorobenzoic acid and furosemide. *Acta Crystallographic Communications* **E 71**, 1266-1269 (suppl. 1-8).
2. *S. Babu, S.N. Uppu, O. Agu, and* **R.M. Uppu** (2015). Unusually high levels of bisphenol A (BPA) in thermal paper cash register receipts (CRs): development and application of a robust LC-UV method to quantify BPA in CRs. *Toxicol. Mech. Methods*. 29, 1-7.
3. F. Mohammad, A.C. Raghavamenon, M.O. Claville, C.S. Kumar, and **R.M. Uppu** (2014). Targeted hyperthermia-induced cancer cell death by superparamagnetic iron oxide nanoparticles conjugated luteinizing hormone-releasing hormone. *Nanotechnol Rev*. **3**, 389-400; doi: 10.1515/ntrev-2013-0041.
4. S. Babu, S. Uppu, M.O. Claville, and **R.M. Uppu** (2013). Prooxidant actions of bisphenol A (BPA) phenoxyl radicals: implications to BPA-related oxidative sress and toxicity. *Toxicol. Mech. Methods* **23***,* 273-80; doi: 10.3109/15376516.2012.753969.
5. B.V. Babu, V.K. Chaturvedi, and **R.M. Uppu** (2012). Herbs in the management of hyperglycemia in diabetes. Importance of screening methods in the identification of phyto anti-hyperglycemic principles. *J. Diabetes Metab* **3**: e110; doi:10.4172/2155-6156.1000e110.
6. S. Babu, V. Nadeem, A.V. Kasibotla, H.J. Dwayne, M.A. Stubblefield, and **R.M. Uppu** (2012). Molecular docking of bisphenol A and its nitrated and chlorinated metabolites onto human estrogen-related receptor-gamma. *Biochem. Biophys. Res. Commun*. **426**, 215-220 ; doi : 10.1016/j.bbrc.2012.08.065.
7. T.T. Mutahi, B.J. Edagwa, F.R. Fronczek, and **R.M. Uppu** (2012). N-Acetyl-5-chloro-3-nitro-L-tyrosine ethyl ester. *Acta Cryst. E*. **68**, o2810–o2811, Suppl. 1-8; doi:10.1107/S1600536812036380
8. D.B. Casey, E.A. Pankey, A.M. Badejo, Jr., F.R. Bueno, Jr., M. Bhartiya, S.N. Murthy, **R.M. Uppu**, B.D. Nossaman, and P.Kadowitz (2012). Peroxynitrite has potent pulmonary vasodilator activity in the rat. *Can J. Physiol. Pharmacol*. **90**, 485-500.
9. **R.M. Uppu** and N.L. Parinandi (2011). Insulin sensitization and resistance interreationships revised with a quantitative molecular model approach. *J. Diabet. Metab.* **2**, 6; doi:10.4172/2155-6156.1000106e
10. S. Babu, C. Pathak, S. Uppu, C,. Jones, F.R. Fronczek, and **R.M. Uppu** (2011). 3,3'-Dinitrobisphenol A. *Acta Crystallogr. E*. **67**, 2556-2557; Suppl. 1-21.
11. L. Laynes, A.C. Raghavamenon, O. D'Auvergne, V. Achuthan, and **R.M. Uppu** (2011). MAPK signaling in H9c2 cardiomyoblasts exposed to cholesterol secoaldehyde – Role of hydrogen peroxide. *Biochem. Biophys. Res. Commun*. **404**, 90-95.
12. S. Babu, C. Pathak, S. Uppu, C. Jones, F.R. Fronczek, and **R.M. Uppu** (2010). Crystal structure of 3,3 '-dinitrobisphenol. *Free Radic. Biol. Med.* **51**, S150-S151.
13. A.C. Raghavamenon, A.F. Muyiwa, L.K. Davis, and **R.M. Uppu** (2011). Dihydroartemisinin induces caspase-8-dependent apoptosis in murine GT1-7 hypothalamic neurons. *Toxicol. Mech. Methods.* **21**, 367-373; doi: 10.3109/15376516.2011.552534.
14. F. Mohammad, G. Balaji, A. Weber, **R.M. Uppu**, and C.S. Kumar (2010). Influence of gold nanoshell on hyperthermia of super paramagnetic iron oxide nanoparticles (SPIONs). *J. Phys. Chem. C* **114**, 19194–19201 (cited 50 times as of February 14, 2015).
15. K. Sathishkumar, X. Gao, A.C. Raghavamenon, S.N. Murthy, P.J. Kadowitz, and **R.M. Uppu** (2010). Determination of glutathione, mitochondrial transmembrane potential, and cytotoxicity in H9c2 cardiomyoblasts exposed to reactive oxygen and nitrogen species. *Methods Mol. Biol.* **610**, 51-61.
16. K. Sathishkumar, A.C. Raghavamenon, K. Ganeshkumar, R. Telaprolu, N.L. Parinandi, and **R.M. Uppu** (2010). Simultaneous analysis of multiple redox-sensitive and apoptotic gene expression in hypothalamic neurons exposed to cholesterol ozonation products. *Methods Mol. Biol*. **610**, 263-284.
17. F. Mohammad, S. Babu, A.C. Raghavamenon, C.S. Kumar, K.G. Kousoulas, and **R.M. Uppu** (2010). Hyperthermia-mediated cell death in murine GT1-7 hypothalamic neurons and human LnCap prostate carcinoma cells exposed to nanoparticles of SPIONs@Au-cysteamine-LHRH. *Free Radic. Biol. Med.* **49**, S72-S72.
18. E.S. O'Connor Butler, J.N. Mazerik, J.P. Cruff, S.I. Sherwani, B.K. Weis, C.B. Marsh, A.C. Raghavamenon, **R.M. Uppu**, H.O. Schmid, and N.L. Parinandi (2010). Lipoxygenase-catalyzed phospholipid peroxidation: Preparation, purification, and characterization of phosphatidylinositol peroxides. *Methods Mol. Biol*. **610**, 387-401.
19. M.A. Kline, E.S. O'Connor Butler, A. Hinzey, S. Sliman, S.R. Kotta, C.B. Marsh, **R.M. Uppu**, and N.L. Parinandi (2010). A simple method for effective and safe removal of membrane cholesterol from lipid rafts in vascular endothelial cells: Implications in oxidant-mediated lipid signaling. *Methods Mol. Biol*. **610**, 201-211.

20. V. Panguruli, S.Z. Yang, E. Khosravi, S. Babu, L. Laynes, A.C. Raghavamenon, and **R.M. Uppu** (2010). Docking of apocynin, 5-nitroapocynin, and diapocynin with 1K4U subsection of human neutrophil NADPH oxidase System. *Free Radic. Biol. Med.* **49**, S203-S203.
21. X . Gao, A.C. Raghavamenon**,** O. D'Auvergne, and **R.M. Uppu** (2009). Cholesterol secoaldehyde induces apoptosis in J774 macrophages via mitochondrial pathway but not involving reactive oxygen species as mediators. *Biochem. Biophys. Res. Commun*. **389**, 382-387.
22. S. Babu, A.C. Raghavamenon, F.R. Fronczek, and **R.M. Uppu** (2009). 4-Hydroxy-3-methoxy-5-nitroaceto-phenone (5-nitroapocynin). *Acta Cryst. E* **65**, 2292-2293, Supl. 1-10.
23. A.C. Raghavamenon, C.J. Dupard, B. Kandlakunta, and **R.M. Uppu** (2009). Determination of alloxan by fluorometric, reversed-phase HPLC. *Toxicol. Mech. Methods*. **19**, 498-502.
24. **R.M. Uppu**, C. Jones, and F.R. Fronczek (2009). Crystal structure of 5-nitroapocynin. *Free Radic. Biol. Med*. **47**, S156-S156.
25. A.C. Raghavamenon, C.L. Dupard-Julien, B. Kandlakunta, and **R.M. Uppu** (2009). Subpicomole determination of alloxan in biological fluids by fluorometric high-performance liquid chromatography. *Free Radic. Biol. Med.* **47**, S87-S87
26. A.C. Raghavamenon, R. Gernapudi, S. Babu, O. D'Auvergne, S.N. Murthy, P.J. Kadowitz, and **R.M.Uppu** (2009). Intracellular oxidative stress and cytotoxicity in rat primary cortical neurons exposed to cholesterol secoaldenyde. *Biochem.Biophys. Res.Commun*. **386**, 170-174.
27. K. Sathishkumar, X. Gao, A.C. Ragavamenon, N.L. Parinandi, W.A. Pryor, and **R.M. Uppu** (2009). Cholesterol secoaldehyde induces apoptosis in cardiomyocytes through reactive oxygen species involving mitochondrial and death receptor pathways. *Free Radic. Biol. Med.* **47,** 548-558 (cited 20 times as of February 14, 2015).
28. L.K. Davis, A.F. Muyiwa, X. Gao, A.C. Raghavamenon, and **R.M. Uppu** (2008). Apoptosis in murine hypothalamus neurons exposed to dihydroartemisinin: Possible role of the extrinsic pathway. *J. Neurochem.* **104**, 22-22
29. K. Sathishkumar, S.N. Murthy, and **R.M. Uppu** (2007). Cytotoxic effects of oxysterols produced during ozonolysis of cholesterol in murine GT1-7 hypothalamic neurons. *Free Radic. Res*. **41**, 82-88 (cited 20 times as of February 14, 2015).
30. K. Sathishkumar, X. Xi, R.J. Martin, and **R.M. Uppu** (2007). Cholesterol secoaldehyde induces amylodogenesis and apoptosis in murine GT1-7 hypothalamic neuronal cells. *J. Alzheimer's. Dis*. **11**, 261-274 (cited 22 times as of February 14, 2015).
31. **R.M. Uppu**, B.D. Nossaman, A.J. Greco, A. Fokin, S.N. Murthy, V. Fonseka, and P.J. Kadowitz (2007). Cardiovascular effects of peroxynitrite. *Clin. Exp. Pharmacol*. *Physiol.* **34**, 933-937 (cited 33 times as of February 14, 2015).
32. C.-J. Dupard, B. Kandlakunta, and **R.M. Uppu** (2007). A reversed phase HPLC method for the determination of epoxides of 1,3-butadiene and other petrochemical alkenes. *Anal. Bioanal. Chem*. **387**, 1027-1032.
33. K. Sathishkumar, V. Rangan, X. Gao, and **R.M. Uppu** (2007). Methyl vinyl ketone induces apoptosis in murine GT1-7 hypothalamic neurons through glutathione depletion and the generation of reactive oxygen species. *Free Radic. Res*. **41**, 469-477.
34. **R.M. Uppu** (2006). Synthesis of peroxynitrite using isoamyl nitrite and hydrogen peroxide in a homogeneous solvent system. *Anal. Biochem*. **354**, 165-168 (cited 28 times as of February 14, 2015).
35. K. Sathishkumar, X. Gao, and **R.M. Uppu** (2006). Cholesterol secoaldehyde, a cholesterol oxidation product, induces intracellular amyloid aggregation and apoptosis: Implications for Alzheimer's disease. *Free Radic. Biol. Med.* **41** (Suppl 1), S168-S168.
36. R. Cong, E. Tamyanko, P.S. Russo, N. Edwin, and **R.M. Uppu** (2006). Dynamics of poly(styrenesulfonate) in sodium salt in aqueous solution. *Macromolecules* **39**, 731-739 (cited 23 times as of February 14, 2015).****
37. K. Sathishkumar, M. Haque, T.E. Perumal, J. Francis, and **R.M. Uppu** (2005). A major ozonation product of cholesterol, 3β-hydroxy-5-oxo-5,6-secocholestan-6-al, induces apoptosis in H9c2cardiomyoblasts. *FEBS Lett*. **579**, 6444-6450 (cited 35 times as of February 14, 2015).
38. **R.M. Uppu**, K. Sathishkumar, and T. Perumal (2005). Reactions of peroxynitrite and peroxynitrite/CO_2 with clozapine: evidence for the formation of electrophilic intermediates. *Free Radic. Biol. Med.* **39** (Suppl 1), S15-S15.
39. T. Perumal, K. Sathishkumar, and **R.M. Uppu** (2005). A reversed phase HPLC method for determination of methyl vinyl ketone and other α,β-unsaturated carbonyl compounds in biological samples. *Free Radic. Biol. Med.* **39** (Suppl 1), S113-S113.
40. V. Rangan, K. Sathishkumar, and **R.M. Uppu** (2005). Cytotoxicity of methyl vinyl ketone, an α,β-unsaturated carbonyl compound, in murine GT1-7 hypothalamic neuronal cells. *Free Radic. Biol. Med.* **39** (Suppl 1), S147-S147.

41. K. Sathishkumar, X. Xi, T. Perumal, R.J. Martin, and **R.M. Uppu** (2005). Cholesterol secoaldehyde induces amyloidogenesis and apoptosis in murine GT1-7 hypothalamic neuronal cells. *Free Radic. Biol. Med.* **39** (Suppl 1), S147-S148.
42. B. Kandlakunta and **R.M. Uppu** (2004). A fluorimetric reversed phase HPLC method for the determination of alloxan in biological samples. *Diabetes* **54** (Suppl 2), A585-A586.
43. **R.M. Uppu**, G.L. Squadrito, R.M. Bolzan, and W.A. Pryor (2000). Nitration and nitrosation by peroxynitrite: Role of CO_2 and evidence for common intermediates. *J. Am. Chem. Soc*. **122**, 6911-6916 (cited 44 times as of February 14, 2015).
44. G.L. Squadrito, R. Cueto, A.E. Splenser, A. Valvanidis, H. Zhang, **R.M. Uppu**, and W.A. Pryor (2000). Reaction of uric acid with peroxynitrite and implications for the mechanisms of neuroprotection by uric acid. *Arch. Biochem. Biophys*. **376**, 333-337 (cited 224 times as of February 14, 2015).
45. **R.M. Uppu** and W.A. Pryor (1999). Nitrosation of 1,2-phenylenediamine by peroxynitrite/CO_2. Evidence for a free radical mechanism. *J. Am. Chem. Soc*. **121**, 9738-9739 (cited 42 times as of February 14, 2015).
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*Articles 73 to 76 were published with author's first name as per the tradition in India.

J. Presenations at Regional, National and International Meetings (partial list; since 2004):

1. B.K. London, M.O.F. Claville, S. Babu, F.R. Froenczk, and **R.M. Uppu**, "Structural analysis of pharmacological co-crystals of furosemide", *55th Annual Meeting of the Society of Toxicology*, New Orleans, LA, March 13-17, 2016 (accepted).
2. S. Babu, A.D. Logan, L. Tucker, K. Windham, **R.M. Uppu**, M.O.F. Claville, "Hypochlorite/hypochlorous acid-mediated oxidation of methionyl tripeptides", *55th Annual Meeting of the Society of Toxicology*, New Orleans, LA, March 13-17, 2016 (accepted).
3. B.V. Bassa and **R.M. Uppu**, "Living fossils of vertebrates are also molecular fossils as revealed by a newly developed alignment-free sequence comparison algorithm", *International Journal of Arts and Sciences' Conference*, Las Vegas, NV, March 16-20, 2015.
4. S.J. Berryhill, Y. Akpamagbo, A. Fennoy, D. Oliver, S. Babu, M.O. Claville, and **R.M. Uppu**, "Free radical oxidation of methionine and methionyl-containing peptides", *2014 Emerging Researchers National Conference in STEM*, Washington, DC, February 20-22, 2014.
5. S. Babu and **R.M. Uppu**, "Detection of methyl radicals in the gas phase chemistry of phenoxyl radical cations of bisphenol-A (BPA) and its metabolites: A missing link in BPA-induced epigenetic imprinting", *54th Annual Meeting of the Society of Toxicology*, San Diego, VA, March 22-26, 2015.
6. S.N. Uppu, O. Agu, J.E. Hines, S,N. Murthy, and **R.M. Uppu**, "Ozone-mediated oxidation of acesulfame potassium: An option for waste water treatment", *54th Annual Meeting of the Society of Toxicology*, San Diego, VA, March 22-26, 2015.

7. N.E. Hines, S.N. Uppu, O. Agu, T. Hicks, S.N. Murthy, and **R.M. Uppu**, "A modified Molisch test for bisphenol A and crystal violet lactone in cash receipts", *54th Annual Meeting of the Society of Toxicology*, San Diego, VA, March 22-26, 2015.
8. J. Burton, S. Babu, A. Nzesi, **R.M. Uppu**, and M.O. Claville, "Synthesis and characterization of N-acetylated methionyl dipeptides", *71st Joint Annual Meeting of the National Institute of Science/Beta Kappa Chi*, Houston, TX, March 12-16, 2014.
9. S.J. Berryhill, S. Babu, Y. Akpamagbo, D. Oliver, **R.M. Uppu**, and M.O. Claville, "Biochemical oxidation of methionine-glycine: A model for single-electron oxidation in methionyl proteins", *71st Joint Annual Meeting of the Institute of Science/Beta Kappa Chi*, Houston, TX, March 12-16, 2014.
10. B. London, M. O. Claville, F. R. Fronczek, and **R. M. Uppu**, "A cocrystal of *m*-chlorobenzoic acid with furosemide: Prospective applications", *53rd Annual Meeting of the Society of Toxicology*, Phoenix, AZ, March 24-27, 2014.
11. S. Babu, F. Jaetae Seo, **R. M. Uppu**, and M. O. Claville, "Aggregation of gold nanoparticles with thioether-containing amino acids", *53rd Annual Meeting of the Society of Toxicology*, Phoenix, AZ, Mar24-27, 2014.
12. S. Khiste, S. Batra, S. Jeyaseelan, K. Challa, S. N. Murthy, and **R. M. Uppu**, "Uptake, internalization, and quantification of LHRH-tagged, gold-coated super paramagnetic iron oxide nanoparticles in cancerous MCF-7 cells", *53rd Annual Meeting of the Society of Toxicology*, Phoenix, AZ, March 24-27, 2014.
13. **R.M. Uppu**, "Molecular dynamic simulation studies of bisphenol A and its analogs with estrogen related receptor-gamma and human androgen receptor", *53rd Annual Meeting of the Society of Toxicology*, Phoenix, AZ, March 24-27, 2014.
14. S. Khiste, S. Batra, S. Jeyaseelen, C.S. Kumar, and **R.M. Uppu**, "Uptake, internalization and quantitation of LHRH tagged gold coated super paramagnetic iuron oxide in cancerous MCF-7 cells", *31st Annual Meeting of South Central Chapter of the Society of Toxicology*, Baton Rouge, LA, October 10-11, 2013.
15. S.N. Uppu, J.E. Hines, O. Agu, S.N. Murthy, and **R.M. Uppu**, "Ozone-mediated oxidation of acesulfame potassium: An option for waste water treatment", *31st Annual Meeting of South Central Chapter of the Society of Toxicology*, Baton Rouge, LA, October 10-11, 2013.
16. B. London, M. O. Claville, F. R. Fronczek, and **R. M. Uppu**, "A cocrystal of *m*-chlorobenzoic acid with furosemide: Prospective applications", *31st Annual Meeting of South Central Chapter of the Society of Toxicology*, Baton Rouge, LA, October 10-11, 2013.
17. F. Mohammad, S. Khiste, A.C. Raghavamenon, M.O. Claville, S.S. Kumar, and **R.M. Uppu**, "Targeted hyperthermia-induced cancer cell death by super paramagnetic iron oxide nanoparticles conjugated to luteinizing hormone-releasing hormone", *Southern University Student Research Symposium*, Baton Rouge, LA, April 24, 2013.
18. Y. Akpamagbo, S. Babu, M.Waddell, **R.M Uppu**, and M.O Claville, "Hypocholorous acid mediated oxidation of methionine and methionyl peptides", *70th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science*, Reston, VA, March 13-17, 2013.
19. A.V. Kasibotla, S. Babu, M.O. Claville, M.A. Stubblefield, and **R.M. Uppu**, "Understanding the environmental and health impact of bisphenols", *Southern University Student Research Symposium*, Baton Rouge, LA, April 24, 2013.
20. D. Falodun , C. Deere, A.V. Kasibotla, and **R.M. Uppu**, "Robust RP-HPLC method for analysis of styrene oxide in styrofoam packing and building materials and dinnerware", *Southern University Student Research Symposium*, Baton Rouge, LA, April 24, 2013.
21. T.T. Mutahi, B.J. Edagwa, and **R.M. Uppu**, "Novel biomarkers for measurement of oxidative stress status", *Southern University Student Research Symposium*, Baton Rouge, LA, April 24, 2013.
22. D. Falodun and **R.M. Uppu**, "Determination of styrene oxide by reversed phase, high-performance liquid chromatography following derivatization with N,N-diethyldithocarbamate", *51st Annual Meeting of the Society of Toxicology*, San Antonio, TX, March 10-14, 2013.
23. T.T. Mutahi, B.J. Edagwa, F.R. Fronczek, and **R.M. Uppu**, "Synthesis and crystal structure of N-acetyl-5-chloro-3-nitro-L-tyrosine ethyl ester", *51st Annual Meeting of the Society of Toxicology*, San Antonio, TX, March 10-14, 2013.
24. S.N. Uppu, B. London, S.N. Murthy, and **R.M. Uppu**, "Hydrogen peroxide levels in freshly brewed coffee and effects on storage", *51st Annual Meeting of the Society of Toxicology*, San Antonio, TX, March 10-14, 2013.
25. S. Babu, N.A. Vellore, A.V. Kasibotla, H.J. Dwayne, M.A. Stubblefield, and **Rao M. Uppu**, "Estrogenic potential of bisphenol A and nitrated and chlorinated metabolites of bisphenol A - Molecular docking studies", *LONI HPC User Symposium*, Baton Rouge, LA, June 6, 2012.
26. S. Babu, N.A. Vellore, H.J. Dwayne, M.A. Stubblefield, and **R.M. Uppu**, "Toxicodynamics of bisphenol A and its phase I metabolites analyzed through molecular docking", *244th American Chemical Society National Meeting*, Philadelphia, PA, August 19-23, 2012.

27. S. Babu and **R.M. Uppu**, "Determination of bisphenol A in cash receipts by gas chromatography/mass spectrometry following acid-base extraction", *69th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science* (BKX/NIS), Nashville, TN, March 21-25, 2012.
28. F. Mohammad, C.S.S.R. Kumar, and **R.M. Uppu**, "Selective tumoricidal activity of target-specific magnetic nanoparticles", *National Academy of Inventors Inaugural Annual Conference*, Tampa, FL, February 15-17, 2012.
29. S. Babu, A.C. Raghavamenon, and **R.M. Uppu**, "Increased oxidative stress status in neuronal cells exposed to xenoestrogen bisphenol A" *51st Annual Meeting of the Society of Toxicology*, San Francisco, CA, March 11-15, 2012.
30. L.K. Davis and **R.M. Uppu**, "Engineering of bioreactors utilizing plant glycosyl hydrolases: Protein evolution by TADSIr DNA shuffling and fragment doping DNA assembly", *51st Annual Meeting of the Society of Toxicology*, San Francisco, CA, March 11-15, 2012.
31. S. Uppu, A.D. Logan, **R.M. Uppu**, and M.O. Fletcher Claville, "Determination of nitrite using a modified ferrous oxidation-xylenol orange (FOX) assay: An interference turned into a useful methodology", *51st Annual Meeting of the Society of Toxicology*, San Francisco, CA, March 11-15, 2012.
32. F. Mohammad, A.C. Raghavamenon, C.S. Kumar, and **R.M. Uppu**, "Hyperthermia-induced cancer cell death by targeted magnetic particles", *51st Annual Meeting of the Society of Toxicology*, San Francisco, CA, March 11-15, 2012.
33. S. Babu, N.A. Verllore, A.C. Raghavamenon, and **R.M. Uppu**, "Molecular docking of bisphenol A and its nitrated and chlorinated metabolites on to estrogen related receptor-gamma", *18th Annual Meeting of the Society for Free Radical Biology and Medicine*, Atlanta, GA, November 16-20, 2011.
34. S. Babu, C. Pathak, S. Uppu, F.R. Fronczek, and **R.M. Uppu**, "Crystal structure of 3,3'-dinitrobisphenol A", *18th Annual Meeting of the Society for Free Radical Biology and Medicine*, Atlanta, GA, November 16-20, 2011.
35. L.K. Davis and **R.M. Uppu**, "High efficiency DNA shuffling utilizing reassembly PCR and *in vitro* recombination", *Experimental Biology 2011*, Washington, DC, April 9-13, 2011.
36. L.K. Davis and **R.M. Uppu**, "Modeling DNA shuffling of pUNI51 vectors containing glycosyl hydrolase genes", *68th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science* (BKX/NIS), Atlanta, GA, March 23-27, 2011.
37. S. Babu, A.C. Raghavamenon, S. Batra, S. Jeyaseelan, and **R.M. Uppu**, "Cholesterol secoaldehyde-induced amyloid aggregation in hypothalamic neurons", *68th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science* (BKX/NIS), Atlanta, GA, March 23-27, 2011.
38. J.D. Secor, R.B Patel, S.R. Kotha, **R.M. Uppu**, and N.L Parinandi, "Mercury-induced phosphatidic acid lipid signaling in vascular endothelial cells is redox-regulated," *50th Annual Meeting of the Society of Toxicology*, Washington, DC, March 6-10, 2011.
39. L. Laynes, A.C. Raghavamenon, and **R.M. Uppu**, "Pro-oxidant Actions of apocynin and its oxidative metabolites diapocynin and 5-nitroapocynin", *50th Annual Meeting of the Society of Toxicology*, Washington, DC, March 6-10, 2011.
40. A.C. Raghavamenon, S. Babu, S.N. Uppu, K. Smith, N.L. Parinandi, and **R.M. Uppu**, "Unusually high levels of bisphenol-A in cash receipts", *50th Annual Meeting of the Society of Toxicology*, Washington, DC, March 6-10, 2011.
41. S.R. Kotha, M.G. Piper, B.P. Caristophe, N. Patric, **R.M. Uppu**, M.B. Clay, and N.L. Parinandi, "Airborne organic particulate matter as a lung inflammation inducer: Role of phospholipase A2", *50th Annual Meeting of the Society of Toxicology*, Washington, DC, March 6-10, 2011.
42. R.B. Patel, L. Sauers, **R.M. Uppu**, and N.L. Parinandi, "Bleomycin-induced lung endothelial cytoskeletal rearrangement is regulated by thiol-redox", *50th Annual Meeting of the Society of Toxicology*, Washington, DC, March 6-10, 2011.
43. S. Babu, S. Uppu, A.C. Raghavamenon, and **R.M. Uppu**, "The Janus-faced bisphenol-A: A study of pro-oxidant activity", 50*th Annual Meeting of the Society of Toxicology*, Washington, DC, March 6-10, 2011.
44. F. Mohammad, G. Balaji, A. Weber, **R.M. Uppu**, and C.S.S.R. Kumar, "Magnetism in luteinizing hormone releasing hormone (LHRH) bound gold coated SPIONs – Novel nanomaterials for hyperthermia", *Fall Meeting of Materials Research Society*, Boston, November 30-December 4, 2010.
45. F. Mohammad, S. Babu, A.C. Raghavamenon, C.S.S.R. Kumar, K.G. Kousoulas, and **R.M. Uppu**, "Hyperthermia-mediated cell death in murine GT1-7 hypothalamic neurons and human LnCap prostate carcinoma cells exposed to nanoparticles of SPIONs@Au-cysteamine-LHRH", *17th Annual Meeting of the Society for Free Radical Biology and Medicine*, Austin, TX, November 17-21, 2010,
46. V. Panguruli, S. Yang, E. Khosravi, S. Babu, L. Laynes, A.C. Raghavamenon, and **R.M. Uppu**, "Docking of apocynin, 5-nitroapocynin, and diapocynin with 1K4U subsection of human neutrophil NADPH oxidase

system", *17th Annual Meeting of the Society for Free Radical Biology and Medicine*, Austin, TX, November 17-21, 2010.

47. L. Laynes, A.C. Raghavamenon, V. Achuthan, and **R.M. Uppu**, "Effect of NADPH oxidase inhibitors on the oxidative stress status and related signaling in ChSeco exposed H9c2 cardiomyoblasts", *67th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science*, New Orleans, LA, March 24-28, 2010.
48. S. Babu, A.C. Raghavamenon, R.J. Martin, and **R.M. Uppu**, "Beta-secretase gene expression and activity in murine GT1-7 hypothalamic neurons exposed to cholesterol secoaldehyde", *67th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science* (BKX/NIS), New Orleans, LA, March 24-28, 2010.
49. F. Mohammad, G. Balaji, A. Weber, **R.M. Uppu**, and C.S.S.R. Kumar, "Effect of metallic coating on hyperthermia of SPIONs", *239th Spring National Meeting of the American Chemical Society*, San Francisco, CA, March 21-25, 2010
50. L. Laynes, A.C. Rahavamenon, V. Achuthan, and **R.M. Uppu**, "Oxidative stress status and related MAPK signaling in H9c2 cardiomyoblasts exposed to cholesterol secoaldehyde", *49th Annual Meeting of the Society of Toxicology*, Salt Lake City, UT, March 7-11, 2010.
51. S. Babu, A.C. Raghavamenon, R.J. Martin, B. Prakhya, and **R.M. Uppu**, "Beta-secretase gene expression and activity in murine GT1-7 hypothalamic neurons exposed to cholesterol secoaldehyde", *49th Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 15-19, 2010.
52. A.C. Raghavamenon, S. Babu, V. Achuthan, X. Gao, O.D'Auvergne, R. Atmakuru, and **R.M. Uppu**, "5-Nitroapocynin reverses LPS-, but not PMA-induced IL-6 release by mouse J774 macrophages: A possible role of protein kinase-C", *49th Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 15-19, 2010.
53. R. Kotha, A.H. Hinzey, M.A. Kline, E.S. O'Connor Butler, **R.M. Uppu**, and N.L. Parinandi, "Cytotoxicity of cyclodextrins: Implications in cellular cholesterol lipid raft studies", *49th Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 15-19, 2010.
54. A.C. Raghavamenon, C.L. Dupard-Julien, and **R.M. Uppu**, "Subpicomole determination of alloxan in biological fluids by fluorometric high-performance liquid chromatography", *16th Annual Meeting of the Society for Free Radical Biology and Medicine*, San Francisco, CA, November 18-22, 2009.
55. X. Gao, A.C. Raghavamenon, O.D'Auvergne, and **R.M. Uppu**, "Cholesterol secoaldehyde promotes adhesion of THP-1 monocytes to human vascular smooth muscle cells and induces release of PDGF by cultured monocytes", *16th Annual Meeting of the Society for Free Radical Biology and Medicine*, San Francisco, CA, November 18-22, 2009.
56. **R.M. Uppu**, C. Jones, and F.R. Fronczek, "Crystal structure of 5-nitroapocynin", *16th Annual Meeting of the Society for Free Radical Biology and Medicine*, San Francisco, CA, November 18-22, 2009.
57. A.C. Raghavamenon, K. Sathishkumar, X. Gao, N.L. Parinandi, W.A. Pryor, and **R.M. Uppu**, "Cholesterol secoaldehyde induces apoptosis in H9c2 cardiomyocytes through reactive oxygen species involving mitochondrial and death receptor pathways", *Experimental Biology 2009*, New Orleans, LA, April 18-22, 2009.
58. S.N. Murthy, **R.M. Uppu**, D.B. Casey, A.M. Dadejo, J.S., Dhaliwal, and P.J. Kadowitz, "Peroxynitrite is a potent vasodilator agent in the pulmonary vascular bed of the rat", *Experimental Biology 2009*, New Orleans, LA, April 18-22, 2009.
59. R. Gernapudi, S. Babu, A.C. Raghavamenon, and **R.M. Uppu**, "Formation of nitroapocynin and diapocynin in reactions of apocynin with peroxynitrite/CO_2: Implications for the use of apocynin as a selective inhibitor of NADPH oxidase system", *Experimental Biology 2009*, New Orleans, LA, April 18-22, 2009.
60. F. Mohammad, B. Gopalan, A.C. Raghavamenon, A. Weber, **R.M. Uppu**, and C.S.S.R. Kumar, "Development of LHRH-Au@SPIONs for biomedical applications", *Experimental Biology 2009*, New Orleans, LA, April 18-22, 2009.
61. L. Laynes, A.C. Raghavamenon, and **R.M. Uppu**, "Inhibitors of NADPH oxidase, apocynin and diphenylene-iodonium, mitigate oxidative stress and not cytotoxicity in H9c2 cardiomyocytes exposed to cholesterol secoaldehyde", *48th Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 15-19, 2009.
62. N.L. Parinandi, M. Ahmad, A.C. Raghavamenon, S. Sliman, S. Butler, S.I. Sherwani, and **R.M. Uppu**, "Cholesterol secoaldehyde activates phospholipase A2 and causes barrier dysfunction in vascular endothelial Cells: Implications in vascular diseases", *48th Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 15-19, 2009.
63. A.C. Raghavamenon, R. Gernapudi, S. Babu, and **R.M. Uppu**, "Intracellular oxidative stress and cytotoxicity in rat primary cortical neuronal cells exposed to cholesterol ozonation products", *Ninth International Conference Alzheimer's Disease/Parkinson's Disease 2009* (AD/PD 2009), Prague, Czechoslovakia, March 11-15, 2009.

64. X. Gao, A.C. Raghavamenon, O. D'Auvergne, K.G. Kousoulas, and **R.M. Uppu**, "Cholesterol secoaldehyde induces apoptosis in J774 macrophages via mitochondrial pathway but not involving reactive oxygen species as mediators", *47th Annual Meeting of the Society of Toxicology*, Seattle, WA, March 16-20, 2008.
65. C.L. Dupard-Julien and **R.M. Uppu**, "N-(2,3,4,5,6-Pentafluorophenyl)-dithiocarbamate as a sensitive derivatizing reagent for the quantitative determination of alpha, beta-unsaturated carbonyl compounds", *65th Joint Annual Meeting of Beta Kappa Chi/The National Institute of Science* (BKX/NIS), Irving, TX, March 12-16, 2008.
66. L. Laynes, A.C. Raghavamenon, and **R.M. Uppu**, "Cholesterol secoaldehyde-induced apoptosis in cardiomyocytes: Role of hydrogen peroxide and P38 MAP kinase signaling", *47th Annual Meeting of the Society of Toxicology*, Seattle, WA, March 16-20, 2008.
67. **R.M. Uppu** and A.C. Raghavamenon, "Base-catalyzed hydrolysis of artemisinin to a hydroperoxide derivative: Implications to mechanism of action of artemisinin and its derivatives", *47th Annual Meeting of the Society of Toxicology*, Seattle, WA, March 16-20, 2008.
68. B.M. King, **R.M. Uppu**, and M.O. Fletcher Claville, "Reactions of singlet oxygen with furosemide: Possible formation of reactive electrophilic intermediates", *47th Annual Meeting of the Society of Toxicology*, Seattle, WA, March 16-20, 2008.
69. A.C. Raghavamenon, X. Gao, O. D'Auvergne, K.G. Kousoulas, and **R.M. Uppu**, "Inflammatory protein and gene expression in monocytes and macrophages exposed to cholesterol secoaldehyde: Implications to atherosclerotic plaque development", *47th Annual Meeting of Society of Toxicology*, Seattle, WA, March 16-20, 2008.
70. L.K. Davis, A.F. Muyiwa, X.Gao, A.C. Raghavamenon, and **R.M. Uppu**, "Apoptosis in murine hypothalamus neurons exposed to dihydroartemisinin: Possible role of the extrinsic pathway", *39th Annual Meeting of the American Society for Neurochemistry*, San Antonio, TX, March 1-5, 2008.
71. L.K. Davis, M. Akinniyi, J. Spurlock, A.C. Raghavamenon, and **R.M. Uppu**, "Cytotoxicity of dihydroartemisinin an active metabolite of antimalarial drug artemisinin, in murine hypothalamic neurons", *Annual Meeting of South Central Chapter of the Society of Toxicology*, Oxford, MS, September 27-28, 2007.
72. X. Gao, A.C. Raghavamenon, K.G. Kousoulas, and **R.M. Uppu**, "Cytotoxicity and inflammatory gene expression in monocytes and macrophages exposed to cholesterol secoaldehyde", *Annual Meeting of South Central Chapter of the Society of Toxicology*, Oxford, MS, September 27-28, 2007.
73. B.M. King, **R.M. Uppu**, and M.O. Fletcher Claville, "Reactions of singlet oxygen with furan-containing drug furosimide: Attempts to generate a secondary ozonide", *Annual Meeting of South Central Chapter of the Society of Toxicology*, Oxford, MS, September 27-28, 2007.
74. **R.M. Uppu**, B.D. Nossaman, A.J. Greco, A. Fokin, S.N. Murthy, V.A. Fonseca, and P.J. Kadowitz, " A potential mechanism for the conversion of peroxynitrite to a nitric oxide donor", *Second International Meeting on the Role of Nitrite in Physiology, Pathophysiology, and Therapeutics*, Bethesda, MD, September 6-7, 2007.
75. D. Casey, A. Greco, A. Badejo, Jr., J. Dhaliwal, S.N. Murthy, B. Nossaman, **R.M. Uppu**, and P.J. Kadowitz, "Analysis of responses to peroxynitrite in the pulmonary vascular bed of the rat", *Second International Meeting on the Role of Nitrite in Physiology, Pathophysiology, and Therapeutics*, Bethesda, MD, September 6-7, 2007.
76. K. Sathishkumar, X. Gao, and **R.M. Uppu**, "Oxidative stress induces cell death independent of Aβ aggregation in GT1-7 hypothalamic neurons exposed to cholesterol secoaldehyde: Relevance to Alzheimer's disease", *8th International Conference on Alzheimer's Disease/Parkinson's Disease 2007* (AD/PD 2007), Salzburg, Austria, March 14-18, 2007.
77. K. Sathishkumar, X. Gao, and **R.M. Uppu**, "Cholesterol secoaldehyde, a cholesterol oxidation product, induces intracellular amyloid aggregation and apoptosis: Implications for Alzheimer's disease", *12th Annual Meeting of the Society for Free Radical Biology and Medicine*, Denver, CO, November 15-19, 2006.
78. X. Gao, K. Sathishkumar, and **R.M. Uppu**, "Alteration in pro-inflammatory gene expression profiles in cholesterol secoaldehyde exposed H9c2 cardimyocytes", *Louisiana Biomedical Research Network Summer Research Forum*, Baton Rouge, LA, August 4, 2006.
79. K. Sathishkumar and **R.M. Uppu**, "Cardiomyocyte signaling by cholesterol ozonation products", *National IDeA (Institutional Development Award) Symposium of Biomedical Research Excellence* (NISBRE), Washington, DC, July 20-22, 2006.
80. K. Sathishkumar and **R.M. Uppu**, "Cholesterol secoaldehyde induces apoptotic signaling through mitochondrial pathway in H9c2 cardiomyoblasts", *45th Annual Meeting of the Society of Toxicology*, San Diego, CA, March 5-9, 2006.

81. T. Perumal, V. Rangan, C. Sparrow, and **R.M. Uppu**, "Oxidation of NAD(P)H by hypochlorous acid and peroxynitrite (± CO_2): A comparative study", *45th Annual Meeting of the Society of Toxicology*, San Diego, CA, March 5-9, 2006.
82. V. Rangan, T.E. Perumal, K. Sathishkumar, and **R.M. Uppu**, "Oxidation of indigo carmine by peroxynitrite (± CO_2): Implications for the hypothesis on ozone production by neutrophils", *45th Annual Meeting of the Society of Toxicology*, San Diego, CA, March 5-9, 2006.
83. K. Sathishkumar, C. Ibekwe, S.N. Murthy, and **R.M.Uppu**, "Cytotoxic effects of biologically active oxysterols produced during ozonolysis of cholesterol in murine GT1-7 hypothalamic neurons", *Biological Reactive Intermediates Conference VII: BRIs and Human Health and Disease*, Tucson, AZ, January 4-7, 2006.
84. K. Sathishkumar, X. Xi, T. Perumal, R.J. Martin, and **R.M. Uppu**, "Cholesterol secoaldehyde induces amyloidogenesis and apoptosis in murine GT1-7 hypothalamic neuronal cells", *12th Annual Meeting of the Society for Free Radical Biology and Medicine*, Austin, TX, November 16-20, 2005.
85. T. Perumal, K. Sathishkumar, and **R.M. Uppu**, "A reversed phase HPLC method for determination of methyl vinyl ketone and other α,β-unsaturated carbonyl componds in biological samples", *12th Annual Meeting of the Society for Free Radical Biology and Medicine*, Austin, TX, November 16-20, 2005.
86. V. Rangan, K. Sathishkumar, and **R.M. Uppu**, "Cytotoxicity of methyl vinyl ketone, an α,β-unsaturated carbonyl compound, in murine GT1-7 hypothalamic neuronal cells", *12th Annual Meeting of the Society for Free Radical Biology and Medicine*, Austin, TX, November 16-20, 2005.
87. **R.M. Uppu**, K. Sathishkumar, and T. Perumal, "Reactions of peroxynitrite and peroxynitrite/CO_2 with clozapine: evidence for the formation of electrophilic intermediates", *12th Annual Meeting of the Society for Free Radical Biology and Medicine*, Austin, TX, November 16-20, 2005.
88. M. Haque, I. Seghal, J. Francis, and **R.M. Uppu**, "3β-Hydroxy-5-oxo-5,6-secocholestan-6-al, a major ozonation product of cholesterol, induces apoptosis in cardiomyocytes", *44th Annual Meeting of the Society of Toxicology*, New Orleans, LA, March 6-10, 2005.
89. **R.M. Uppu** and R.J. Martin, "Reactions of nitric oxide-derived oxidants with 4-acetamidophenol: Formation of electrophilic intermediates', *44th Annual Meeting of the Society of Toxicology*, New Orleans, LA, March 6-10, 2005.
90. **R.M. Uppu**, "N (2,3,4,5,6-Pentafluorophenyl)dithiocarbamate as a sensitive derivatizing reagent for the estimation of epoxides of 1,3-butadiene and other petrochemical alkenes", *44th Annual Meeting of the Society of Toxicology*, New Orleans, LA, March 6-10, 2005.
91. B. Kandlakunta and **R.M. Uppu**, "A fluorimetric reversed phase HPLC method for the determination of alloxan in biological samples", *64th Annual Meeting of the American Diabetes Association*, Orlando, FL, June 4-8, 2004.
92. R. Kancharla, B. Kandlakunta, and **R.M. Uppu**, "Synthesis of peroxynitrite using isoamyl nitrite and hydrogen peroxide in a homogeneous solvent system", *43rd Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 21-25, 2004.
93. B. Kandlakunta, J.S. Allison, and **R.M. Uppu**, "A reversed HPLC method for the determination of epoxides of 1,3-butadiene and other petrochemical alkenes", *43rd Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 21-25, 2004.
94. **R.M. Uppu** and B. Kandlakunta, "Protective role of uric acid against nitric oxide-mediated oxidative injury", *43rd Annual Meeting of the Society of Toxicology*, Baltimore, MD, March 21-25, 2004.

K. Research Projects and Support (partial list; since 2003):

Active

1. **"The New Energy Workforce: Sustainable Materials, Energy and Technology"** NSF ACE Implementation Grant (HRD- 1043316) 09/2010 to 08/2016; $3,169,600; Subblefield – PI; co-PIs: Mensah, Crosby, and Ning; Lead Researcher-Mentor – **Uppu**.
   This project involves training of undergraduate and graduate students in the areas of bioenergy-biofuels and sustainability.

2. **"Urban Tree Interception of UV (A/B) Radiation and Its Genetic Consequences"** USDA-NIFA-CBGP Grant (2014-38821-22415); 09/01/2014 to 08/31/2017; $479,672; Qi – PI; co-PIs: **Uppu**, Gray, Bai, Chin, Ferchaud, and Deike.
   This grant allows us to continue our effort to investigate UV tolerance mechanism of urban trees and their benefits in helping reducing UV radiation exposure in human environment.

Pending

1. **"MRI: Acquisition of a Super-Resolution Scanning Confocal Microscope for Research and Teaching at Louisiana State University"** NSF MRI program; 12/01/2016-11/30/2019; $697,323; Moroney – PI; co-PIs: **Uppu**, Sabliov, Vicente, and DiMario

   This proposal requests funds to purchase a super-resolution confocal microscope to be housed at Louisiana State University (LSU) in Baton Rouge and made available to users throughout the region. MRI: Acquisition of a Super-Resolution Scanning Confocal Microscope for Research and Teaching at Louisiana State University

2. **"Engineering Research Center for Environmentally Sensible Technologies for Energy Recovery from Subsurface (C-ESTERS)"** NSF ERC program; Dandina Rao–PI; co-PIs: Uppu, Srinivasan, and Wheeler.

   This proposal directly tackles the nation's energy and environmental needs by developing a transformational engineered system that significantly enhances energy extraction from subsurface resources through a paradigm shift from the norm while simultaneously capturing, utilizing, and storing industry emissions in subsurface formations.

In Preparation

1. **"HBCU-RISE Research and Infrastructure in Environmental Science and Technology"** NSF HBCU-RISE program, 02/01/2017 to 3/01/2020; $1,000,000; **Uppu** - PI; co-PIs: Mensah, Murthy and Martinez-Ceballos.

   With faculty participation from biological sciences, environmental toxicology, mechanical engineering and physics, the proposal addresses the need for future scientists and engineers from diverse groups who are well-trained and competitive with necessary research background in the area of purification and management of water resources.

2. **"Role of Class 1 Histone Deacetylases in Staphylococcus aureus Pneumonia"** NIH 1R01AI123701-01; 01/01/17-12/31/21; $1,785,626; Batra-PI; co-PIs: Murthy and **Uppu**

   This R01 application fiocuses on infections of the lung by a gram-neagtive bacteria and the therapeutic effects of certain naturally occuring phytoceuticals through regulation of class 1 histone deacetylases 1, 2 and 3.

Completed in the past 5 years

1. **"Cytotoxicity of Insect Repellents"** NSF SBIR Phase II (IIP-0956877; Woods − PI) subcontracted through Inscent Inc, Irvine, CA; 11/2009 to 12/2011; $100,912; **Uppu** – PI at SUBR.

   This project examined the potential neuronal and dermal toxicity of 30 new generation insect repellents. These compounds were identified originally by Inscent Inc from over 30,000 small molecules through use of a platform technology that employed binding to the AmelOBP2 protein having a fluorescence-based reporter system, *Attenu.* The *Attenu* assay was developed in-house at the Inscent Inc to interrogate insect chemosensory proteins with complex chemical mixtures *in vitro.*

2. **"Protection of Large Molecule Drugs I and II"** NSF SBIR Phase II (OII-0620587; Jaffe – PI) subcontracted through Material Methods LLC, Riverside, CA; 08/2008-10/2010; $154,999; **Uppu –** PI at SUBR

   This research was aimed at enhancing the performance of large molecule drugs, in particular protein therapeutics, by way of attaching them to certain, proprietary poly(2-3)glucans that are water-soluble in nature.

3. **"Cardiomyocyte and Vascular Endothelial Cell Signaling by Cholesterol Ozonation Products"** NIH BRIN Program of NCRR (P20 RR16456; Silverman – PI) subcontracted through LBRN (LSU); 08/2005 to 04/2010; $477,509; **Uppu**–PI at SUBR.

   This project examined the cytotoxic effects of cholesterol ozonation products on cardiomyocytes and vascular endothelial cells. The broader impact was to find a molecular basis for increased incidence of myocardial disease associated with air pollution.

4. **"Enhancement of Doctoral Research Capacity in Environmental Toxicology at SUBR"** NSF-HRD-0450375 Owens and Miller (PIs); 10/2004 to 09/2008; $770,179 (total); **Uppu –** co-PI; Uppu's subproject: Molecular Basis of Degenerative Diseases Via Oxidative Stress.

The goal of this subproject was to promote graduate research and training in the area of chemical toxicology with particular reference to the role played by reactive oxygen and nitrogen species in the aetiopathology of degenerative diseases such as aging, cancer, and heart disease.

L. Collaborators:

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