Fang Bian, PhD
Fang.Bian@LIFE.edu

FANG BIAN, Ph.D.

Associate Professor
Department of Nutrition
Life University

EDUCATION

2008 – 2010 **Postdoctoral Award - American Heart Association**
Case Western Reserve University, Cleveland, Ohio
Title: Interdisciplinary spectrometry technology development to study diabetes

2001 – 2006 **Ph.D. Case Western Reserve University, Cleveland, Ohio**
Nutrition
Dissertation: Novel aspects of fatty acid oxidation uncovered by the combination of mass isotopomer analysis and metabolomics

1992 – 1996 **B.S. Shanghai Ocean University**
Food Science

EMPLOYMENT

2014- Present **Life University**
Department of Nutrition, Didactic Program
Associate Professor

2011- 2014 **Morehouse School of Medicine**
Neuroscience Institute
Research Associate

2006 – 2010 **Case Western Reserve University**
Department of Biomedical Engineering, School of Engineering
Research Associate

2001 – 2006 **Case Western Reserve University**
Department of Nutrition, School of Medicine
Research Assistant

1999 – 2000 **Global Fisheries Co. LTD., Republic of Singapore**
Department of Research & Development
Director of Quality Control

1996 – 1999 **PepsiCo Food International Co. LTD (Frito-Lay)**
Department of Research & Development
Food Engineer

1996 – 1996 **Shanghai Mei-Ling Food Co. LTD, Shanghai**
Department of Research & Development
Food Engineer

COURSE TAUGHT

2014 -- 2015

NTR 200	Nutrition Concepts and Controversies (on line)
NTR 301	Research Methodology
NTR 303	Menu Planning
NTR 304	Food Science
NTR 401	Nutrition Therapy I
NTR 412	Geriatric Nutrition
NTR 434	Food and Drug Interactions
NTR 435	Financial Reimbursements
MNTR 600	Epigenetics and Advanced Biochemistry
MNTR 607	Outcome Research & Evidenced Based Practice
MNTR 611	Agricultural Issues Related to Food Product Development & Processing
MNTR 698	Master Thesis

AWARDS AND HONORS

2009-2010	Travel Award of American Society for Biochemistry& Molecular Biology
2008-2010	Postdoctoral Award of American Heart Association (AHA 0825544D)
1996	The Student of the Year, Shanghai Ocean University
1995	Excellent Student Scholarship, Shanghai Ocean University
1995	Outstanding Student Award, Shanghai Ocean University
1994	Zhu-Yuan Din Scholarship, Shanghai
1993	Excellent Student Scholarship, Shanghai Ocean University

PROFESSIONAL SKILLS

- LC/MS: Waters nanoAcQuity Synapt G2S with MassLynx and PLGS (trained and certified user)
- Nuclear Magnetic Resonance (NMR) Spectroscopy (Bruker 800MHz & 900MHz)
- LC/MS: Applied Biosystem / MDS SCIEX Mass Spectrometer 4000QTrap (trained and certified) with Analyst 1.4.2 (LC/MS)
- Agilent Gas Chromatography-Mass Spectrometry (GC/MS) with data analysis
- Thermo High pressure liquid chromatography (HPLC) with data analysis
- UV spectroscopy, enzymatic assays with data analysis
- Western Blot
- Micro surgery (e.g. mouse heart perfusion)

Fang Bian, PhD
Fang.Bian@LIFE.edu

PEER REVIEWED PUBLICATIONS

1. Jin ZC, **Bian F**, Tomcik K, Kelleher JK, Zhang GF, and Brunengraber H, *" Compartmentation of Metabolism of the C12-, C9-, and C5-n-dicarboxylates in rat liver, investigated by mass isotopomer analysis".* **J Biol Chem**, Vol. 290, No. 30, pp 18671-18677, July 24, 2015

2. **Bian F**, Li W, Zhong J, Chaudhuri P, Tian R, and Yu X *"Overexpression of GLUT1 in mice heart: Increased glucose oxidation and decreased fatty acid oxidation prevents the development of contractile dysfunction in diabetic hearts"* **Circulation**, Manuscript in writing, 2015

3. **Bian F**, Simon, R.P.; Li, Y.; David, L.; Wainwright, J.; Hall, C.L.; Frankel, M.; and Zhou A, *"Nascent proteomes in peripheral blood mononuclear cells as a novel source for biomarker discovery in human stroke".* **Stroke**, 45: 1177-1179, 2014.

4. Li W, **Bian F**, Chaudhun P, Mao X, and Yu X, *"Delineation of substrate selection and anaplerosis in tricarboxylic acid cycle of the heart by ^{13}C NMR spectroscopy and mass spectrometry."* ***NMR in Biomedicine***. Vol 24 (2), pp. 176-187, Feb. 2011.

5. Zhou L, Cabrera ME, Huang H, Yuan CL, Monika DK, Sharma N, **Bian F**, Stanley WC *"Parallel activation of mitochondrial oxidative metabolism with increased cardiac expenditure is not dependent on fatty acid oxidation in pigs."* ***J Physiol.*** Vol 579, pp. 811-21, Dec. 2006

6. **Bian F**, Anderson VA, Kasumov T, Jobbins KA, Hoppel CL, Brunengraber H, *"Competition between acetate and oleate for the formation of malonyl-CoA and mitochondrial acetyl-CoA in the perfused rat heart, "* ***J. Molecular Cellular Cardiology.*** Vol. 41(5), p868-21, Nov. 2006

7. Kasumov T, Adams JE, **Bian F**, David F, Thomas KR, Jobbins KA, Hoppel CL, Brunengraber H, *"Probing peroxisomal beta-oxidation and the labeling of acetyl-CoA proxies with [1-^{13}C]octanoate and [3-^{13}C]octanoate in the perfused rat liver"* ***Biochem J***, Vol. 389 (Pt 2), pp. 397-407, July 2005.

8. **Bian F**, Kasumov T, Thomas KR, Jobbins KA, David F, Minkler PE, Hoppel CL, Brunengraber H, *"Peroxisomal and mitochondrial oxidation of fatty acids in the heart, assessed from the ^{13}C labeling of malonyl-CoA and the acetyl moiety of citrate"* ***J Biol Chem***, Vol. 280, No. 10, pp. 9265-9271, March 2005

9. Kasumov T, Martini WZ, Reszko AE, **Bian F**, Pierce BA, David F, Roe CR, Brunengraber H *"Assay of the concentrations and ^{13}C isotopic enrichment of propionyl-CoA, methylmalonyl-CoA, and succinyl-CoA by gas chromatography-mass spectrometry,"* ***Anal Biochem***, Vol. 305, No. 1, pp. 90-96, June 2002.

SELECTED INTERNATIONAL CONFERENCE PROCEEDINGS

1. **Bian F.**, Rice J., Li Y., and Zhou A. Distinct roles of polycomb group proteins and their associated proteins in neuronal cells and endocrinal cells. *The 2014 Annual Society of Neuroscience Meeting,* Submitted, Baltimore, MD, November 2014.

2. **Bian F***; Cao L*; and Zhou A. Deciphering systemic responses to brain disorders by quantitative proteomics. *The 2014 Annual Society for Mass Spectrometry,* Baltimore, MD, June 2014. (* first author equal contributions)

3. Cao L; **Bian,F**; and Zhou, A. Peripheraol organ proteomics, a novel approach to biomarker discovery for brain disorders. *International Stroke Conference*, San Diego, CA, February 2014.

4. **Bian F**, Yang T, Li Y, Simon R, and Zhou A, "Nascent proteomes in response to brain ischemia" *The 2013 Annual Society of Neuroscience Meeting,* San Diego, CA, November 2013.

5. Umejiego E, **Bian F**, Yang T, and Zhou A, "Characterization of nascent proteome in ischemic-tolerant mouse brain using high throughput mass spectrometry technology" *The 2013 Annual Biomedical Research Conference for Minority Students*, Nashville, TN, November 2013.

6. Zhou A, **Bian F**, Cao L, Li Y, Frankel M, Wainwright J, and Simon R, "Characterization of multiple blood proteomes in African American Stroke Patients" *The 9th Annual Conference of Translational Proteomics*, Baltimore, Maryland, March 2013.

7. Zhou A, **Bian F**, Cao L, Powell M, Wainwright J, Li Y, Xu KF, Chen XM, and Simon R, "Characterization of nascent proteomes in blood in human stroke patients" *The 2012 Annual Society of Neuroscience Meeting,* New Orleans, LA, October 2012.

8. **Bian F**, David L, Simon R, Frankel M, Wainwright J, and Zhou A, " Nascent proteomes of peripheral blood mononuclear cells in African American stroke patients" *the 11th Annual World Congress of Human Proteome Organization (HUPO)*, Boston, September 2012.

9. Li W*, **Bian F***, Chaudhuri P, and Yu X, "A ^{13}C Isotopomer model for accurate NMR Quantification of substrate selection and anaplerosis" *The 2009 Annual meeting of International Society of Magnetic Resonance in Medicine*, Hawaii, April 2009. (* first author equal contributions)

10. Li W*, **Bian F***, Chaudhuri P, and Yu X, "A ^{13}C isotopomer model for NMR and GCMS analysis" *The 2009 Annual Meeting of Experimental Biology*, New Orleans, LA, April 2009. (* first author equal contributions)

11. **Bian F**, Li W, Zhong J, Chaudhuri P, Kerr D, Tian R, and Yu X, "Increased glucose transport prevents the development of contractile dysfunction in diabetic hearts" *The 2009 Annual Meeting of Experimental Biology*, New Orleans, LA, April 2009

12. Li W*, **Bian F***, Chaudhuri P, and Yu X, "A ^{13}C Isotopomer model for accurate NMR Quantification of substrate selection and anaplerosis" *The 2009 Annual meeting of International Society of Magnetic Resonance in Medicine*, Hawaii, April 2009. (* first author equal contributions)

13. Li W*, **Bian F***, Chaudhuri P, and Yu X, "A ^{13}C isotopomer model for NMR and GCMS analysis" *The 2009 Annual Meeting of Experimental Biology*, New Orleans, LA, April 2009. (* first author equal contributions)

14. Zhong J, **Bian F**, Li W, Chaudhuri P, Tian R, and Yu X, "Cardiac- Specific GLUT1 Overexpression Preserves Contractile Reserve in Diabetic Mouse Hearts: a Multi-Phase MR DENSE Study under Dobutamine- Induced Cardiac Stress", *The 2009 Annual meeting of International Society of Magnetic Resonance in Medicine*, Hawaii, April 2009.

15. **Bian F**, Zhong J, Lu M, Chaudhuri P, Banerjee S, Tian R, and Yu X "Increased glucose oxidation protects against contractile dysfunction in diabetic hearts", *Metabolism society meeting in BOSTON*, 2008

16. Zhong J, **Bian F**, Lu M, Chaudhuri P, Banerjee S, Tian R, and Yu X, "Cardiac-specific Over expression of GLUT1 Prevents the Development of Abnormal Ventricular function in Diabetic Mice: an Investigation with MR Tagging and Spectroscopy," *The 2008 Annual meeting of International Society of Magnetic Resonance in Medicine*, April 2008.

17. **Bian F**, Kasumov K, Yang LL, Jobbins KA, Isquick SF, Minkler PE, Anderson VE, Hoppel CL, Brunengraber H, "Hepatic metabolism of the dicarboxylate azelate production of malonyl-CoA and of anaplerotic methylmalonyl-CoA," *The 2006 Annual Meeting of Experimental Biology,* San Francisco, CA, April 2006

18. **Bian F**, Kasumov K, Jobbins KA, Thomas KR, David F, Hoppel CL, Brunengraber H, "Inhibition of oleate oxidation in rat heart by acetate and propionate: A mass isotopomer study," *The 2006 Annual Meeting of Experimental Biology,* San Francisco, CA, April 2006

19. Yu L**,** Kasumov K, Jobbins KA, **Bian F**, McElfresh T, Okere I, Stanley W, Brunengraber H, "The anaplerotic potential of pentanoate and β-ketopentanoate in pig heart in vivo," *The 2006 Annual Meeting of Experimental Biology,* San Francisco, CA, April 2006

20. **Bian F,** Yang LL, Kasumov T, Minkler PE, Anderson VE, Hoppel CL, Brunengraber H, "Pathway discovery via the association of metabolomics and mass isotopomer analysis," *First Scientific Meeting of the Metabolomics Society*, Tsuruoka City Japan, June 2005

21. **Bian F**, Jobbins KA, Thomas KR, Hoppel CL, Brunengraber H. "Malonyl-CoA, A window on peroxisomal oxidation in the heart," *Society for Heart and Vascular Metabolism,* Montebello, Canada, Sept. 2004

22. **Bian F**, Jobbins KA, Thomas KR, Hoppel CL, Brunengraber H. "Acetate inhibits long-chain fatty acid oxidation in rat heart independent of changes in malonyl-CoA content," *Society for Heart and Vascular Metabolism,* Montebello, Canada, Sept. 2004

23. Yu L, Kasumov T, **Bian F**, Okere I, Stanley WC, Brunengraber H. "Metabolism of pentanoate in pig heart in vivo," *Society for Heart and Vascular Metabolism,* Montebello, Canada*,* Sept. 2004

24. **Bian F,** Kasumov T, Hoppel CL, Brunengraber H. "Peroxisomal beta-oxidation of middle-chain fatty acid*," The annual meeting of Experimental Biology,* Washington D.C., April 2004

25. Kasumov T, Adams JE, **Bian F**, David F, Thomas KR, Jobbins KA, Minkler PE, Hoppel CL, Brunengraber H, "Probing peroxisomal beta-oxidation and the labeling of acetyl-CoA proxies with [1-^{13}C]octanoate and [3-^{13}C]octanoate in the perfused rat liver," *The annual meeting of Experimental Biology,* Washington D.C., April 2004

26. Kasumov T, **Bian F,** Brunengraber H. "Anaplerosis from propionate in the perfused rat heart," *The 2002 Annual Meeting of Experimental Biology,* New Orleans, Louisiana, April 2002

SELECTED PROFESSIONAL PRESENTATIONS

1. **Bian F**, Yang T, Li Y, Simon R, and Zhou A, "Nascent proteomes in response to brain ischemia" *The 2013 Annual Society of Neuroscience Meeting,* San Diego, CA, November 2013.

2. **Bian F**, "Nascent proteome of peripheral blood mononuclear cells in African American stroke patients" the 11th Annual World Congress of Human Proteome Organization HUPO, Boston, September, 2012

3. **Bian F**, "Altered Metabolism in Diabetes", NTRN 365, Lecture, February. 2009

4. **Bian F, Yu X, "**Increased glucose transport prevents the development of contractile dysfunction in diabetic hearts", Diabetes Research Retreat, Cleveland, Ohio, November 2009

5. **Bian F,** Brunengraber H, "Novel aspects of cardiac fatty acid oxidation uncovered by combination of mass isotopomer analysis and metabolomics," *Case Cardiovascular Research*, Cleveland, OH, May 2006

6. **Bian F,** Kasumov T, Jobbins KA, Thomas KR, Hoppel CL, Brunengraber H, "Peroxisomal and mitochondrial oxidation of fatty acids in the heart, assessed by the (^{13}C) labeling of malonyl-CoA and of the acetyl moiety of citrate," *Case Cardiovascular Research Retreat*, Cleveland, OH, June 2005

7. **Bian F,** Kasumov T, Thomas KR, Jobbins KA, Hoppel CL, Brunengraber H, "Anaplerosis from mitochondrial malonyl-CoA in liver," *Case Diabetes Research Retreat,* Cleveland, OH, December. 2004

8. Kasumov T, **Bian F**, Jobbins KA, Pierce B, David F, Brunengraber H, "Feedback inhibition of anaplerosis from [U-$^{13}C_3$]propionate in the perfused rat heart. *Case Diabetes Research Retreat,* Cleveland, OH, December. 2004

9. **Bian F,** Kasumov T, Hoppel CL, Brunengraber H. "Peroxisomal beta-oxidation of middle-chain fatty acid," *The annual meeting of Experimental Biology,* Washington D.C., April 2004

10. **Bian F,** Kasumov T, Hoppel CL, Brunengraber H. "Does acetate perturb heart metabolism in hemodialyzed and alcoholic patients? Animal studies," *Research ShowCase of Case Western Reserve University,* April 2004

11. **Bian F**, Jobbins KA, Thomas KR, Hoppel CL, Brunengraber H. "Malonyl-CoA, A window on peroxisomal oxidation in the heart," *Society for Heart and Vascular Metabolism,* Montebello, Canada*,* September. 2004

12. **Bian F,** Brunengraber H. "Metabolism of azelate in the liver, a metabolomic study," Department of Nutrition, School of Medicine, Case Western Reserve University, June 2005

13. **Bian F,** Brunengraber H. " Peroxisomal fatty acid oxidation and regulation of malonyl-CoA metabolism in the heart," Department of Nutrition, School of Medicine, Case Western Reserve University, June 2004

14. **Bian F,** Brunengraber H. "Potential use of Pyruvate-Glycerol ester for treatment of diabetic ketoacidosis Part II", Department of Nutrition, School of Medicine, Case Western Reserve University, June 2003

15. **Bian F**, Brunengraber H. "Potential use of Glycerol-Pyruvate ester for treatment of diabetic ketoacidosis Part I," Department of Nutrition, School of Medicine, Case Western Reserve University, June 2002