

## 2003 *Curriculum vitae*



**NAME:** Rui Hai Liu  
**DEPARTMENT/UNIT:** Department of Food Science  
**TITLE:** Associate Professor  
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### **BACKGROUND**

#### **EDUCATION**

<b><u>Year</u></b>	<b><u>Degree</u></b>	<b><u>Institution</u></b>
1993	Ph.D.	Cornell University, Ithaca, New York
1985	M.S.	Harbin Medical School, China
1982	M.D.	Harbin Medical School, China
1982	B.S.	Harbin Medical School, China

#### **ACADEMIC RANKS**

**Associate Professor:** 2004  
**Assistant Professor:** 1997

#### **PRIMARY DEPARTMENTAL PROGRAM AREA**

Food Science  
Environmental Toxicology  
Fruits and vegetables

## Comparative Cancer Program

**AREAS OF EXPERTISE**

Functional foods and nutraceuticals  
 Diet and cancer  
 Natural bioactive compounds and free radicals in chronic diseases  
 Herbal remedies for cancer and hepatitis

**PROFESSIONAL EXPERIENCE**

<b><u>Year</u></b>	<b><u>Experience</u></b>
2004-present	Associate Professor, Dept. of Food Science, Cornell University
1997-2004	Assistant Professor, Dept. of Food Science, Cornell University
1996-present	Adjunct Professor, Nutrition, Harbin Medical School, China
2003-present	Adjunct Professor, Food Science, Hebei Agriculture University, China
1994-1997	Research Associate, Dept. of Clinical Sciences, Cornell University
1992-1994	Postdoctoral Associate, Dept. of Clinical Sciences, Cornell University
1988-1992	Graduate Research Assistant, Field of Toxicology, Cornell University
1985-1987	Research Associate, Harbin Medical School, China

**HONORS AND AWARDS**

*Annual University Exhibition and Reception on Capitol Hill*, sponsored by the National Association of State Universities and Land-Grant Colleges (NASULGC): Agricultural Research and Education Serving the Nation in Food and Health, Capitol Hill, Washington, DC, May 6, 2001.

Honorary Research Associate, The University of Hong Kong, 2001-present.

“Factors affecting the formation of carcinogenic volatile N-nitroso compounds in foods”, awarded Science and Technology Prize, Science and Technology Commission, Ministry of National Health, P.R. China, June 1991.

“Factors affecting the formation of carcinogenic volatile N-nitroso compounds in foods”, awarded Heilongjiang Science and Technology Prize, Heilongjiang, P.R.China, September, 1989.

## **REPRESENTATIVE ACADEMIC RESPONSIBILITIES**

### **CURRENT DIVISION OF EFFORT**

Teaching	40%
Research	60%

### **RESEARCH RESPONSIBILITIES**

#### **Active Grants, Contracts and Gifts**

44912/A001 (Liu) NIH-NCI-CAM Antiviral/Antitumor Roles of <i>Granoherma lucidum</i> Spores	04/01/04-03/31/06	
03A045-REV2 (Liu) American Institute for Cancer Research Role of Pure Conjugated Linoleic Acid (CLA) Isomers in Prevention of Cancer	1/1/04 - 12/31/06	10%
C2000090 (Liu) NYSTAR Development of a Novel Plant Antiviral Drug for Hepatitis C Virus	10/1/01 - 9/30/04	10%
C200292 (Liu) NYS Dept. of Ag. & Markets Quantifying the Health Benefits of NYS Onions: Natural Antioxidants in Prevention of Chronic Disease	8/15/02 - 12/31/04	5%
NYS Biotech (Liu) NYS Center for Advanced Technology Development of Tea Products with Higher Antioxidant Activity	7/1/2003-6/30/2004	5%
C200069-P (Liu) NYS Dept. of Ag. & Markets Role of Apple Phytochemicals in the Prevention of Cancer	7/1/99 - 6/30/03	2%
Liu Marmotech, Inc. Hepatocyte Model for in vitro Antiviral Screen	10/1/99 - 9/30/04	5%
Liu Federal Formula Funds Total Antioxidant and Anticancer Activity of Phytochemicals from Fruits & Vegetables	10/01/00 - 9/30/03	2%
Liu Cranberry Institute Antioxidant and Anticancer Activities of Cranberry	04/01/01-Present	5%

Gift (Liu) Genie Fantasy Co. Antioxidant Research	09/01/00-	2%
NYC-143407 (Liu) Federal Formula Funds Effect of Thermal Processing on the Nutritional Quality of Processed Vegetables	10/1/02 - 9/30/05	5%
Gift (Liu) Kraft Food In vitro screening of natural products for anti-inflammatory activity	11/1/02-Present	2%
Gift (Liu) Redco Foods Inc. Development of Tea Products with Higher Antioxidant Activity	7/1/03-6/30/04	2%

**Pending Grants/Contracts/Gifts**

PA 02-124 (Liu) National Institute of Health Role of Apple in the Prevention of Breast Cancer	12/1/2004-11/30/2006	10%
NIH (Liu) National Institute of Health Role of Cranberry in the Prevention of Breast Cancer	12/1/2004-11/30/2006	10%
31.0 Improving Human Nutrition for Optimal Health (Liu) USDA Development of Wheat Varieties for High Pro-Vitamin A with Superior Bioavailability for Improving Human Nutrition	10/1/2004-9/30/2007	10%
71.1 Improving Food Quality (Liu) USDA Effects of Thermal Processing on the Phytochemical Content and its Bioavailability in Processed Vegetables	10/1/2004-9/30/2007	10%
AICR-Investigator Initiated Grant (Liu) American Institute for Cancer Research Role of Apple in the Prevention of Cancer	2/1/04 - 12/31/06	10%
2003 RFP-Food & Agriculture Industry Development (FAID) 7/1/2004-6/30/2005		10%

NYS Department of Agriculture and Markets  
Quantifying Mercury Content and Enhancing Nutritional Value of Cultivated Fish

2003 RFP-Food & Agriculture Industry Development (FAID)  
7/1/2004-6/30/2005 10%

NYS Department of Agriculture and Markets  
Antioxidant and Anticancer Activities of New York Grapes and Wine

### **Current Postdoctoral Associates**

Jiaren Liu (3-6-04-present)

### **Past Postdoctoral Associates**

Xianzhong Wu (9-15-00 – 9-14-03)

Ming Liu (9-24-00 – 9-29-01)

Song Hong (5-16-00 – 8-28-01)

### **Current Visiting Scientists**

Sergio Serna (6-28-03 – 7-18-03)

Professor and Chair of Department of Food Science, Instituto Tecnológico y Estudios Superiores de Monterrey (ITESM, Monterey Tech), Mexico

Aleksandra Szulczewska (1-15-04-present)

Food Science & Technology, August Cieszkowski Agricultural University, Poznan, Poland

### **Past Visiting Scientists**

Vladimir Yu. Roumiantsev (6-1-98 – 6-30-98)

Assistant professor, Moscow State University of Food Production, 11 Volokolamskoye Shosse, Moscow 125080, Russia

Haiqiang Jing (9-1-98 – 2-1-99)

Inspection Center, Export Commodity Inspection Bureau, 69 Jichang Road, Zhengzhou, Henan 450046, P.R. China

Xingqi Li (3-1-00 – 9-30-00)

Associate professor, China National Hybrid Rice Research and Development Center, Mapoling, Changsha, Hunan 410125, P.R. China

Huiwen Liu (6-1-00 – 8-31-01)

Professor and vice director in the Department of Histology at Harbin Medical University, Harbin, P.R. China

Stefania LaTerra (3-26-01 - present)  
 The Consorzio Ricerca Filiere Lattier-CaseariaItaly, Ragusa, Italy

Adalia Espinosa (10-17-01 – 1-26-02)  
 James Ford Bell Technical Center, Minneapolis, MN 55427

Kyu-Seok Lee (9-15-01 – 9-14-02)  
 School of Agricultural Biotechnology, Seoul National University, Suwon, South Korea

**TEACHING AND ADVISING RESPONSIBILITIES**

**Administrative Leadership**

1999.2000 Chair, Organizing Committee for Food Science Graduate Seminar

**Courses Taught**

	FS 622 Nutraceuticals and Functional Foods (2 credits)	2004-present
present	FS 621 Food Lipids (2 credits)	1999-
present	FS 210 Food Analysis (3 credits)	1998-
present	FS 417 (FS409) Food Chemistry (4 lectures)	1995-
present	FS 150 Food Choices and Issues (one lecture)	2004-present
present	BioPL 348 The Healing Forest (one lecture)	2004-
present	Bio Sci 101 Explorations in the Biological Sciences (one lecture)	2001-
present	FS 400 Senior Seminar (one lecture)	2002-present
	FS 600 Food Science Graduate Seminar	1999-2000

**New Courses Developed**

FS 622 Nutraceuticals and Functional Foods (2 credits)

**Honors Program Committees**

Gregory Richard Kapp, B.S., '99	Honor thesis	1998-1999
	“Role of resveratrol in the prevention of cancer”	
Katherine Myers, B.S., '03	Food Science Summer Scholars	2002
	“Antioxidant and Antiproliferative Activities of Onions”	
Katherine Myers, B.S., '03	Honor’s thesis	2002-2003

“Antioxidant and Antiproliferative Activities of Onions”  
 Erin Laing Ohmann, B.S., '04 Food Science Summer Scholars 2003  
 “Phytochemical Profiles of Colored Corn Varieties”

**Current Undergraduate Advisees**

Chase Morgan	Food Science	BS	2001-
Valerie Kasztejna	Food Science	BS	2002-
Matthew Ginsberg	Food Science	BS	2003-
Allison Ross	Food Science	BS	2003-

**Completed Undergraduate Advisees**

Zachary Pollack Caplan	Food Science	BS	1997-2001
Sylvia Wing-San Ho	Food Science	BS	1997-2001
David Aldo Tisi	Food Science	BS	1997-2001
Becky Claire Woolery	Food Science	BS	1997-2001
Abigail Denecke (transferred)	Food Science	BS	1999-2001
Tomoko Matsukawa (transferred)	Food Science	BS	2001-2002
Grace Wang	Food Science	BS	1999-2003

**Current Undergraduate Research Advisees**

Katherine Myers	FS 499 & Honor thesis	2003
Cheri Chan	Biology FS499	2002-2003
Angela Shields	Nutrition FS499	2003

**Completed Undergraduate Research Advisees**

Connie S. Liu	Biology FS499	1997-1998
Gregory Richard Kapp	Food Science FS499 & Honor thesis	1998-1999
Eva Barbara Bieniek	Biology FS499	1998-1999
Andrew Charles Seaberg	Food Science FS499	1998-1999
Nuttawee Niamsiri	Food Science	1998
David Noah Feuerman	Food Science FS499	1999
Sujin Tae Lee	Food Science FS499	1999-2000
Thudnatkorn Jiratanan	Food Science FS499	2000
Melissa Hu	Biology FS499	2000
Debby Hoi-Yee Wong	Food Science FS499	2000-2001
Catherine Kim	Biology FS499	2001
Jennifer Tsai	Food Science FS499	2001-2002
Katherine Yamamoto	Food Science FS499	2002

**Current Teaching Assistants**

Kelly Lorena Wolfe	Graduate	FS210	2003
Jennifer Nicole Gruner	Graduate	FS210	2003

Kafui Adam	Graduate	FS 621	2003
Ariya Chiralertpong	Graduate	FS210	2004
Chia-Hsin Ju	Graduate	FS 210	2004
Jessica Lammers	Undergraduate	FS 210	2004
Erin Ohmann	Undergraduate	FS 210	2004
Yi-Fang Chu	Graduate	FS 622	2004

## **EXTENSION RESPONSIBILITIES**

### **Extension Presentations**

“Health Benefits of Fruits and Vegetables: Opportunities for New York Agriculture”. 2004 Empire State Fruit and Vegetable Expo. Rochester, NY, February 11, 2004.

“Antioxidants, Functional Foods and Health Benefits: What are the Opportunities and Challenges in Agriculture?” 2003 Agriculture and Food Systems In-service, Cornell Cooperative Extension, Cornell University, Ithaca, NY, November 11, 2003.

“Antioxidants of Whole Grains: What do We Really Know?” Cornell Associates Program, Cornell University, Geneva, NY, October 10, 2003.

“Functional Foods and Human Health”. The 2003 NY State Agricultural Society Annual Meeting: Food for Thought – Food for Life. Syracuse, NY, January 9, 2003.

“Potential Synergy in Health Benefits from Fruits and Vegetables”. Experimental Biology 2002, New Orleans, LA, April 20, 2002.

“Health Benefits of Small Fruits”. Small Fruits Juice Technology Workshop, Cornell University, New York State Agricultural Experiment Station, Geneva, NY, February 15, 2002.

“An Apple a Day Keeps Cancer at Bay”. Hudson Valley Fruit Growers’ School, Cornell Cooperative Extension Hudson Valley Regional Fruit Program, Hudson Valley, NY, February 12, 2002.

“An Apple a Day Keeps Cancer at Bay”. Eastern New York Tree Fruit Schools, Cornell Cooperative Extension Northeastern NY Area Commercial Fruit Program, Lake George, NY, February 11, 2002.

“Dietary Antioxidants and Health”. The 106<sup>th</sup> STANYS Annual Conference, Science Teachers Association of New York State, Ellenville, NY, November 4-6, 2001.

“Health Benefits of Natural Antioxidants”. Western New York IFT Symposium: Natural Antioxidants for the Food industry: Functional Properties and Health Benefits, Cornell University, Geneva, NY, September 20, 2001.



“How to Keep You Healthy: New Concept in Antioxidants”. After-Dinner Talk of Advisory Meeting, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY, April 5, 2001.

**GRADUATE FIELD MEMBERSHIPS**

Food Science and Technology  
 Environmental Toxicology  
 Horticulture  
 Risk Analysis, Communication and Policy (minor field)

**GRADUATE MAJORS**

**Current: 12 (one M.S. and 11 Ph.D. students)**

Kelly Wolfe	Food Science	M.S./Ph.D.	2000- present
Kafui Adam	Food Science	Ph.D.	2000- present
Jeanelle Boyer	Toxicology	Ph.D.	2001- present
Jie Sun	Food Science	Ph.D.	2001- present
Thudnatkorn Jiratanan	Food Science	M.S./Ph.D.	2001- present
Yi-Fang Chu	Food Science	Ph.D.	2001- present
Hyungeun Yoon	Food Science	Ph.D.	2002- present
Dana Felice	Toxicology	Ph.D.	2002- present
Jun Yang	Food Science	Ph.D.	2002- present
Chang-Shu Liu	Food Science	Ph.D.	2002- present
Jennifer Nicole Gruner	Food Science	M.S.	2002- present
Elena Vayndorf	Toxicology	Ph.D.	2003- present

**Total Completed: 7 (6 M.S. and one Ph.D. students)**

Yan-Ho Arnold Leung	Food Science	M.S.	1997-1999
	Research scientist at the International Food Network		
Marian Eberhardt	Food Science	M.S.	1998-2000
	Ph.D. student at University of Illinois		
Young-Jun Kim	Food Science	Ph.D.	1997-2001
	Assistant professor in South Korea		
Adalia Espinosa	Food Science	M.S.	1999 –2001
	Research scientist at General Mills		
Veronica Dewanto	Food Science	M.S.	2000- 2002
	Manager, Mega Marine Pride, Indonesia		
Kelly Wolfe	Food Science	M.S.	2000- 2002
	Ph.D. student, Cornell University		
Thudnatkorn Jiratanan	Food Science	M.S.	2001- 2003
	Ph.D. student, Cornell University		

**GRADUATE MINORS**

**Current: 14 (4 M.S. and 10 Ph.D. students)**

Tim Sontag	Nutrition	M.S./Ph.D.	1999 - present
Sasitorn Chantanawarangoon	Food Science	Ph.D.	2000 – present
Jiyoung Ahn	Nutrition/Toxicology	Ph.D.	2002- present
Ashley D'Ann Koh	Food Science	M.S.	2002- present
Adirek Rugkong	Horticulture	Ph.D.	2003- present
Michael T. Okamoto	Nutrition/Food Sci	M.S.	2003- present
Wen-Chyan (Jacky) Tsai	Food Sci/Food Chem	M.S.	2003- present
Manoi Khanitta	Food Sci/Food Chem	Ph.D.	2003- present
Gregory Hostetler	Horticulture	M.S./Ph.D.	2003- present
Hongquan Liang	Food Sci/Food Chem	Ph.D.	2003- present
Siow Ying Tan	Food Sci/Toxicology	Ph.D.	2003- present
Illeme A. Bonsi	Food Sci/Food Chem	M.S.	2003- present
Fanjaniaina Razafimbelo	Horticulture	Ph.D.	2004- present
Jian Kong	Food Sci/Food Chem	Ph.D.	2004- present

**Total Completed: 0****REPRESENTATIVE PROFESSIONAL ACTIVITIES****PROFESSIONAL SOCIETIES**

American Association for the Advancement of Science (AAAS)  
 Institute of Food Technologists (IFT)  
 Division of Food Chemistry  
 Division of Nutrition  
 Division of Nutraceuticals and Functional Foods  
 American Chemical Society (ACS)  
 Division of Agricultural and Food Chemistry  
 American Society for Nutritional Sciences (ASNS)  
 American Dairy Science Association (ADSA)  
 American Chinese Society of Toxicology

**COMMITTEE ASSIGNMENTS****International/National**

Organizing Committee, International Congress on Antioxidants 2004  
 Phytochemical Advisory Committee, Produce for Better Health Foundation 2004-present  
 Co-Chair of Nutrition Division Symposium, IFT 2004 Annual Meeting 2004  
 Co-Chair of Whole Grain Symposium, AACC Annual Meeting 2004  
 Scientific Advisory Committee, Whole Grains Council, Boston, MA 2003-present  
 International Advisory Committee for Whole Grain Conference 2003-2005  
 Chair of Antioxidant Session, American Aging Association Meeting 2003  
 Scientific Review Committee, China Bridges International Fellowship Fund (US) 1997-present

**University and College**

Cornell Tang Scholar/Fellowship Committee, Cornell University	2000-present
College Visions Task Force Committee, College of Agri & Life Science	2001-2003
College Diversity Committee, College of Agri. & Life Science	2002-present
	2002-present
Faculty Retention and Mentoring Committee, AHDRC, CALS	2002-present
Faculty Advisor, Chinese Students and Scholars Association at Cornell	1998-2001

### **Department**

Awards Committee	2002-present
Food Genomics Ad Hoc Committee, Department of Food Science	2001-present
Assistantship Committee, Field of Food science and Technology	1998-present
Seminar Committee, Chair, Field of Food Science and Technology	1999-2000

## **REPRESENTATIVE PROFESSIONAL CONTRIBUTIONS**

### **CONFERENCES/WORKSHOPS/In-Service Participation (since September 1997)**

- Liu, R.H. Health Benefits of Fruits and Vegetables: Opportunities for New York Agriculture. 2004 Empire State Fruit and Vegetable Expo. Rochester, NY, February 11, 2004.
- Liu, R.H. Antioxidants, Functional Foods and Health Benefits: What are the Opportunities and Challenges in Agriculture? 2003 Agriculture and Food Systems In-service, Cornell Cooperative Extension, Cornell University, Ithaca, NY, November 11, 2003.
- Wolfe, K.L. and Liu, R.H. Apple peel powder – a potential value-added food ingredient for functional foods. Institute of Food Technologists, IFT Annual Meeting, Chicago, IL, July 12-16, 2003.
- Sun, J. and Liu, R.H. Antiproliferative activity of apples. Institute of Food Technologists, IFT Annual Meeting, Chicago, IL, July 12-16, 2003.
- Adom, K.K., Sorrells, M. and Liu, R.H. Phytochemical profiles and total antioxidant activity of wheat varieties. Institute of Food Technologists, IFT Annual Meeting, Chicago, IL, July 12-16, 2003.
- Liu, R.H. Health benefits of phytochemicals of fruits and vegetables. American Aging Association Meeting: Nutritional Modulation of Aging and Age-Related Diseases, Baltimore, MD, June 7-9, 2003.
- Liu, R.H. New Insights into the Health Benefits of Whole Grains: Grain Species, Variety and Processing”, Nutrition and Metabolism Program, Experimental Biology 2003, San Diego, CA, April 15, 2003.
- Liu, R.H. Functional Foods and Human Health. The 2003 NY State Agricultural Society Annual Meeting: Food for Thought – Food for Life. Syracuse, NY, January 9, 2003.
- Liu, R.H. Health Benefits of Phytochemicals in Functional Foods. Nutraceutical and Functional Food Division Symposium: Natural Health Products and Dietary Supplements. IFT Annual Meeting, Anaheim, CA, June 15-19, 2002.
- Liu, R.H. Potential Synergy in Health Benefits from Fruits and Vegetables. Experimental Biology 2002, New Orleans, LA, April 20, 2002.

- Liu, R.H. Health Benefits of Fruits and Vegetables are from Additive and Synergistic Combination of Phytochemicals. Fourth International Congress for Vegetarian Nutrition, Loma Linda University, Loma Linda, CA, April 8-11, 2002.
- Liu, R.H. Health Benefits of Fruits and Vegetables. International Scientific Conference on Plant Based Nutrition, Philadelphia, PA, February 16, 2002.
- Liu, R.H. Health Benefits of Small Fruits. Small Fruits Juice Technology Workshop, Cornell University, New York State Agricultural Experiment Station, Geneva, NY, February 15, 2002.
- Liu, R.H. An Apple a Day Keeps Cancer at Bay. Hudson Valley Fruit Growers' School, Hudson Valley, NY, February 12, 2002.
- Liu, R.H. An Apple a Day Keeps Cancer at Bay. Eastern New York Tree Fruit Schools, Lake George, NY, February 11, 2002.
- Liu, R.H. Dietary Antioxidants and Health. The 106<sup>th</sup> STANYS Annual Conference, Science Teachers Association of New York State, Ellenville, NY, November 4-6, 2001.
- Liu, R.H. Health Benefits of Natural Antioxidants. Western New York IFT Symposium: Natural Antioxidants for the Food industry: Functional Properties and Health Benefits, Cornell University, Geneva, NY, September 20, 2001.
- Liu, R.H. New insights into the Health Benefits of Phytochemicals. FASEB Summer Conference: Molecular Mechanisms of Regulation by Dietary Constituents, the Vermont Academy, Saxtons River, Vermont, August 18-23, 2001.
- Liu, R. H. Potential synergy in health outcomes from combining processed fruits. Nutrition Division Symposium: How Processing can Optimize the Phytonutrient Benefits of fruits and vegetables. Institute of Food Technologists, IFT Annual Meeting, New Orleans, Louisiana, June 23-27, 2001.
- Kim, Y. J., Rychlik, J. L., Russell, J. B., and Liu, R. H. In vitro production of conjugated linoleic acid (CLA) by ruminal bacteria and identification of *Megasphaera elsdenii* as a *trans*-10, *cis*-12 CLA isomer producing bacterium. Institute of Food Technologists, IFT Annual Meeting, New Orleans, Louisiana, June 23-27, 2001.
- Chen, B. Q., Zhu, Y. Liu, J., Kim, Y. J., Xue, Y. B., Liu, R. H. Conjugated linoleic acid (CLA) Enhances Cell Apoptosis and Inhibits Cell Proliferation in Mice Forestomach Cancer Model. Institute of Food Technologists, IFT Annual Meeting, New Orleans, Louisiana, June 23-27, 2001.
- Liu, R. H., Eberhardt, M. V., Lee, C.Y. Antioxidant and Antiproliferative Activities of Grapes. Institute of Food Technologists, IFT Annual Meeting, New Orleans, Louisiana, June 23-27, 2001.
- Liu, R. H. Health benefits of apples are attributed to the synergistic combination of phytochemicals". The First International Conference on Food Synergy, Washington, DC, May 10-11, 2001.
- Liu, R. H. and Lee, C. Y. An apple a day may keep cancer at bay. Agricultural Research and Education Serving the Nation in Food and Health: A University Exhibition and Reception on Capitol Hill, Capitol Hill, Washington, DC, March 6, 2001.
- Liu, R. H. Health Benefits of Phytochemicals. 4<sup>th</sup> International Symposium on Nutraceuticals and Functional Ingredients: Scientific and Global Perspectives, Geneva, Switzerland, April 24-26, 2001.
- Kim, Y-J., Lee, S. T., and Liu, R. H. Increase of conjugated linoleic acid (CLA) in fermented milk by *Lactococcus lactis*. ADSA-ASAS Joint Meeting, Baltimore, MD, July 24-28, 2000.

- Oh, S., Chai, C. H., Kim, S., Kim, Y-J., Liu, R. H., Mim, H. S., and Worobo, R. W. Comparison among acid resistance, bile tolerance, assimilation of cholesterol, deconjugation activity, and production of conjugated linoleic acid by *Lactobacillus acidophilus* strains. ADSA-ASAS Joint Meeting, Baltimore, MD, July 24-28, 2000.
- Eberhardt, M. V., Lee, C. Y., and Liu, R. H. Apple exhibits strong antioxidant and anticancer activities. Institute of Food Technologists, 2000 Annual Meeting Dallas, 2000.
- Kim, Y-J., Liu, R. H., Bond, D. R., and Russell, J. B. The linoleic acid isomerase of *Butyrivibrio fibrisolvens* and the production of conjugated linoleic acid. Institute of Food Technologists, 2000 Annual Meeting Dallas, 2000.
- Liu, R. H. Bio-active Compounds from Fruits and Vegetables in the Prevention of Cancer. International Conference: Managing Bio-Resources and Bio-Diversity: Agriculture of the New Century”, National Taiwan University, Taiwan, April 14-16, 2000.
- Liu, R. H. Hepatocyte model for in vitro antiviral screen. 14<sup>th</sup> Cornell Biotechnology Symposium: impacts on science and society. Cornell University, Ithaca, NY., October 11, 1999.
- Leung, Y. H., and Liu, R. H. cis-9, trans-11-Conjugated linoleic acid isomer exhibits strong antioxidant activity. Institute of Food Technologists, Chicago, July 1999.
- Kim, Y., Bauman, D. E., Barbano, D. M., and Liu, R. H. Selective increase in conjugated linoleic in milkfat by crystallization. Institute of Food Technologists, Chicago, July 1999
- Liu, R. H. Functional foods and health in next century. Sino-US Symposium on Agricultural Biotechnology. Yangling, P.R. China, July 1999.
- Liu, R. H., Jacob, J.R., Roneker, C.A., Bayer, V., Ascenzi, M., and Tennant, B. C. Infection of primary woodchuck hepatocytes with serum and cell culture derived woodchuck hepatitis virus in vitro. Molecular Biology of Hepatitis B Viruses. Institut Pasteur, Paris, France, September 1997.

#### **RECENT INVITED PRESENTATIONS (since April 1998)**

1. “Health benefits of whole grains: species, variety and processing”. 2004 American Association of Cereal Chemists (AACC) Annual Meeting, San Diego, CA, September 19-22, 2004.
2. “Potential Synergy of Phytochemicals in Cancer Prevention: Mechanism of Action”. American Institute for Cancer Research (AICR) Annual Conference: International Research Conference on Food, Nutrition, and Cancer, Washington, DC, July 15-16, 2004.
3. “Health Benefits of Fruits, Vegetables and Whole Grains: Mechanism of Action”. Nutrition Division Symposium: An Update on Antioxidants in Fruits, Vegetables and Whole Grains. IFT 2004 Annual Meeting, Las Vegas, Nevada, July 12-16, 2004.
4. “Effects of processing on the antioxidant activity and phytochemical bioavailability in fruits and vegetables”. Fruit and Vegetable Products Division Symposium: Practical Applications of Antioxidant Measurements for Fresh and Processed Fruits and Vegetables. IFT 2004 Annual Meeting, Las Vegas, Nevada, July 12-16, 2004.
5. “Cell culture models for antioxidant research: mechanism of action and bioavailability”. International Congress on Antioxidants, Orlando, FL, June 16 – 18, 2004.
6. “Health Benefits of Fruits and Vegetables: Opportunities for New York Agriculture”. 2004 Empire State Fruit and Vegetable Expo. Rochester, NY, February 11, 2004.

7. "Health Benefits of Whole Grains: Grain Species, Variety and Processing". The Center of Biotechnology, Monterrey, N.L., Mexico, November 27, 2003.
8. "Phytochemicals in Whole Foods versus Dietary Supplements", The Center of Biotechnology, Monterrey, N.L., Mexico, November 25, 2003.
9. "Antioxidants, Functional Foods and Health Benefits: What are the Opportunities and Challenges in Agriculture?" 2003 Agriculture and Food Systems In-service, Cornell Cooperative Extension, Cornell University, Ithaca, NY, November 11, 2003.
10. "Antioxidants of Whole Grains: What do We Really Know?" Cornell Associates Program, Cornell University, Geneva, NY, October 10, 2003.
11. "Phytochemicals in Whole Grains: Species, Variety, Processing and Health Benefits", Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN, September 23, 2003.
12. "Health Benefits of Phytochemicals of Fruits and Vegetables", American Aging Association Meeting, Baltimore, Maryland on June 7-9, 2003.
13. "Potential Health Benefits of Fruits and Vegetables", Seminar Series in the Department of Horticulture, Cornell University, Ithaca, NY, May 1, 2003.
14. "New Insights into the Health benefits of whole grains: Grain Species, Variety and Processing", Nutrition and Metabolism Program, Experimental Biology 2003, San Diego, CA, April 15, 2003.
15. "Health-related Phytochemicals in Plants". Seminar Series in the Department of Plant Breeding, Cornell University, Ithaca, NY, March 4, 2003.
16. "Functional Foods and Human Health". The 2003 NY State Agricultural Society Annual Meeting: Food for Thought – Food for Life. Syracuse, NY, January 9, 2003.
17. "Phytochemicals in Functional Foods: Implications for Chronic Disease Prevention". Symposium for Food Science Centennial Celebration: Building on a Century of Excellence: Food Science at Cornell University, Ithaca, NY, October 13-15, 2002.
18. "Phytochemicals in Whole Foods vs Antioxidants in Pills". Seminar Series in the Botanicals Research Center, and Department of Foods and Nutrition, Purdue University, West Lafayette, IN, September 27, 2002.
19. "Current Antioxidant and Phytochemical Research". School of Public Health, Harbin Medical School, Harbin, P.R. China, July 29, 2002.
20. "Health Benefits of Phytochemicals in Functional Foods". Nutraceutical and Functional Food Division Symposium: Natural Health Products and Dietary Supplements. IFT Annual Meeting, Anaheim, CA, June 15-19, 2002.
21. "Potential Synergy of Phytochemicals in Fruits and Vegetables: Implications for Chronic Disease Prevention". Harvard School of Public Health, Harvard University, Boston, Massachusetts, May 10, 2002.
22. "Potential Synergy in Health Benefits from Fruits and Vegetables". Experimental Biology 2002, New Orleans, LA, April 20, 2002.
23. "Health Benefits of Fruits and Vegetables are from Additive and Synergistic Combination of Phytochemicals". Fourth International Congress for Vegetarian Nutrition, Loma Linda University, Loma Linda, CA, April 8-11, 2002.
24. "Health Benefits of Fruits and Vegetables". International Scientific Conference on Plant Based Nutrition, Philadelphia, PA, February 16, 2002.
25. "Health Benefits of Small Fruits". Small Fruits Juice Technology Workshop, Cornell University, New York State Agricultural Experiment Station, Geneva, NY, February 15, 2002.

26. "An Apple a Day Keeps Cancer at Bay". Hudson Valley Fruit Growers' School, Hudson Valley, NY, February 12, 2002.
27. "An Apple a Day Keeps Cancer at Bay". Eastern New York Tree Fruit Schools, Lake George, NY, February 11, 2002.
28. "Health Benefits of Phytochemicals". Graduate Seminar Series in Food Science and Technology, Department of Food Science, Cornell University, Ithaca, NY, February 5, 2002.
29. "Dietary Antioxidants and Health". The 106<sup>th</sup> STANYS Annual Conference, Science Teachers Association of New York State, Ellenville, NY, November 4-6, 2001.
30. "Health Benefits of Natural Antioxidants". Western New York IFT Symposium: Natural Antioxidants for the Food industry: Functional Properties and Health Benefits, Cornell University, Geneva, NY, September 20, 2001.
31. "New insights into the Health Benefits of Phytochemicals". FASEB Summer Conference: Molecular Mechanisms of Regulation by Dietary Constituents, the Vermont Academy, Saxtons River, Vermont, August 18-23, 2001.
32. "Health Benefits of Phytochemicals in Functional Foods". Bell Institute of Health and Nutrition, General Mills, Minneapolis, MN, August 8, 2001.
33. "Antioxidant and antiproliferative activities of grapes". Food Chemistry: Lipids, Emulsions and Antioxidants. IFT Annual Meeting, New Orleans, LA, June 23-27, 2001.
34. "Potential synergy in health outcomes from combining processed fruits". Nutrition Division Symposium: How processing can optimize the phytonutrient benefits of fruits and vegetables. IFT Annual Meeting, New Orleans, LA, June 23-27, 2001.
35. "Health Benefits of Apples are Attributed to the Synergistic Combination of Phytochemicals". The First International Conference on Food Synergy, Washington, DC, May 10-11, 2001.
36. "Dietary Antioxidants and Health". CIFS Advisory Council Meeting, Cornell Institute of Food Science, Cornell University, Ithaca, NY, April 30, 2001.
37. "Health Benefits of Phytochemicals". 4<sup>th</sup> International Symposium on Nutraceuticals and Functional Ingredients: Scientific and Global Perspectives, Geneva, Switzerland, April 24-26, 2001.
38. "How to Keep You Healthy: New Concept in Antioxidants". After-Dinner Talk of Advisory Meeting, College of Agriculture and Life Sciences, Cornell University, Ithaca, NY, April 5, 2001.
39. "How to Keep You Healthy: New Concept in Antioxidants". Seminar Series in the Department of Animal Science/Biotech Center, University of Connecticut, Storrs, CT, March 30, 2001.
40. "Role of CLA in the Prevention of Cancer". "Piaceri della Vita", organized by the Consorzio Ricerca Filiere Lattier-Casearia/Italy, Ragusa, Italy, and Cambridge School of Culinary Arts, Boston March 22-25, 2001.
41. "Health Benefits of Phytochemicals." Graduate Field Seminar Series in Toxicology, Cornell University, Ithaca, NY, March 9, 2001.
42. "Health Benefits of Phytochemicals" Cornell Associates Program, the Statler Hotel, Cornell University, January 18-19, 2001.
43. "Health Benefits of Phytochemicals in Fruits." North American Berry Conference, Niagara Falls, Ontario, Canada. January 10-14, 2001.
44. "New Concepts in Antioxidant". College of Life Science, Si-Chuan University, Chengdu, Si-Chuan Province, P. R. China, January 8, 2001.

45. "Modernization and Globalization of Traditional Chinese Medicine (TCM)". Si-Chuan University, Sichuan Province, P. R. China, January 8, 2001.
46. "Modernization of Traditional Chinese Medicine (TCM) and Explore Treasures in TCM". College of Pharmacology, Harbin Medical School, Harbin, P. R. China, January 6, 2001.
47. "Functional Foods in the United States". Harbin Medical School, Harbin, P.R. China, January 5, 2001.
48. "New Concepts in Antioxidant". College of Life Science and Technology, Ji-Nan University, Guangzhou, P. R. China, January 3, 2001.
49. "How to Screen Bio-Active Compounds from Chinese Traditional Medicine (TCM)". Tsing Hua Yuan Xing Pharmaceuticals, Hi-Tech Industrial Park, Shen-Zhen, Guangdong Province, P. R. China, December 30, 2000.
50. "Modernization and Globalization of Traditional Chinese Medicine (TCM)". Symposium on Genome Project and Modernization and Internationalization of Traditional Chinese Medicine, Guangzhou, P. R. China, December 30, 2000.
51. "New Concepts in Antioxidants". College of Life Sciences, Zhong Shan (Sun Yat-Sen) University, Guangzhou, P. R. China, December 29, 2000.
52. "New Insights into Phytochemicals in Fruits and Vegetables." Graduate Field Seminar Series in Horticulture, Cornell University, Ithaca, NY, October 26, 2000.
53. "Screening for Bio-active Compounds from Chinese Herbal Medicine: New Opportunities for Agriculture and Pharmaceutical Companies". US Expert Delegation to Jiangsu Provincial Conference on Agri/Biotechnology, Nanjing, P.R. China, October 2000.
54. "Phytochemicals Each Day Keep Cancer Away". Ad Hoc Discussion Group, Breast Cancer and Environmental Risk Factors in New York States, September 28, 2000.
55. "New Insights into the Health Benefits of Antioxidant". Graduate Seminar Series in Food Science and Technology, Department of Food Science, Cornell University, Ithaca, NY, September 12, 2000.
56. "New Concepts in Antioxidants". School of Public Health, Harbin Medical School, Harbin, P.R. China, August 16, 2000.
57. "Health Benefits of Phytochemicals". Department of Pharmacology, Harbin Medical School, Harbin, P.R. China, August 15, 2000.
58. "The effects of CLA and other active compounds on human health". International Conference: Cheese Art 2000, the Consorzio Ricerca Filiere Lattier-CaseariaItaly, Ragusa, Italy, May 23-28, 2000.
59. "Bio-active Compounds from Fruits and Vegetables in the Prevention of Cancer". International Conference: Managing Bio-Resources and Bio-Diversity: Agriculture of the New Century", National Taiwan University, Taiwan, April 14-16, 2000.
60. "Natural Bio-active Compounds for Health Promotion and Disease Prevention". Food Science and Technology Seminar, Department of Food Science and Technology, Cornell University, New York State Agricultural Experiment Station, Geneva, NY, March 2000.
61. "An apple a day keeps the doctor away." A keynote speech for the Annual Meeting of New York State Apple Research and Development Program/New York Apple Research Association, Geneva, NY, December 1999.
62. "Hepatocyte model for in vitro antiviral screen." Kunming Medical School, Kunming, P.R. China, September 1999.
63. "Functional foods and human health." Wuliangye Co., LTD., Yibin, Sichuan, P.R. China, September 1999.



64. "Hepatocyte model for in vitro antiviral screen." Science and Technology Commission of Yibin, Sichuan, P.R. China, September 1999.
65. "Functional foods and health in next century." Sino-US Symposium on Agricultural Biotechnology, Yangling, P.R. China, July 1999.
66. "In vitro hepatocyte model of hepatitis B virus." Harbin Medical School, Harbin, P.R. China, July 9, 1999.
67. "Functional foods and health in next century." School of Public Health, Harbin Medical School, Harbin, P.R. China, July 8, 1999.
68. "In vitro hepatocyte model of hepatitis B virus infection." Seminar in Chinese Medical Academy of Science, and Institute of Cardiovascular Disease, Qinghai, P.R. China, July 5, 1999.
69. "In vitro hepatocyte model of hepatitis B virus infection." Seminar in Liver Diseases Section, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD, July, 1998.
70. "In vitro hepatocyte model of hepatitis B virus infection." Graduate Field Seminar Series in Toxicology, Cornell University, Ithaca, NY, April 1998.
71. "WHV infection in primary hepatocytes in culture." Gastrointestinal Unit, Department of Clinical Sciences, College of Veterinary Medicine, Cornell, Ithaca, NY, April 1998.

## RESEARCH PANELS

- An Update on Whole Grain Research: Species, Variety, Structure, Processing and Health Benefits. Co-Chair, 2004 American Association of Cereal Chemists (AACC) Annual Meeting, San Diego, CA, September 19-22, 2004.
- Can the Antioxidant and Anti-inflammatory Properties of Fruits, Vegetables and Drinks be Expressed as Beneficial Effects in Aging and Age-Related Diseases? Chair, American Aging Association Meeting, Baltimore, Maryland, June 7-9, 2003.
- Frontiers in Grains and Whole Grain Research: Enhancing the Health Benefits. Len Marquart, Gary Fulcher, David Somers, Rui Hai Liu, David Klurfeld, and John Milner, Experimental Biology 2003, Nutrition and Metabolism Program, San Diego, CA, April 15, 2003.
- Food for Thought: Envisioning agriculture's future. Susan Henry, Nathan Rudgers, Jane Brody, Rui Hai Liu, John Rejman, Jeffrey Turner, and Andy Wadsworth, The 2003 NY State Agricultural Society 171<sup>st</sup> Annual Meeting, Syracuse, NY, January 9, 2003.
- Reevaluation of Reductionism and an Emphasis on Food Synergy & Dietary Patterns. Mark Messina, Rui Hai Liu, Maurice Bennink, and David Jacobs, Experimental Biology 2002, New Orleans, LA, April 20, 2002.
- Nutrients, Foods and Dietary Patterns. David Jacobs, Winston Craig, Ingrid Hoffmann and Rui Hai Liu, Fourth International Congress for Vegetarian Nutrition, Loma Linda University, Loma Linda, CA, April 8, 2002.

## CONSULTING

- Scientific Advisory Board, the Ministry of Science and Technology, P.R. China, 2000-present  
Consultant, Yangling Agricultural High-Tech Industry Demonstration Zone, Yangling, China, 1999-present.

## RESOURCE FOR MEDIA

TV, Radio and News Interviews:

More than 70 interviews including the Associated Press, Reuters, ABC, CNN, CBS, the BBC, Science News, AAAS, ACS, the New York Times, and Reader's Digest.

## RESEARCH and EXTENSION PUBLICATIONS

### I. Peer-reviewed Articles

1. Liu, C-S, Glahn, R. P., and Liu, R.H. Assessment of carotenoid bioavailability of whole foods using a Caco-2 cell culture model coupled with an in vitro digestion. *J. Agric. Food Chem.* (in press)
2. Boyer, J. and Liu, R.H. Apple phytochemicals and their health benefits. *Nutrition Journal* (in press).
3. Jiratanan, T. and Liu, R.H. Antioxidant activity of processed table beets (*Beta vulgaris var conditiva*) and green beans (*Phaseolus vulgaris L.*). *J. Agric. Food Chem.* 52 (9): 2004.
4. Adom, K.K., Sorrells, M.E., and Liu, R.H. Phytochemicals and antioxidant activity of wheat varieties. *J. Agric. Food Chem.* 51 (26): 7825-7834, 2003.
5. Meyers, K.K., Watkins, C.B., Pritts, M.P., and Liu, R.H. Antioxidant and antiproliferative activities of strawberries. *J. Agric. Food Chem.* 51 (23): 6887-6892, 2003.
6. Liu, R.H. Health benefits of fruits and vegetables are from additive and synergistic combination of phytochemicals. *Am. J. Clin. Nutr.* 78: 517S-520S, 2003.
7. Chen, B.Q., Yang, Y.M., Gao, Y.H., Liu, J.R., Xue, Y.B., Wang, X.L., Zheng, Y.M., Zhang, J.S., Liu, R.H. Inhibitory effects of c9, t11-conjugated linoleic acid on invasion of human gastric carcinoma cell line SGC-7901. *World J Gastroenterol.* 9(9):1909-14, 2003.
8. Liu, R.H. Protective role of phytochemicals in whole foods: Implications for chronic disease prevention. *Applied Biotechnology, Food Science and Policy* 1(1): 39-46, 2003.
9. Wolfe, K. and Liu, R.H. Apple peels as a value-added food ingredient. *J. Agric. Food Chem.* 51 (6): 1676-1683, 2003.
10. Liu, R.H. and Sun, J. Antiproliferative activity of apples is not due to phenolic-induced hydrogen peroxide formation. *J. Agric. Food Chem.* 51 (6): 1718-1723, 2003.
11. Yeung, C.K., Glahn, R.P., Wu, X., Liu, R.H., and Miller, D.D. Iron bioavailability and antioxidant activity of raisins. *J Food Sci* 65 (2): 701-705, 2003.
12. Chen, B. Q., Xue, Y. B, Liu, J.R., Yang, Y.M., Zheng, Y.M., Wang, X.L., Liu, R. H. Inhibition of conjugated linoleic acid on mouse forestomach neoplasia induced by benzo(a)pyrene and chemopreventive mechanisms. *World J. Gastroenterol* 9(1):44-49, 2003.
13. Wolfe, K., Wu, X. and Liu, R. H. Antioxidant activity of apple peels. *J. Agric. Food Chem.* 51 (3): 609-614, 2003.
14. Sun, J., Chu, Y-F., Wu, X., and Liu, R.H. Antioxidant and antiproliferative activities of fruits. *J. Agric. Food Chem.* 50 (25): 7449-7454, 2002.
15. Boato, F., Wortley, G. M., Liu, R. H., and Glahn, R. P. Red grape juice inhibits iron availability: application of an in vitro digestion/caco-2 cell model. *J. Agric. Food Chem.* 50 (23): 6935-6938, 2002.

16. Chu, Y-F., Sun, J., Wu, X., and Liu, R. H. Antioxidant and antiproliferative activities of vegetables. *J. Agric. Food Chem.* 50 (23): 6910-6916, 2002.
17. Gunes, G., Liu, R. H., and Watkins, C. B. Controlled atmosphere effects on postharvest quality and antioxidant activity of cranberry fruits. *J. Agric. Food Chem.* 50 (21): 5932-5938, 2002.
18. Adom, K. K. and Liu, R. H. Antioxidant activity of grains. *J. Agric. Food Chem.* 50 (21): 6182-6187, 2002.
19. Liu, J. R., Li, B., Chen, B., Han, X., Xue, Y., Zheng, Y., and Liu, R. H. Effect of cis-9, trans-11-conjugated linoleic acid on cell cycle of gastric adenocarcinoma cell line (SGC-7901). *World J. Gastroenterol* 8: 224-229, 2002.
20. Dewanto, V., Wu, X., and Liu, R. H. Processed sweet corn has higher antioxidant activity. *J. Agric. Food Chem.* 50 (17): 4959-4964, 2002.
21. Kim, Y-J. and Liu, R. H. Increase of conjugated linoleic acid (CLA) content in milk by fermentation with Lactic Acid Bacteria. *J. Food Sci.* 67 (5): 1731-1737, 2002.
22. Dewanto, V., Wu, X., Adom, K. K., and Liu, R. H. Thermal processing enhances the nutritional value of tomatoes by increasing total antioxidant activity. *J. Agric. Food Chem.* 50 (10): 3010-3014, 2002.
23. Kim, Y. J., Liu, R. H., Rychlik, J. L., and Russell, J. B. The enrichment of a ruminal bacterium (*Megasphaera elsdenii* YJ-4) that produces the *trans*-10, *cis*-12 isomer of conjugated linoleic acid. *J. Applied Microbiology* 92: 976-982, 2002.
24. Liu, R. H. Supplement quick fix fails to deliver (Invited article). *Food Technology International* 1: 71-72, 2002.
25. Liu, M, Li, X. Q., Weber, C., Lee, C. Y., Brown, J., and Liu, R. H. Antioxidant and antiproliferative activities of raspberries. *J. Agric. Food Chem.* 50 (10): 2926-2930, 2002.
26. Chen, B. Q., Xue, Y. B., Lin, H. T., Xue, Y. W., Liu, R. H. The effects of conjugated linoleic acid on the adhesion and migration of B16-MB Mouse Melanoma cells. *J. Health Toxicology* 1:23-26, 2001.
27. Xue, Y. B., Chen, B. Q., Zheng, Y. M., Yuan, L. L., Liu, R. H. Effects of conjugated linoleic acid on the metastasis of mouse melanoma B16-MB. *J. Hygiene Res.* 30 (1):37-39, 2001.
28. Kim, Y-J., Liu, R. H., Bond, D. R., and Russell, J. B. Effect of linoleic acid concentration on conjugated linoleic acid production by *Butyrivibrio fibrisolvens* A38. *Applied and Environmental Microbiology* 66 (12): 5226-5230, 2000.
29. Leung, Y. H., and Liu, R. H. *trans*-10, *cis*-12-Conjugated linoleic acid isomer exhibits stronger oxyradical scavenging capacity than *cis*-9, *trans*-11-conjugated linoleic acid isomer. *J. Agric. Food Chem.* 48 (11): 5469-5475, 2000.
30. Eberhardt, M. V., Lee, C. Y., and Liu, R. H. Antioxidant activity of fresh apples. *Nature* 405: 903-904, 2000.
31. Liu, J., Chen, B., Liu, R. H., Lu, G., Zhu, Y., Han, X. Inhibitory effect of conjugated linoleic acid on human gastric carcinoma cell line. *Journal of Hygiene Research* 28(6): 353-355, 1999.
32. Kim, Y-J. and Liu, R. H. Selective increase in conjugated linoleic acid in milk fat by crystallization. *J. Food Sci.* 64: 792-795, 1999.
33. Liu, R. H., Jacob, J. R. and Tennant, B. C. Chemiluminescent detection of protein molecular weight markers in Western blot techniques. *Biotechniques* 22(4): 594-595, 1997.
34. Liu, R. H. and Hotchkiss, J. H. Potential genotoxicity of chronically elevated nitric oxide: A review. *Mutation Research* 339:73-89, 1995.

35. Liu, R. H., Jacob, J. R., Hotchkiss, J. H., Cote, P. J., Gerin, J. L. and Tennant, B. C. Hepatitis virus surface antigen induces nitric oxide synthesis in hepatocytes: possible role in hepatocarcinogenesis. *Carcinogenesis* 15(12): 2875-2877, 1994.
36. Hotchkiss, J. H., Liu, R. H., Lillard, T. J. Nitric oxide production and catalysis of N-nitroso compound formation by woodchucks (*Marmota monax*) and woodchuck hepatocytes in culture. *ACS Symposium Series* 553: 147-156, 1994.
37. Jacob, J. R., Liu, R. H., Roneker, C., Noronha, F. D., Hotchkiss, J. H. and Tennant, B.C. Characterization and immortalization of woodchuck hepatocytes isolated from normal and hepadnavirus-infected woodchucks (*Marmota monax*). *Experimental Cell Research* 212: 42-48, 1994.
38. Liu, R. H., Jacob, J. R., Hotchkiss, J. H., and Tennant, B. C. Synthesis of nitric oxide and nitrosamine by immortalized woodchuck hepatocytes. *Carcinogenesis* 14(8): 1609-1613, 1993.
39. Liu, R. H., Jacob, J. R., Tennant, B. C., and Hotchkiss, J. H. Nitrite and nitrosamine synthesis by hepatocytes isolated from normal woodchucks (*Marmota monax*) and woodchucks chronically infected with woodchuck hepatitis virus. *Cancer Research* 52: 4139-4143, 1992.
40. Hotchkiss, J. H., Maragos, C. M., and Liu, R. H. Quantifying gastric nitrate and nitrate reductase activity in the normal and achlorhydria stomach. In: Nitrate Contamination: Exposure, Consequences, and Control. I. Bogardi and R. Kuzelka, eds. Springer-Verlag, NY pp.297-307, 1991.
41. Liu, R. H., Baldwin, B., Tennant, B. C. and Hotchkiss, J. H. Elevated formation of nitrate and N-nitrosodimethylamine in woodchucks (*Marmota monax*) associated with chronic woodchuck hepatitis virus infection. *Cancer Research* 51:3925-3929, 1991.
42. Liu, R. H., Conboy, J.J., and Hotchkiss, J. H. Nitrosation by nitro-nitroso derivatives of olefins: a potential mechanism for N-nitrosamine formation in fried bacon. *J. Agric. Food Chem.*, 36(5): 984-987, 1988.

## II. Technical Articles, Reviews, books, ect.

43. Boyer, J. and Liu, R.H. Antioxidants of apples. *New York Fruit Quarterly* 11(4): 11-15, 2003.
44. Liu, R.H. and Wolfe, K.L. Role of plant-based whole foods in the prevention of chronic diseases. *Foods & Food Ingredients Journal of Japan*. 208 (6): 465-490, 2003.
45. Liu, R.H. Health benefits of phytochemicals in functional foods. Food Technology Briefing: Innovative Food Ingredients, pp.2-5, October 2002.
46. Wolfe, K. and Liu, R.H. Apple peels are rich in phytochemicals and have high antioxidant activity. *New York Fruit Quarterly* 10(3): 2002.
47. Liu, R.H. Health benefits of dietary flavonoids: flavonols and flavones. *New York Fruit Quarterly* 10(3): 16-18, 2002.
48. Liu, R. H., Eberhardt, M. V., Lee, C. Y. Health benefits of apples: antioxidant and antiproliferative activities of selected New York apple cultivars. *New York Fruit Quarterly* 10(2): 17, 2002.
49. Weber, C., Liu, M, Li, X. Q., and Liu, R.H. Antioxidant capacity and anticancer properties of red raspberry. *New York Fruit Quarterly* 9(3):25-27, 2001.
50. Liu, R. H., Eberhardt, M. V., Lee, C. Y. Antioxidant and antiproliferative activities of selected New York apple cultivars. *New York Fruit Quarterly* 9(2):15-17, 2001.
51. Liu, R. H. and Espinosa, A. Invited review: Bio-active compounds from fruits and vegetables in the prevention of cancer. In: Agriculture of the New Century: Managing Bio-Resources and Bio-Diversity, National Taiwan University, Taipei, Taiwan, pp.53-59, 2000.
52. Liu, R. H. The production of nitric oxide and N-nitrosamines in normal woodchucks, hepatitis virus-infected woodchucks and isolated hepatocytes. Ph.D. Dissertation. Cornell University 1993.

## III. Extension Publications

1. Liu, R.H. and Lee, C.Y. An apple a day really may keep the doctor away: Cornell Apple findings a boon to NY and US apple industry. In: Impact 2001: Cornell University Addresses Contemporary Issues. NYS College of Agriculture and Life Sciences NYS College of Human Ecology, and Cornell Cooperative Extension, June 2001.
2. Liu, R.H. Cornell Scientist Finds Processed Tomatoes Have Higher Nutritional Value. Cornell Apple findings a boon to NY and US apple industry. In: Impact 2002: Cornell University Addresses Contemporary Issues. NYS College of Agriculture and Life Sciences NYS College of Human Ecology, and Cornell Cooperative Extension, June 2002.
3. Liu, R.H. Health Benefits of Small Fruits. Small Fruits Juice Technology Workshop, Cornell University, New York State Agricultural Experiment Station, Geneva, NY, February, 2002.
4. Liu, R.H. Health benefits of dietary flavonoids: flavonols and flavones. In: Phytonutrients, the database developed by USDA and the Produce for Better Health Foundation. March 29, 2002.

#### **IV. Patents**

1. Liu, R.H. and Kim, Y-J. Selective increase in conjugated linoleic acid in milk fat by crystallization (D-2454). Pending.
2. Liu, R.H., Jacob, J.R., Tennant, B.C. Woodchuck Hepatic Cell Lines Immortalized by Treatment with Lipopolysaccharides. In application. (Licensed).
3. Liu, R.H., Jacob, J.R. An extract of Chinese herbal plant to treat Hepatitis C (D-2627). In application. (Licensed).
4. Liu, R.H., Jacob, J.R., and Tennant, B.C. An extract of Chinese herbal plant to treat Flaviviruses and Pestiviruses (D-2627-2). In application. (Licensed).
5. Liu, R.H., Jacob, J.R., and Tennant, B.C. An extract of Chinese herbal plant as protease inhibitor (D-2627-3). In application. (Licensed).
6. Liu, R.H. Synergistic Combination of Fruit Extracts with Astaxanthin (D-2687). In application.
7. Liu, R.H. Concentration of grape juice (D-2956). In application.
8. Liu, R.H. and Wolfe, K. Apple peel powder with high antioxidant activity (D-3119). In application.

#### **PROFESSIONAL OVERVIEW AND OBJECTIVES**

Rui Hai Liu is an Associate Professor in the Department of Food Science at Cornell University in Ithaca, NY. Liu received his Ph.D. in Toxicology from Cornell University in 1993. He also holds a M.D. in Medicine and a M.S. in Nutrition and Food Toxicology from Harbin Medical School in China. Prior to joining the faculty, Liu was a Research Associate in the Department of Clinical Sciences in the College of Veterinary Medicine at Cornell University.

His effort distribution is 60% research, and 40% teaching. Liu teaches an undergraduate course, Food 210 Food Analysis, and two graduate-level courses, Food 621 Food Lipids and Food 622 Nutraceuticals and Functional Foods. He also participates in a team-taught Food Chemistry course (Food 417 Food Chemistry), lecturing on lipid chemistry and food toxicology.

Dr. Liu's research program focuses on diet and cancer, effect of functional foods/nutraceuticals on chronic disease risks, and active agents in herbal remedies for cancer and hepatitis. Specific interests include: 1) health benefits of phytochemicals in fruits, vegetables and whole grains; 2) food genomics and functional foods for disease prevention and health promotion targeted at cancers, cardiovascular disease, aging, and inflammatory diseases; 3) role of conjugated linoleic acid (CLA) in the prevention of cancer; and 4) screening of natural products and herbal formulations for antiviral activity to hepatitis B and C.