CURRICULUM VITAE

NAME: Barrie P. Bode, Ph.D.

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EDUCATION: B.S., 1984 (Biology) *Magna Cum Laude*, Saint Louis University

Ph.D., 1991 (Biochemistry & Molecular Biology), University of Florida

Positions:

Northern Illinois University, DeKalb, IL

August 2009 - Present

- Professor and Chair, Department of Biological Sciences
- Board Member, Center for Biochemical and Biophysical Studies
  http://www.bios.niu.edu

➢ Research: Role of amino acid transporters and the Golgi membrane protein GOLM1 in human hepatocellular carcinoma cell growth, metabolism, survival and associated signaling pathways, and mouse models of cancer. Design and testing of substrates for cancer diagnosis and therapy, including positron emission tomography.

Saint Louis University, St. Louis, MO

May 2009-August 2009

- Professor, Department of Biology

August 1999 to May 2009:

- Associate Professor, Department of Biology (Tenured, 2004)
  http://bio.slu.edu
- Member, Saint Louis University Liver Center
  http://livercenter.slu.edu/
- Member, Saint Louis University Cancer Center
- Member, Saint Louis University Institutional Review Board
  (2005-2008)

Research: Role of amino acid transporter ASCT2 in human hepatocellular carcinoma cell growth, survival and associated signaling pathways. Physiological regulation of *SLC38* family amino acid transporters SNAT3 and SNAT5 (System N) in liver and skeletal muscle during diabetes and catabolic states.

Massachusetts General Hospital
Harvard Medical School, Boston, MA

October 1998 to August 1999:

- Director, Program in Liver Biology (Division of Surgical Oncology)
- Assistant Professor (Harvard Medical School)
- Investigator, Harvard Clinical Nutrition Research Center

January 1995 to August 1999:

- Research Fellow (Shriners Burns Institute, Boston)

July 1993 to October 1998

- Assistant Biochemist (Massachusetts General Hospital)
- Instructor in Surgery (Harvard Medical School)

Research: Regulation and role of amino acid transport and metabolism in hepatocellular transformation and in catabolic states.

Monsanto Company, Saint Louis, MO

March 1991 to July 1993:

- Postdoctoral Scientist in Liver Biology with Dr. Al P. Li

Research: Cellular/Molecular basis of liver disease and the role of the liver in pathogenesis of disease through the use of *in vitro* and *in vivo* models, as well as the isolation and biochemical characterization of human hepatocytes.

University of Florida College of Medicine, Gainesville, FL

August 1986 to February 1991:

- Graduate Student, Department of Biochemistry & Molecular Biology with Dr. Michael S. Kilberg

Research: Biochemistry of membrane proteins and the regulation of System N-mediated amino acid transport by amino acids in isolated rat hepatocytes.

Academic Awards:

- Chauncey E. Finch Excellence in Mentoring Award, Saint Louis University College of Arts & Sciences, 2003.
- Finalist, William V. Stauder, S.J. Excellence in Teaching in the Natural Sciences, Saint Louis University College of Arts & Sciences, 2003.
- Saint Louis University Faculty Excellence Award, 2003
  Student Government Association

- Saint Louis University Faculty Excellence Award, 2005
  Student Government Association

- Saint Louis University Graduate School, Office of Research Services Administration Award for *Commitment to Excellence in Research and Success in Obtaining Extramural Funding.* April 28th, 2006.

Memberships: American Association for the Advancement of Science 1987 - present
American Association for Cancer Research 1996 – present
American Physiological Society, 1999 – present

Editorial Activities:

Journal of Parenteral & Enteral Nutrition, Current Summaries Board, 1994 -1996
Served as *ad hoc* reviewer for several journals including:

American Journal of Physiology	Cancer
Gastroenterology	International Journal of Cancer
Journal of Parenteral/ Enteral Nutrition	Carcinogenesis
Journal of Cellular Physiology	Digestive Diseases and Sciences
Journal of Surgical Oncology	Journal of Gynecological Oncology
Journal of Surgical Research	Archives of Biochemistry and Biophysics
Metabolism	Journal of Biological Chemistry
Hepatology	Nutrition and Metabolism (BMC)
Surgery	Physiological Genomics
FASEB Journal	Human Pathology
Cancer Research	BioEssays

External grant reviewer for the National Science Foundation and The Wellcome Trust.

Extramural Funding Record (as Principal Investigator):

National Cancer Institute, **Grant # 2R15CA108519-02**" Amino Acid Transporters ASCT2 and LAT1 in Human Hepatocellular Cancer Growth ". (**Principal Investigator**)
08/15/2008 - 07/31/2013, Direct Costs Award....$150,000.

National Cancer Institute, **Grant # 1R15CA108519-01A1**" ASCT2 in Human Liver Cancer Cell Growth and Survival ". (**Principal Investigator**)
04/18/2005 - 03/31/2009, Direct Costs Award....$150,000.

National Cancer Institute, **Grant # 1R29 CA69505-01** "Glutamine Transport in Hepatocellular Transformation". (**Principal Investigator**) 4/1//1997 - 3/31/2003, Direct Costs Award ....$350,000.

Milheim Foundation for Cancer Research, **Grant # 98-31** "Glutamine Transport in Multicellular Hepatoma Spheroids". (**Principal Investigator**) 7/1/1998-6/30/1999. Direct Costs Award….$10,350.

(NIDDK) **Grant# 1-P30 DK40561** "Hepatic Amino Acid Transport During Severe Infection". 9/30/1994-8/31/1995, (**Principal Investigator**) Direct Costs Award...$15,222.

Other Grant Support (as Investigator):

National Institute of General Medical Sciences, **Grant# 5P50 GM21700-23** "Energy-Nitrogen Relationships in Burn Trauma" ((Project 1 in the Burn Trauma Center Grant) **Research Associate, 35% effort**; (R. Tompkins, Director, W. Souba, PI) 12/1/97-11/30/02, Annual Direct Costs Award…$177,553

Shriners Burns Institute (Boston), **Grant # 15854** "Hepatic Glutamine Transport and Acute-phase Protein Synthesis in Burn Injury" **Consultant, 10% effort**; (Wiley Souba, PI)) 1/1/95-12/31/97, Annual Direct Costs Award...$122,559.

National Cancer Institute, **Grant #RO1CA57690** "Glutamine Metabolism in the Tumor-bearing Rat" **Investigator**, **40% effort**; (Wiley Souba, PI)) 5/1/97-4/30/98, Annual Direct Costs Award...$149,119.

Intramural Funding:

Northern Illinois University Research and Artistry Grant, "Glutamine Transporter Signatures in Mouse Models of Hepatocellular Carcinoma" (7/1/2013 – 6/30/2014), $15,000.

Saint Louis University Beaumont Faculty Development Award, "Development and Application of ASCT2 Antibodies", (2/1/04 - 01/30/05), $5,000

Saint Louis University Summer Research Award, "Selective Glutamine Transporter Gene Silencing in Human Liver Cancer Cells", (7/1/03 – 9/30/03), $5,230

Saint Louis University SLU2000 Research Incentive Fund, "SN1 Regulation in Diabetes", (8/1/02 – 12/31/02), $24,919

Saint Louis University Beaumont Faculty Development Award, "Development of Nonradioactive Northern Blotting Techniques", (6/1/00 - 11/1/00), $5,000

Peer-Reviewed Publications

(hyperlink to PubMed abstract below each)

1. Bode BP and Kilberg MS. *Amino Acid-dependent increase in hepatic System N activity is linked to cell swelling*. **J Biol Chem**, 266:7376-7381 (1991).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2019573&query_hl=1

2. Herskowitz K, Bode BP, Block ER, and Souba WW. *Characterization of L-glutamine transport by pulmonary artery endothelial cells*. **Am J Physiol** 260:L241-L246 (1991).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1902063&query_hl=1

3. Herskowitz K, Bode BP, Block ER, and Souba WW. *The effects of endotoxin on glutamine transport by pulmonary artery endothelial cells*. **J Surg Res** 50:356-361 (1991).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2020187&query_hl=1

4. Souba WW, Salloum RM, Bode BP and Herskowitz K. *Cytokine modulation of glutamine transport by pulmonary artery endothelial cells*. **Surgery** 110:295-302 (1991).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1858039&query_hl=1

5. Inoue Y, Bode BP, Beck DJ, Li AP, Bland KI, and Souba WW. *Arginine transport in human liver: Characterization and effects of nitric oxide synthase inhibitors*. **Ann Surgery** 218:350-363 (1993).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7690540&query_hl=1

6. Bode BP and Souba WW. *Modulation of cellular proliferation alters glutamine transport and metabolism in human hepatoma cells*. **Ann Surgery** 220:411-424 (1994).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7944654&query_hl=1

7. Inoue Y, Bode BP and Souba WW. *Antibody to TNFα blocks LPS-stimulated hepatic amino acid transport*. **Surgery** 116:356-366 (1994).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8048001&query_hl=1

8. Inoue Y, Bode BP and Souba WW. *Hepatic Na^+-independent amino acid transport in endotoxemic rats: Evidence for selective stimulation of arginine transport*. **Shock** 2:164-170 (1994).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7743345&query_hl=1

9. Bode BP, Kaminski DL, Souba WW and Li AP *Glutamine transport in isolated human hepatocytes and transformed liver cells*. **Hepatology** 21:511-520 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7843725&query_hl=1

10. Plumley D, Watkins K, Bode BP, Pacitti AJ and SoubaWW. *Cyclooxygenase blockade abrogates the endotoxin-induced increase in Na^+-dependent hepatic amino acid transport*. **J Parenteral Enteral Nutr** 19: 9-14 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7658609&query_hl=1

11. Inoue Y, Bode BP and Souba, W.W. *Dietary regulation of the hepatic System n glutamine transporter in tumor-bearing rats*. **Am J Surgery** 169:173-178 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7817988&query_hl=1

12. Espat NJ, Bode BP, Lind DS, Copeland EM and Souba WW. *Normalization of tumor-induced increases in hepatic amino acid transport after surgical resection*. **Ann Surgery** 221:50-58 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7826161&query_hl=1

13. Inoue Y, Bode BP, Copeland EM and Souba WW. *Enhanced Hepatic Amino Acid Transport in Tumor-bearing Rats is Partially Blocked by Antibody to Tumor Necrosis Factor*. **Cancer Res** 55: 3525-3530 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7627959&query_hl=1

14. Inoue Y, Bode BP and Souba WW. *Attenuation of the endotoxin-stimulated increase in hepatic amino acid transport with a glucocorticoid receptor antagonist*. **J Surg Res** 58: 693-701(1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7791348&query_hl=1

15. Abcouwer SF, Bode BP and Souba WW. *Glucocorticoids regulate rat glutamine synthetase in a tissue-specific manner*. **J Surg Res** 59: 59-65 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7630137&query_hl=1

16. Wasa M, Bode BP and Souba WW. *Adaptive regulation of amino acid transport in nutrient-deprived human hepatomas*. **Am J Surgery** 171: 163-169 (1996).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8554134&query_hl=1

17. Wasa M, Bode BP, Abcouwer SF, Collins C, Tanabe KK and Souba WW. *Glutamine as a regulator of DNA and protein biosynthesis in human solid tumor cell lines*. **Ann Surgery** 224: 189-197 (1996).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8757383&query_hl=1

18. Fischer CP, Bode BP and Souba WW. *Starvation and endotoxin act independently and synergistically to coordinate hepatic glutamine transport.* **J Trauma:** 40: 688-693 (1996).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8614065&query_hl=1

19. Fischer CP, Bode BP and Souba WW. *A sarcoma-derived protein regulates hepatocyte metabolism via autocrine production of tumor necrosis factor alpha*. **Ann Surgery** 224: 476-483 (1996).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8857852&query_hl=1

20. Fischer CP, Bode BP, Takahashi K, Tanabe KK and Souba WW. *Glucocorticoid-dependent induction of interleukin-6 receptor in human hepatocytes facilitates interleukin-6 stimulation of amino acid transport.* **Ann Surgery** 223: 610-618 (1996).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8651752&query_hl=1

21. Abcouwer SF, Lohmann R, Bode BP Lustig RJ and Souba WW. *Induction of glutamine synthetase expression after major burn injury is tissue specific and temporally variable*. **J Trauma** 42: 421-428 (1997).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9095109&query_hl=1

22. Elgadi KM, Souba WW, Bode BP and Abcouwer SF. *Hepatic glutaminase gene expression in the tumor-bearing rat*. **J Surg Res** 69: 33-39 (1997).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9202643&query_hl=1

23. Fischer CP, Bode BP, Hurley BP and Souba WW. *Alterations in oxidative metabolism and glutamine transport support glucose production in the tumor-influenced hepatocyte*. **J Surg Res** 69: 379-384 (1997).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9224411&query_hl=1

24. Pan M, Fischer CP, Wasa M, Bode BP and Souba WW. *Characterization of glutamine and glutamate transport in rat lung plasma membrane vesicles*. **J Surg Res** 69: 418-424 (1997).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9224417&query_hl=1

25. Lohmann RG, Souba WW, Zakrzewski K and Bode BP. *Burn-dependent stimulation of rat hepatic amino acid transport*. **Metabolism** 47: 608-616 (1998).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9591755&query_hl=1

26. Bode BP, Reuter N, Conroy JL and Souba WW. *Protein Kinase C regulates nutrient uptake and growth in hepatoma cells*. **Surgery** 124: 260-268 (1998).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9706147&query_hl=1

27. Easson AE, Bode BP, Fischer CP and Souba WW. *Effects of endotoxin challenge on hepatic amino acid transport during cancer*. **J Surg Res** 77: 29-34 (1998).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9698528&query_hl=1

28. Collins CL, Bode BP, Souba WW and Abcouwer SF. *Multiwell $^{14}CO_2$-capture assay for evaluation of substrate oxidation rates of cells in culture.* **Biotechniques** 24: 803-808 (1998).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9591130&query_hl=1

29. Fischer CP, Bode BP and Souba WW. *Adaptive Alterations in cellular metabolism with malignant transformation.* **Ann Surg** 227:627-636 (1998).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9605654&query_hl=1

30. Lohmann RG, Souba WW and Bode BP. *Rat liver endothelial cell glutamine transporter and glutaminase expression contrast with parenchymal cells*. **Am J Physiol (Gastrointest & Liver Physiol)** 276: G743-G750 (1999).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10070052&query_hl=1

31. Pawlik TM, Rubin AI, Souba WW and Bode BP. *Liver tumor cell nutrient uptake as a function of the cell cycle*. **Surgical Forum** L:23-25 (1999).

32. Iannoli P, Miller JH, Wang HT, Bode B, Souba WW, Avissar NE and Sax HC. *Characterization of L-leucine transport system in brush border membranes from human and rabbit small intestine.* **Metabolism** 48: 1432-1436 (1999).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10582553&query_hl=49

33. Yoon SS, Nakamura H, Carroll NM, Bode BP, Chiocca EA and Tanabe KK. *An oncolytic herpes simplex virus type 1 vector selectively treats diffuse liver metastases from colon carcinoma*. **FASEB J**. 14: 301-311 (2000).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10657986&query_hl=1

34. Pawlik TM, Lohmann R, Souba WW and Bode BP. *Hepatic glutamine transporter activation in burn injury: Role of amino acids and phosphatidylinositol-3 kinase*. **Am J Physiol (Gastrointest & Liver Physiol)** 278: G532-G541 (2000).

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10762606&query_hl=1

35. Pawlik TM, Souba WW, Sweeney TJ and Bode BP. *Phorbol esters attenuate glutamine uptake in human colon carcinoma cells*. **J Surg Res** 90: 149-155, (2000).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10792956&query_hl=1

36. Pawlik TM, Souba WW, Sweeney TJ and Bode BP. *Amino acid transport measurement and regulation in multicellular human hepatoma spheroids*. **J Surg Res** 91: 15-25 (2000).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10816344&query_hl=1

37. Eto H, Yoon SS, Bode BP, Kamidono S, Keishi M, Saya H, Nakamura H and Tanabe KK. *Mapping and regulation of the tumor-associated epitope recognized by monoclonal antibody RS-11*. **J Biol Chem** 275:27075-27083 (2000)
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10801882&query_hl=1

38. Easson AE, Souba WW, Conroy JL, Sgroi DC and Bode BP. *Tumor-influenced amino acid transport activities in zonal-enriched hepatocyte populations.* **Am J Physiol (Gastrointest & Liver Physiol)** 279: G1209-G1218 (2000).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11093943&query_hl=1

39. Pawlik TM, Souba WW, and Bode BP. *Asparagine uptake in rat hepatocytes: resolution of a paradox and insights into substrate-dependent transporter regulation.* **Amino Acids** 20 (4): 335-352 (2001).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11452978&query_hl=1

40. Fernandez J, Bode B, Koromilas A, Diehl JA, Krukovets I, Snider MD and Hatzoglou M. *Translation mediated by the internal ribosome entry site of the cat-1 mRNA is regulated by glucose availability in a PERK Kinase-dependent manner.* **J Biol Chem** 277: 11780-11787 (2002).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11781318&query_hl=51

41. Bode BP, Fuchs BC, Hurley BP, Conroy JL, Suetterlin JE, Tanabe KK, Rhoads DB, Abcouwer SF and Souba WW. *Molecular and functional analysis of glutamine uptake in human hepatoma and liver-derived cells.* **Am J Physiol (Gastrointestinal & Liver Physiology)** 283: G1062-G1073 (2002).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12381519&query_hl=1

42. Pawlik TM, Carter EA, Bode BP, Fischman AJ and Tompkins RG. *Central role of Interleukin-6 in burn induced stimulation of hepatic amino acid transport.* **Int J Mol Med** 12: 541-548 (2003).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12964032&query_hl=1

43. Fuchs BC, Perez JC, Suetterlin JE, Chaudhry SB and Bode BP. *Inducible antisense RNA targeting amino acid transporter ATB^0/ASCT2 elicits apoptosis in human hepatoma cells.* **Am J Physiol (Gastrointest & Liver Physiol)** 286: G467-G478 (2004).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14563674&query_hl=1

44. Onan MC, Fisher JS, Ju JS, Fuchs BC and Bode BP. *Type I Diabetes Differentially Affects Glutamine Transport in Fast- and Slow-twitch Skeletal Muscle*. **Exp Biol Med** 2005 230: 606-11 (2005). http://www.ebmonline.org/cgi/content/full/230/9/606

45. Fuchs BC, Finger RE, Onan MC, and Bode BP. *ASCT2 Silencing Regulates Mammalian Target-of-Rapamycin Growth and Survival Signaling in Human Hepatoma Cells* **Am J Physiol Cell Physiol** 293:55-63 (2007). http://ajpcell.physiology.org/cgi/content/full/293/1/C55

Primary Research Articles Currently in Review/ Preparation:

1. Bothwell PJ, Kron CC, Czerniak B, Wittke EF, Finger, RE, Papa A, Howard Z, Mottar A, Fuchs BC and Bode BP. *Stable silencing of Amino acid transporters ASCT2 and LAT1 in Human Hepatocellular Carcinoma Cells inhibits mTOR signaling and growth but not cell proliferation.* Submitted.

2. Fuchs BC, Wittke EF and Bode BP. *Artificial cell swelling rescues human hepatoma cells from apoptosis induced by loss of ASCT2 activity*. In preparation.

3. Miller MC and Bode BP. *System N isoforms SNAT3 and SNAT5 display similar yet tissue-specific regulatory properties in liver and skeletal muscle cells*. In preparation.

4. Perez JC, Perry DK, Kron C, Fuchs BC, Suetterlin JE and Bode BP. *Dynamic expression of SLC38 family amino acid transporters during three-dimensional growth of human liver cancer cells: Selective upregulation of SNAT4*. In preparation.

5. Kron C, Miller MC, Hurley BP, Conroy JL, Suetterlin JE and Bode BP. *Species-specific differences in activation of amino acid transporter ASCT2 in hepatocellular transformation:*. In preparation.

Invited Reviews

1. Bode BP, Tamarappoo BK, Mailliard M, and Kilberg MS. Characteristics and regulation of hepatic glutamine transport. in *Glutamine Metabolism in Health and Disease: Basic Science and Clinical Aspects* Suppl. to **J Parenteral Enteral Nutr.** 14:51S-55S (1990).

2. Bode BP in *JPEN Current Summaries*; *Novel control of the position-dependent expression of genes in hepatocytes - the Glut-1 transporter*. **J Parenteral Enteral Nutr**. 18:83-85 (1994).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8164312&query_hl=1

3. Bode BP in *JPEN Current Summaries*; *The Role of amino acids in ApoB100 synthesis and catabolism in human HepG2 cells*. **J Parenteral Enteral Nutr**. 18:280-281 (1994).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8065006&query_hl=1

4. Fischer CP, Bode BP, Abcouwer SF, Lukaszewicz GC, and Souba WW. *Hepatic uptake of glutamine and other amino acids during infection and inflammation*. **Shock** 3:315-322 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7648331&query_hl=1

5. Pan M, Fisher CP, Wasa M, Lukaszewicz G, Stevens BR, Bode BP Abcouwer SF and Souba WW. *Amino acid metabolism and the vascular endothelium: regulation and disease implications*. **Shock** 4: 79-88 (1995).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7496902&query_hl=1

6. Bode BP and Souba WW. *Glutamine transport and human hepatocellular transformation*. **J Parenteral Enteral Nutr**. 23 (suppl. 5): 533-537 (1999).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10483891&query_hl=1

7. Bode BP. *Recent molecular advances in mammalian glutamine transport*. **J Nutr** 131: 2475S-2485S (2001). ***ISI "Highly Cited Article" (Top 1% in its field)**.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11533296&query_hl=1

8. Fuchs BC and Bode BP. *Amino Acid Transporters ASCT2 and LAT1 in Cancer: Partners in Crime?* **Seminars in Cancer Biology**, 15: 254-266 (2005).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15916903&itool=iconabstr&query_hl=1

9. Fuchs BC and Bode BP. *Stressing out over survival: Glutamine as a modulator of apoptosis*. **J Surg Res** 131:26-40 (2006).
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=16154153&query_hl=1

Selected Abstracts:

Bode BP and Kilberg MS. Amino Acid-dependent regulation of transport System N in hepatocytes from starved rats. **J. Cell Biol.** 107:632a (1989). Presented at American Society for Cell Biology Meeting, St. Louis, MO

·From MGH/Harvard·

Leonard-Vidal, D, Bode, BP, and Souba, WW. Prostaglandin E2 stimulates hepatocyte amino acid transport by activating Protein Kinase C. presented at the Fourteenth Annual Meeting of the Surgical Infection Society, April 28 - 30, 1994, Toronto, Ontario.

Inoue Y, Bode BP and Souba WW. Glucocorticoids regulate hepatic amino acid transport during endotoxemia. presented at the Twenty-eighth Annual Meeting of the Association of Academic Surgery, November 16-19, 1994, Albuquerque, NM.

Fischer CP, Bode BP and Souba WW. Differential and selective induction of amino acid transport activity in the tumor-influenced hepatocyte. **Gastroenterol** (SSAT) A1385 (1996).

Bode BP, Hurley BP and Souba WW. Glutamine transport in hepatocytes and hepatoma cells. **Proc Am Assoc Cancer Res** 37: 498 (1996). Presented at the American Association for Cancer Research Meeting, San Diego, CA.

Bode BP, Hurley BP, Abcouwer SF and Souba WW. Glutamine Transport in hepatocytes and hepatoma cells. Presented at the FASEB Summer Research Conference: Transporters of amino acids, peptides and bioactive monoamines: Structural, functional and regulatory aspects. July 27 – August 1, 1997, Copper Mountain, CO.

Easson AE, Bode BP, Souba WW and Abcouwer SF. The in vitro interaction between methotrexate and glutamine. **Proc Am Assoc Cancer Res**38: 432 (1998).

Yoon S, Carroll N, Bode B, Chiocca E, and Tanabe K. Herpes simplex virus vector hrR3 selectively replicates in colon carcinoma cells and inhibits growth. Presented at Society of Surgical Oncology Meeting, 1998.

"Protein Kinase C regulates nutrient uptake and growth in human hepatoma cells" (seminar session). Presented at the 59th annual meeting of the Society for University Surgeons, Milwaukee, WI, February 12-14, 1998.

·From SLU·

Henderson, NM, Garcia-Medina, R and Bode, BP. **"**The Role of Glutamine Transport in the Growth of Human Hepatoma Cells" presented at the National McNair Scholars Research Conference, Delevan,WI, November 2000.

Role of glutamine transporter ATB^0 in human hepatic and colon cancer cell growth. Bode BP, Garcia-Medina R, Suetterlin JE, and Fuchs BC. Presented at Experimental Biology 2001, Orlando FL. **FASEB J**. 15 (4): A435, (2001).

Fuchs BC, Suetterlin JE and Bode BP. Inducible antisense inhibition of glutamine transporter ATB^0 expression arrests growth in human hepatoma cells. Presented at Experimental Biology 2002, **FASEB J** 16 (4): A456 (2002).

Fuchs BC, Perez JC and Bode BP. Molecular and Apoptotic Consequences of Suppressed Glutamine Delivery to Human Liver Cancer Cells. FASEB Summer Research Conference, Molecular Mechanisms of Regulation by Dietary Constituents. Snowmass Village, CO August 16-21, 2003.

Onan MC, Fuchs BC and Bode BP. Amino acid transporter ASCT2 expression regulates mammalian-target-of-rapamycin growth and survival signaling in human hepatoma cells. Presented at Experimental Biology 2006, San Francisco, CA

·From NIU·

American Association for Cancer Research Annual Meeting, March 31-April 2, 2012, Chicago, IL (2 posters)

Kron C, Wittke EF, Mottar A, Bothwell PJ, Finger RE and Bode BP. Amino acid transporters ASCT2 and LAT1 ubiquitously function in N-myc (+) epithelial and mesenchymal human HCC cells exhibiting a wide array of mTOR and glycolytic reliance for growth

Arora G, Flores R, Wright L, Fimmel CJ and Bode BP. Liver-specific knockout mice and liver-derived cell lines provide insights into potential roles for the GP73/GOLM1 HCC serum biomarker - association with sustained cell proliferation

American Association for the Advancement of Science (AAAS) Meeting, February 15, 2014, Chicago, IL (4 Posters):

Wittke EF, Fuchs BC and Bode BP. Effects of Artificial Cell Swelling on ASCT2 Silencing, Glutamine Transport and Expression of SGK1

Kron C and Bode BP. Human Hepatocellular Carcinoma Cells Reveal Major Role for ASCT2 and LAT1 Transporters

Arora G, Tarragano J, Wright L, Fimmel CJ and Bode BP. Insights Into Potential Roles For The GP73/GOLM1 HCC Serum Biomarker – Association with Sustained Cell Proliferation and Enhanced Invasiveness.

Bothwell PJ and Bode BP. ASCT2 & LAT1 Silencing in Hepatocellular Carcinoma Affects Proliferation, Growth & mTOR Signaling

Book Chapters

Bode BP, Abcouwer SF and Souba WW. Modulation of Hepatic Glutamine Metabolism in Cancer. in *Amino Acid Metabolism in Health and Nutritional Diseases* Cynober L (Ed.), CRC Press, Boca Raton, FL (1995).

Abcouwer SF, Bode BP and Souba WW. Glutamine as a Metabolic Intermediate. in *Surgical Nutrition*, 2nd Edition, Fischer JE (Ed.) Little, Brown & Co.Boston, MA (1996).

Bode, B.P., Pan, M., and Souba, W.W., Glutamine, the Gut, and the Acute Catabolic State. in *The Acute Catabolic State*, Revhaug A (Ed.), Springer-Verlag, Heidelberg, Germany (1996).

Bode BP, Fischer CP, Abcouwer SF, Wasa M and Souba WW. Glutamine and Cancer Cachexia in *Protein and Amino Acid Metabolism in Cancer Cachexia*, Pisters PWT and Brennan MF (Eds.) R.G. Landes Co., Austin, Texas (1996).

Bode BP, Abcouwer SF, Lin CM and Souba WW. Glutamine and Cancer. in *Nutrition Support of Cancer, Transplant and Immunocompromised Patients.* Merrell RC and Latifi R.(Eds.) R.G. Landes Co., Austin, TX (1999)

Bode BP. Glutamine Transport and Metabolism in Cancer. in "*Glutamine: Biochemical, Metabolic and Health Implications*", edited by Dominique Meynial Denis, and published by Taylor and Francis publishers (2015).

Patents Pending:

No. ER 724384499 US
"Compositions and Methods of Treating and Diagnosing Hepatoma"

Selected Invited Presentations

"Intestinal Glutamine Metabolism During Severe Infection" and *"Effect of Glutamine-supplemented Nutrition on Intestinal Function"* presented at the seminar "What Can be Done for the Catabolic Patient", Tromsø, Norway, July 3-5, 1994.

"Regulation of Hepatic Amino Acid Transport in Critical Illness" presented at the Research Workshop: Nutrition and Critical Illness at the American Society for Parenteral and Enteral Nutrition (ASPEN), Washington, D.C. January 14, 1996.

"Glutamine Transport and Hepatocellular Transformation" presented at the Case Western Reserve University Departments of Biochemistry and Nutrition Joint Seminar Series, Cleveland, Ohio, May 28, 1998.

"Glutamine transport and human hepatocellular transformation". Presented at the International Symposium on Growth Factors and Nutrients in Intestinal Health and Disease, Osaka, Japan, October 21 – November 3, 1998.

"Glutamine Transport in Liver Function and Hepatocellular Transformation" presented at the Saint Louis University Gastroenterology and Hepatology Research Seminar, May 12, 2000.

"Glutamine Transporters: Recent Advances and Signatures of Cell Function" presented at the International Symposium on Glutamine, Bermuda, October 3, 2000.

"Glutamine Transporter Expression in Human Liver Cancer", presented at the Saint Louis University Liver Center, December 11, 2002.

"*ASCT2 and mTOR signaling*", presented at the Saint Louis University Liver Center, May 25, 2005.

"*Amino Acid Transporter Expression in Human Cancer Growth and Survival Signaling*", presented at the Saint Louis University Cancer Center, April 21, 2007.

"Hepatocellular Cancer: Nutrient Transporters and Animal Models" presented at the University of Illinois-Chicago School of Pharmacy (Rockford), October 16, 2014.

"*Cancer in the 21st Century*" presented at STEM Café, a community-outreach program where university expertise is shared with the public on topics cogent to their lives. March 24, 2015, at Eduardo's Restaurant, DeKalb, IL.

Teaching Experience

Northern Illinois University

2015
BIOS 761 – Graduate Seminar: *Grant Writing* (8 students)
BIOS 304 – Molecular Cell Biology Laboratory (12 students)
2014
BIOS 304 – Molecular Cell Biology Laboratory (10 students)
*This was the first year the course was offered; I designed the course curriculum and physically set up the laboratory along with a colleague. Based on student feedback it was a success.
2013
BIOS 302 – Molecular Biology (75 students)
BIOS 450/550 - Molecular Biology of Cancer (40 students)
2012
BIOS 357 – Human Anatomy and Physiology (> 100 students)
*took over the class when the instructor suddenly passed away
BIOS 467/567 - Molecular Biology of Eukaryotes (70 students)
2011
BIOS 450/550 - Molecular Biology of Cancer (50 students)
BIOS 467/567 - Molecular Biology of Eukaryotes (70 students)

Courses taught at Saint Louis University:

2009
BL-A493 and BL-A593, Cancer Biology (40 students). This was the first year this course was formulated. I had invited speakers – colleagues from SLU School of Medicine come in a provide topics lectures, but I taught over 70% of the lectures. It was a great capstone course for our seniors and was very well received.
2008
BL-A302, Molecular Cell Biology I: Biochemistry and Molecular Biology (250 students)
2007
BL-A302; Molecular Cell Biology I: Biochemistry and Molecular Biology (250 students)
2006
BL-A454; Human Cellular Physiology (100 students)
2005
BL-A488; Senior Inquiry-Laboratory Research (1 student)
BL-A582; Graduate Seminar in Cell/Molecular Regulation (TOR signaling – 8 students)
BL-A346; General Physiology (70 students)
2004
BL-A346-01; General Physiology (100 students)
BL-A512; Signal Transduction (13 students)
2003:
BL-A346-01; General Physiology (100 students)
BL-A347-36, & -37; General Physiology Laboratory (30 students)
BL-A498; Advanced independent study (1 student)

2002:
BL-A346-01; General Physiology (100 students)
BL-A347-36, & -37; General Physiology Laboratory (30 students)
BL-A488; Senior Inquiry-Laboratory Research (1 student)
BL-A512; Signal Transduction (7 students)
BL-A582; Graduate Seminar in CMR (Cancer Biology – 11 students)
BL-A595; Special Study for Exams (Ph.D. preliminary exam grant writing class – 3 students)
2001:
BL-A346-01; General Physiology (100 students)
BL-A347-36, & -37; General Physiology Laboratory (40 students)
BL-A488-05; Senior Inquiry - undergraduate research (6 students)
BL-A498-05; Advanced independent study (1 student)
BL-A507; Advanced Biochemistry (Metabolic Control) (14 students)
BL-A595; Special Study for Exams (Ph.D. preliminary exam grant writing class – 4 students)
BL-A698-05; Graduate Reading Course (1 student)
2000:
BL-A346-01; General Physiology (70 students)
BL-A347-36, & -37; General Physiology Laboratory (40 students)
BL-A582; Graduate Seminar in CMR (Liver Biology & Disease)
BL-A488-05 Senior Inquiry - undergraduate research (6 students)
BL-A498-05 Advanced independent study (1 student)

Finalist, William V. Stauder, S.J. Excellence in Teaching in the Natural Sciences,
Saint Louis University College of Arts & Sciences, 2003.

Recipient, Faculty Excellence Award,
Saint Louis University Student Government Association, 2003

Recipient, Faculty Excellence Award,
Saint Louis University Student Government Association, 2005

Service Committees

Saint Louis University

Biology Graduate Student Dissertation & Thesis Committee(s), 1999-2009

Biology Graduate Affairs Committee, 1999-2009

Biology Space and Equipment Committee, 1999-2009

Biology Department New Faculty Search Committee, 1999-2009

Reis Biology Station Committee, 2000-2001

McNair Scholars Advisory Board, 2000-2009

Saint Louis University Research Advisory Committee, 2000-2009

Research Committee of the Graduate School, 2001-2009

Saint Louis University Minority Fellowship Committee, 2002 - 2007

Other Service Committees:

Saint Louis Zoo Institutional Animal Care and Use Committee, 2002 – present

Laboratory Supervisory /Mentoring Experience:

August 2009 – Present:
Department of Biological Sciences, Northern Illinois University, DeKalb, IL

Undergraduate Research Students: 14 total since 2010

Notable UG Students	Notes	Where are they now?
Evan Wittke	Recipient of two USOAR grants and a Summer Research Opportunity Program award. Co-author on three submitted manuscripts	Medical Student, Loyola University-Chicago School of Medicine
Erik Curry	Recipient of a USOAR grant	Medical Student, Southern Illinois University School of Medicine
Ashley Mottar	Co-author on a submitted manuscript	Michigan State Police Forensics Lab Scientist
Joel Dennison	Co-author on a submitted manuscript	Medical Student, University of Iowa School of Medicine (2015)
Jordon Mitzelfelt	Co-author on a submitted manuscript	Medical Student, Southern Illinois University School of Medicine (2015)

Graduate Students:

Graduate Students	Thesis/Dissertation	Where are they now?
Paige Bothwell *Ph.D. candidate (2014) -present* *MS fall 2010-spring 2013*	Thesis: Targeting ASCT2 and LAT1 Using a Lentiviral-Based Construct for Silencing in Hepatocellular Carcinoma	Ph.D. student in my lab
Clare Kron *Ph.D. candidate (2014) -present* *MS spring 2010 – spring 2013*	Thesis: Using real-time PCR to determine the expression levels of seven amino acid (glutamine) transporters in fourteen human hepatocellular carcinoma cell lines	Ph.D. student in my lab
Gunisha Arora *Ph.D. candidate (2013)-present*	Dissertation: Liver-specific knockout mice and liver-derived cell lines provide insights into potential roles for the GP73/GOLM1 HCC serum biomarker in liver cancer pathogenesis	Ph.D. student in my lab
Aparna Agarwal *MS spring 2015- present*	Thesis: Assessment of glutamine transport inhibitor specificity using cells stably transfected with glutamine transporter cDNA expression plasmids	MS student in my lab
Bradley Czerniak MS spring 2012 – summer 2013	Thesis: Role of amino acid transporters ASCT2 and LAT1 and their substrates in stimulating mTORC1-mediated growth signaling in a broad panel of human liver cancer cells	Assistant Professor, Joliet Junior College

Continued……

Graduate Students (cont'd)	Thesis/Dissertation	Where are they now?
Rosalba Flores MS spring 2011 – spring 2012	Non-thesis MS: Research project: Expression of GOLM1 in multicellular hepatoma spheroids	

2000-2009: Department of Biology, Saint Louis University, St. Louis, MO

Undergraduate Research Students: 23 total 2000-2009

Notable UG Students	Notes	Where are they now?
Michelle Ofreneo	Recipient of an American Physiological Society Undergraduate Summer Research Fellowship (one of 12 nation-wide)	Physician
Matt Maurice and Mary Ann Bleem	Recipients of Undergraduate Research Awards from the College of Arts & Sciences	Both are now physicians
Sofia Chaudhry	Co-author on a manuscript	Physician
Nicole Henderson	McNair Scholar	Nurse Practitioner, Philadelphia, PA
Raquel Garcia-Medina	Helped me to set up and establish my laboratory 2000-2001; excellent student	Ph.D. cancer researcher and mom, Spain

Graduate Students:

Graduate Students	Thesis/Dissertation	Where are they now?
Richard E. Finger, Ph.D. student *2006-2011*	Dissertation: Amino acid transporter ASCT2 and mTOR signaling in human liver cancer cells	Assistant Professor Department of Biology, Lindenwood University-Belleville (IL)
Nicole M. Arnold, MS student, *2007-2009*	Non-Thesis MS Project: LAT1 expression in human hepatoma cells	Nurse, St. Louis, MO
Stanley Andrisse, Ph.D. student, *2007-2008*	Dissertation: Adaptive regulation of glutamine transporters in human hepatoma cells* (left the program for two years for personal reasons, then returned to work with my colleague Jon Fisher, with whom he completed his Ph.D. research)	Postdoctoral Research Fellow, Pediatric Oncology, Johns-Hopkins University School of Medicine
Marie C. Onan (nee Miller), Ph.D. student, *2001- 2006*	Dissertation: Regulation and properties of the principal glutamine transporters SNAT3 and SNAT5 in liver and skeletal muscle	Psychiatrist (MD), Jefferson Barracks VA Medical Center, St. Louis, MO
Doug Perry, Ph.D. student, *2002 – 2005*	Dissertation: Regulation of amino acid transporter SNAT4 expression in human liver cancer cells	Head Nurse, Children's Hospital, St. Louis, MO

Graduate Students (cont'd)	Thesis/Dissertation	Where are they now?
Bryan C. Fuchs, Ph.D. student *2000 – 2005*	Dissertation: The role of amino acid transporter ASCT2 in human liver cancer growth	Assistant Professor, Massachusetts General Hospital & Harvard Medical School, Boston, MA
Jose Christian Perez, MS student, *2001- 2003*	Thesis: Regulation of amino acid transporter expression during the growth of human hepatoma multicellular spheroids	Assistant Professor, Institute for Molecular Infection Biology Julius-Maximilians-University Wuerzburg, Germany

August 1993 – August 1999:
Department of Surgery, Division of Surgical Oncology
Massachusetts General Hospital and Harvard Medical School, Boston, MA

Responsibilities included the set-up, operation and coordination of the Surgical Oncology Research Laboratories at Massachusetts General Hospital. Served as principal investigator, supervisor, preceptor and scientific advisor for Research Fellows (surgical residents) and summer students. Additional responsibilities included writing, editing and corresponding on manuscripts resulting from the research efforts of the Fellows and students. In this capacity, I trained and supervised seven residents and two summer students, with several peer-reviewed manuscripts, grants and abstracts resulting from our efforts.

Fellows / Students Trained and Mentored (1993-1999):

Resident/Student	Research Project(s)	Where are they now?
Thomas J. Sweeney, M.D., Surgeon, St. Vincents Hospital, Melbourne, Australia *1998-1999*	Regulation of glutamine transport in colon carcinoma and by three-dimensional growth.	Surgeon, unknown location
Timothy M. Pawlik, M.D., Surgical Resident, University of Michigan, *1998-1999*	Regulation of hepatic amino acid transport during burn injury, regulation of glutamine transport by three-dimensional growth in human hepatomas and by protein kinase C.	Chief, Division of Surgical Oncology and Professor of Surgery, Program Director of Hepatobiliary Surgery, Director of the Johns Hopkins Medicine Liver Tumor Center. Johns-Hopkins University School of Medicine, Baltimore, MD.
Alexandra M. Easson, M.D., FRCS(C), University of Toronto, *1997 – 1999*	Regulation of zone-specific hepatic amino acid transport by tumor burden and endotoxin.	Assistant Professor, Department of Surgery, University of Toronto Cancer Clinical Research Unit (CCRU), Princess Margaret Cancer Centre

Students/Residents (cont'd)	Research Project(s)	Where are they now?
Nancy Reuter, Medical Student, Duke University, North Carolina (*Summers 1996 and 1997*)	Regulation of glutamine transport in human hepatoma cells by protein kinase C.	(Nancy Reuter Barrett) General Surgeon, Lebanon, TN
Craig P. Fischer, M.D., Surgical Resident, Massachusetts General Hospital, Boston, *1996 - 1998*	Regulation of hepatic glutamine uptake by tumor burden and cytokines	Assistant Professor, Department of Surgery, University of Texas – Houston Medical School Head, Hepatobiliary Surgery; then Associate Professor, Houston Methodist Hospital
Adam I. Rubin, Undergraduate student, Johns Hopkins University, (*Summers 1996 and 1997)*	Cell cycle-dependent regulation of glutamine uptake in human hepatoma cells	Assistant Professor of Dermatology, Hospital of the University of Pennsylvania
Rüdiger Lohmann, M.D., Surgical Resident, Charité Virchow Clinic, Berlin, Germany, *1995-1997*	Regulation of hepatic amino acid transport by burn injury	President and CEO of Lohmann-Birkner, Inc., Berlin, Germany
Masafumi Wasa, M.D., Osaka University Hospital, Japan, *1994 - 1996*	Role of amino acids in regulating growth, nutrient transport and DNA synthesis in solid tumor-derived cell lines	Chief of Pediatric Surgery, Osaka University Graduate School of Medicine
Frank J. (David) Leonard-Vidal, M.D., Surgical Resident, Beth Israel Hospital, Boston, *1993-1994*	Regulation of hepatic glutamine transport by inflammatory mediators	Trauma surgeon at Bronson Methodist Hospital, Kalamazoo, MI