

Curriculum Vitae

Date Prepared: January 5, 2021
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Education

9/1978- 6/1982	B.S. Magna cum laude	Pharmacy	Massachusetts College of Pharmacy and Allied Health Sciences
6/1996- 9/1999	Pharm.D. Summa cum laude	Pharmacy	Massachusetts College of Pharmacy and Health Sciences

Postgraduate Training

4/1996- 5/1996	Fellow	Nutritional Support Preceptorship	University of Florida, College of Pharmacy, Shand's Clinic, Gainesville, FL
3/1999- 6/1999	Intern	Nutrition Alternative medicine	Marino Center for Progressive Medicine, Cambridge, MA

Faculty Academic Appointments

9/1999- 8/2000	Adjunct Instructor (non-voting)	Pharmacy Practice	Massachusetts College of Pharmacy and Health Sciences, Boston, MA
9/2002- 8/2009	Adjunct Assistant Professor (non-voting)	Pharmacy Practice	Massachusetts College of Pharmacy and Health Sciences, Boston, MA

9/2007- Present	Adjunct Assistant Professor (non-voting)	Pharmacy Practice	Bouvé College of Health Sciences, Northeastern University, Boston, MA
9/2003- 8/2006	Preceptor	Experiential Education	University of North Carolina College of Pharmacy at Chapel Hill, NC
9/2004- Present	Preceptor	Experiential Education	University of Washington, School of Pharmacy, Seattle, WA
9/2004- Present	Preceptor	Experiential Education	Washington State University, College of Pharmacy, Dept. of Pharmacotherapy, Spokane, WA
9/2006- present	Adjunct Assistant Professor (non-voting)	Pharmacotherapy and Experimental Therapeutics	School of Pharmacy, University of North Carolina at Chapel Hill, NC
9/2005- 11/2022	Adjunct Assistant Professor (non-voting)	Pharmacy Practice	School of Pharmacy, University of Connecticut, Storrs, CT
9/2009- 8/2019	Adjunct Associate Professor (non-voting)	Pharmacy Practice	Massachusetts College of Pharmacy and Health Sciences, Boston, MA
9/2013- 8/2018	Adjunct Associate Professor (non-voting)	Pharmacy Practice	MCPHS University, Boston, MA
11/2016- Present	Assistant Professor	Pediatrics	Harvard Medical School Boston, MA

Appointments at Hospitals/Affiliated Institutions

10/1982- 3/1984	Clinical Staff Pharmacist	Department of Pharmacy	Children's Hospital National Medical Center, Washington, D.C.
3/1984- 9/1987	Staff Pharmacist II	Department of Pharmacy	Boston Children's Hospital
9/1987-	Clinical Pharmacist/	Department of Pharmacy	Boston Children's

12/2000	Sterile Products Manager		Hospital
9/1987- Present	Clinical Pharmacist	Division of Gastroenterology, Hepatology & Nutrition	Boston Children's Hospital
7/1999- Present	Clinical Pharmacist	Department of Surgery, Center for Advanced Intestinal Rehabilitation (CAIR)	Boston Children's Hospital
12/2000- 7/2015	Team Leader	Department of Pharmacy	Boston Children's Hospital
9/2009- Present	Clinical Pharmacist	Division of Critical Medicine (Nutrition)	Boston Children's Hospital
7/2015- Present	Manager, Clinical Research	Department of Pharmacy	Boston Children's Hospital

Other Professional Positions

1996-1998	Pharmaceutical Advisory Board	Baxa Corporation (16 hours/year)
1996-1998	Pharmaceutical Advisory Board	Abbott Pharmaceuticals (16 hours/year)
2007	2007 United States Pharmacopoeia, Disinfectants and Cleaning in the ISO Class 5 Environment USP <797> Ad Hoc Advisory Panel Member	United States Pharmacopeia (USP) (10 hours/year)
2008-2011	Pharmaceutical Advisory Board	Baxa Corporation (16 hours/year)
2008-2009	Professional Advisory Board	Nutrithrive (1 hour/month)
2010-2016	Pharmaceutical Advisory Board	B. Braun (16 hours/year)
2010-2020	Data and Safety Monitoring Board: Compassionate Use of an Intravenous Fat Emulsion Comprised of Fish Oil in the Treatment of Parenteral Nutrition Induced Liver Disease (PNALD)	Texas Children's Hospital, Baylor College of Medicine (1 hour/year)
2010- 2015	Consultant, Global Health Primary Care Initiative	Bach Mai Hospital (Hanoi, Viet Nam), Abbott Fund, Boston University School of Medicine, National Institute of Nutrition and Hanoi Medical University (80 hours/year)
2012-2018	Advisory Board	Pronova Biopharma (BASF) (2 days/year)

2013-2015	Advisory Board	Alkymos (4 hours/year)
2014-2016	Advisory Board	Sancilio and Company Inc. (1 hour/week)
2014-present	Nutrient Specifications Working Group, Evaluating the evidence base to support guidelines for the nutritional care of preterm infants -“The Pre-B Project”	Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)/NIH (20 hours/year)
2015-2020	Parenteral Nutrition Safety Expert Panel	United States Pharmacopeia (USP) (2 hours/month)
2017-present	Special Government Employee (SGE)/Consultant	Pharmacy Compounding Advisory Committee (PCAC). US Food and Drug Administration (FDA)
2018	Consultant	Pfizer Pediatric Center of Excellence and Consumer Health and Healthy Living Work (10 hours/year)
2018	Consultant	Xellia Pharmaceuticals SA LLC (2 hours/month)
2018-Present	Consultant	Fresenius Kabi (2 hours/month)
2018-2019	FDA Network of Experts	AASLD Experts on Cysteine Supplementation on patients with parenteral nutrition (1 hour)
2018-Present	Consultant	Northsea Therapeutics (1-2days/year)
2018-Present	Consultant	Otsuka Pharmaceutical Factory (2 hours/month)
2018-Present	Advisory Board	US Numeta Advisory Board/Baxter Pharmaceuticals (1 day/year)
2019	Advisory Board	Pfizer Hospital Pharmacist Advisory Board (1 day/year)
2021- 2024	Member	Pharmacy Compounding Advisory Committee, Food and Drug Administration

Patents Issued

February 14, 2017 Patent number: 9566260. Treatment and prevention of liver disease associated with parenteral nutrition (PN) Assignee: Children's Medical Center Corporation Inventors: Mark Puder, Kathleen M. Gura

April 25, 2017 Patent number: 9629821. Treatment and prevention of liver disease associated with parenteral nutrition (PN) Assignee: Children's Medical Center Corporation Inventors: Mark Puder, Kathleen M. Gura

Major Administrative Leadership Positions

Local

7/2015- Present	Manager Clinical Research, Department of Pharmacy	Boston Children's Hospital
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Committee Service

Local

1987- Present	Nutrition Advisory Committee	Boston Children's Hospital Member
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1987-2014	Nursing Policies and Procedures Committee	Boston Children's Hospital Member
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1985- 1999 2001- Present	Nursing-Pharmacy Committee	Boston Children's Hospital Member
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1991-1995	Longwood Herbal Task Force	Boston Children's Hospital Member
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1991	CVC Occlusion Task Force	Boston Children's Hospital Member
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1993-2006	Infection Control Committee	Boston Children's Hospital Member
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1993	TPN Clinical Practice Guidelines Group	Boston Children's Hospital Member
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1993-1997	NICU Committee	Boston Children's Hospital Member
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1993-1997	Medication Systems Task Force	Boston Children's Hospital Member
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1993	Enteral Nutrition Task Force	Boston Children's Hospital Member
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1994-1997	Burette Use Task Force	Boston Children's Hospital Member
1995-1999	Pharmacy Computer Implementation Committee	Boston Children's Hospital Member
1995-2003	Pharmacy Committee	Children's Extended Care Center, Groton, MA Member
1995-1999 2002- Present	Clinical Product Evaluation Committee	Boston Children's Hospital Member
1996	IV Therapy Task Force	Boston Children's Hospital Member
2000- Present	Pharmacy and Therapeutics Committee	Boston Children's Hospital Member
2003	Thrombosis Management Task Force	Boston Children's Hospital Member
2004-2010	CHAMPS (Children's Hospital Applications Maximizing Patient Safety)	Boston Children's Hospital Member
2008-2011	Ureteral Reimplant DRG /Clinical Practice Guidelines Committee	Boston Children's Hospital Member
2008- Present	Phlebitis Task Force	Boston Children's Hospital Member
2008- Present	Parenteral Nutrition Safety Task Force	Boston Children's Hospital Member
2009	Critical Care Enteral Nutrition Task Force	Boston Children's Hospital Member
2009- Present	NICU Parenteral Nutrition Task Force	Boston Children's Hospital Member
2011-2013	Child Healthcare of America (CHCA) IV Infiltrates Collaborative	Boston Children's Hospital Member
2012	Ethanol Lock Task Force	Boston Children's Hospital Member

2012	HPEN Vendor Task Force	Boston Children's Hospital Member
2015- 2018	CLABSI Task Force	Boston Children's Hospital Member
2016- 2017	Data and Safety Monitoring Board Pilot Study: Safety of Chlorhexidene (CHG) Baths in Patients Less Than 2 Months of Age	Boston Children's Hospital Chair
2018- Present	Gene Therapy Scientific Review Committee	Dana-Farber Boston Children's Cancer and Blood Disorders Center Member
2019- Present	Boston Children's Hospital Institutional Centers for Clinical and Translational Research (ICCTR) Education and Training Committee	Boston Children's Hospital Member
2019- Present	Experimental Therapeutics/Interventional Trials (ET/IT) Scientific Review Committee	Boston Children's Hospital Member

Professional Societies

1979- Present	American Society of Health-Systems Pharmacists (ASHP)	Member 1991-present, Reviewer of submissions for the Annual Meetings and Clinical Midyear 1991, 1999: Served as moderator for platform presentations 1996-2001: Massachusetts representative to ASHP House of Delegates 1998-2000: Member of Council of Professional Affairs 2000: Chair of Council of Professional Affairs 2011: Reviewer, Drug Therapy Research Awards 2017-present, Member, ASHP Section of Clinical Specialists and Scientists, Section Advisory Group (SAG) on Emerging Sciences 2018-present: Alternate Massachusetts representative to ASHP House of Delegates
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1979- Present	Rho Pi Phi Pharmaceutical Fraternity	Member 1980-1981: Secretary
1979- Present	Massachusetts Pharmacists Association	Member
1981- Present	Rho Chi Pharmaceutical Honor Society	Member
1982-1984	District of Columbia Society of Hospital Pharmacists	Member 1983-1984: Program Committee
1984- Present	Massachusetts Society of Health-Systems Pharmacists	Member 1991: Membership committee 1993-2010: Annual Meeting committee 1999: President-elect 2000-2001: President 2005-2010: Board of Directors 2016-present: Nominations Committee 2018-present: Alternate ASHP House of Delegates
1990- Present	American Society for Parenteral and Enteral Nutrition (ASPEN)	Member 1999: Nominations Committee, Pharmacy Practice Section 2000-2001, 2005-2006: Multivitamin Task Force 2002: Reviewer submitted papers 2004: Reviewer, A.S.P.E.N.'s Journal CE programs 2003-2005: Program Committee for 2004-2005 Nutrition Week 2004: Item writer, Self-Assessment Courses 2005-2006: Clinical Practice Awards Task Force 2006-2008: Clinical Guidelines Committee 2009-present: Selection Committee, Serlick Award 2009-present: Novel Nutrient Task Force 2010-2015: Rhodes Research Foundation Mentor 2010: Reviewer, Pediatric Nutrition Support Core Curriculum 2010: Intravenous Fat Emulsion National Shortage Task Force

		<p>2011: Reviewer, Adult Nutrition Support Core Curriculum 3rd Edition</p> <p>2011: Cysteine Shortage Task Force</p> <p>2011-2014: Research Committee</p> <p>2011-2016: CNW Program Committee</p> <p> 2013 vice chairman 2014 CNW</p> <p> 2014 chair 2015 CNW</p> <p>2012-2022: Clinical Practice Committee</p> <p>2012-present Educational and Professional Development (EPD) Committee</p> <p>2012-present: A.S.P.E.N. Corporate Scientific Council IVFE Work group</p> <p>2014: Reviewer, A.S.P.E.N Nutrition Support Pharmacist Standards Guidelines</p> <p>2015 - present Fellows Selection Committee</p> <p> 2018- 2020 vice chairman</p> <p>2016-2021 Parenteral Nutrition Safety Committee</p> <p>2016 IV Lipid Task Force</p> <p>2017-present Neonatal Section, leadership council</p>
1900- Present	Longwood Medical Area Nutrition Group	Member
1994- Present	Pediatric Pharmacy Association (PPA) [formerly Pediatric Pharmacy Advocacy Group (PPAG)]	<p>Member</p> <p>1994-present: Chairman, parenteral nutrition clinical focus group</p> <p>2000-2004: Board of directors</p> <p>2004-2005: Vice president, finance</p> <p>2006-2011: Richard A. Helms Excellence in Pharmacy Practice Award review committee</p> <p>2006: Representative to the USP Stakeholders Meeting</p> <p>2007: Program Committee</p> <p>2008 Annual Meeting Committee</p> <p>2015-present Recertification Program Advisory Committee</p>
1995- Present	Board of Pharmaceutical Specialties	<p>Member</p> <p>Item writer/reviewer, nutrition support pharmacist board certification</p> <p>2008: BPS Representative APhA Academy of Student Pharmacists Midyear Regional Meeting, Boston, MA</p> <p>2010-2013: Specialist member, BPS</p>

		Specialty Council on Nutrition Support Pharmacy
1996-1998	Pharmacy Technician Certification Board (PTCB)	Item writer/reviewer, technician certification examination
1997-1999	Council of Pharmacists, Hospital Pharmacist Report/Drug Topics	Member
1999-Present	American College of Clinical Pharmacy	Member Pediatric Self-Assessment Program (PedSAP) pilot tester
2003-2005	Pharmacy Grand Rounds Steering Committee, Massachusetts College of Pharmacy and Health Sciences, Council of Boston Teaching Hospitals	Member
2005-Present	European Society for Clinical Nutrition and Metabolism	Member
2014	European Academy of Paediatrics (EAP)	Member
2014-Present	American Society for Nutrition (ASN)	Member
2016-Present	Academy of Nutrition and Dietetics Evidence Analysis Workgroup for the Evidence Analysis Library (EAL)	Member
2017-Present	Oley Foundation	Member, Oley Advisory Council
2019-Present	The North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN)	Member. NASPGHAN Council for Pediatric Nutrition Professionals (CPNP)

Grant Review Activities

2009- 2016	ASHP Research Foundation	Reviewer
2010	Health Research Board, An Bord Taighde Sláinte, Dublin, Ireland	Reviewer
2011-2014	ASPEN Rhoads Research Foundation	Reviewer

2016-
Present

Swiss National Science Foundation

Reviewer

Editorial Activities

Ad hoc Reviewer

American Journal of Health-System Pharmacy
Nutrition in Clinical Care
Best Practices for Hospital & Health-System Pharmacy
Practice Standards Division, American Society of Health-System Pharmacists
JPEN Journal of Parenteral and Enteral Nutrition
NCP, Nutrition in Clinical Practice
JPPT Journal of Pediatric Pharmacology and Therapeutics
The Annals of Pharmacotherapy
A.S.P.E.N. Core Curriculum
Clinical Orthopaedics and Related Research
Journal of Perinatology
Nutrition
Clinical Nutrition
Pediatrics
The Journal of Pediatrics
American Journal of Infection Control
A.S.P.E.N. Pediatric Nutrition Support Core Curriculum 1st edition
Acta Paediatrica
British Journal of Nutrition
Journal of the American Dietetic Association
A.S.P.E.N. Adult Nutrition Support Core Curriculum
European Journal of Clinical Nutrition
The Journal of the Academy of Nutrition and Dietetics
Nutrients
International Journal of Medical Sciences
Applied Physiology, Nutrition, and Metabolism
Neonatology
British Journal of Pharmaceutical Research
European Journal of Pediatrics
Expert Review of Gastroenterology & Hepatology
Journal of Medical Case Reports
A.S.P.E.N. Pediatric Nutrition Support Core Curriculum 2nd edition
BMC Research Notes
The Journal of Thrombosis and Haemostasis
Postgraduate Medicine
Lifeline Newsletter, Oley Foundation
Journal of Nutrition and Health
Jornal de Pediatria (Brazil)
Expert Opinion on Drug Delivery
Journal of Infection and Public Health

International Journal of Drug Safety and Discovery
 Journal of Cardiovascular Pharmacology and Therapeutics
 Nutrition Research
 Clinical Biochemistry
 Hospital Practice
 Pharmaceutics
 Clinical Nutrition ESPEN
 Pharmacy
 Journal of Nutrition & Intermediary Metabolism
 Annals of the New York Academy of Sciences
 Hospital Pharmacist's Letter and Hospital Prescriber's Letter
 Early Human Development
 Journal of Colloid and Interface Science
 Therapeutics and Clinical Risk Management
 Journal of Pediatric Intensive Care
 The Journal of Nutrition
 Scientific Reviews
 EBioMedicine
 BMC Pediatrics
 Frontiers in Pharmacology
 PLOS One
 Frontiers in Pediatrics
 Journal of Pediatric Gastroenterology and Nutrition (JPGN)

Other Editorial Roles

2008- 2016	Editorial Board	ICAN: Infant, Child, & Adolescent Nutrition
2012- 2019	Editorial Board	JPEN: Journal of Parenteral and Enteral Nutrition
2013-2016	Editorial Board	AJIC American Journal of Infection Control
2019-present	Associate Editor	JPEN: Journal of Parenteral and Enteral Nutrition

Honors and Prizes

1979	Rho Chi First Year Award	Massachusetts College of Pharmacy (MCP)	National Pharmaceutical Academic Honor Society
1979	Rho Pi Phi First Year Award	MCP	Pharmaceutical Fraternal Society
1980	1st Year Award	Massachusetts Society of Hospital Pharmacists	

1981	Rho Chi Honor Society	MCP	National Pharmaceutical Academic Honor Society
1981	Rho Chi Third Year Award	MCP	National Pharmaceutical Academic Honor Society
1994	Practitioner Excellence Award	Massachusetts Society of Health System Pharmacists	
2001	Fellowship appointment	American Society of Health-System Pharmacists	
2007	Innovative Pharmacy Practice Award	Massachusetts Pharmaceutical Association	Research
2007	Best of the New Award	Boston Globe	Research
2008	Stanley Serlick Award	American Society for Parenteral and Enteral Nutrition	For significant contributions to improving safe practices for parenteral nutrition
2009	The 2009 Drug Therapy Research Award	American Society of Health Systems Pharmacists	For an Outstanding Contribution to the Research Literature Related to Drug Therapy in Health Systems
2010	2009 Top 5 Papers of the Year	Journal of Parenteral and Enteral Nutrition	
2010	MSHP Outstanding Service Award	Massachusetts Society of Health System Pharmacists	Leadership and Service
2011	2010 Top cited Papers of the Year	Metabolism: Clinical and Experimental	
2011	Fellowship appointment	Pediatric Pharmacy Association (formerly Pediatric Pharmacy Advocacy Group)	
2012	Distinguished Nutrition Support Pharmacist Award	American Society for Parenteral and Enteral Nutrition	Contributions to the practice of nutrition support pharmacy
2013	Fellowship appointment	American Society for Parenteral and Enteral Nutrition	
2018	2018 Clinical Nutrition Team of Distinction Award	American Society for Parenteral and Enteral	

		Nutrition	
2019	2019 Best in Care Award (nominee, CAIR program)	Boston Children's Hospital	
2019	Fellowship appointment	Massachusetts Society of Health System Pharmacists	
2020	ASPEN Champion	American society for Parenteral and Enteral Nutrition	
2020	HPN Research Prize	Oley Foundation	For the manuscript, "Intravenous Fish Oil Monotherapy as a Source of Calories and Fatty Acids Promotes Age-Appropriate Growth in Pediatric Patients with Intestinal Failure-Associated Liver Disease"
2020	The Richard A. Helms Award of Excellence in Pediatric Pharmacy Practice	Pediatric Pharmacy Association	For exemplary pediatric patient care, sustained and meritorious contributions to pediatric pharmacy practice, sustained and meritorious contributions to PPA, contributions to education, precepting, and/or mentorship, and contributions of new knowledge (scholarship)

Report of Funded and Unfunded Projects

Funding Information

Past

2006-2009 Efficacy of Omega-3 enriched fat emulsions in the prevention of parenteral nutrition induced liver injury in infants (Prospective randomized trial)
 March of Dimes (Puder, PI)
 Co-PI (\$256,086/total directs)
 Efficacy of Omega-3 enriched fat emulsion in the prevention of PNALD in infants.
 The goals of this project were 1.) To determine whether the parenteral administration of an omega-3 fatty acid based fat emulsion reduces the proportion of cholestasis in infants. 2.)

Describe biochemical tests of liver function profiles over time in the two treatment groups.
3.) To assess the safety and tolerability of an omega-3 fatty acid based fat emulsion (Omegaven) as opposed to a conventional fat emulsion (Intralipid®).

- 2008-2012 Cholestasis Prevention: Efficacy of IV Fish Oil
FDA, R01 FD003436
Co-PI (\$262,745/total direct) (Puder, PI)
The goals of this project were: To determine the safety and efficacy of preventing parenteral nutrition associated liver disease with a fish oil-based emulsion.
- 2010-2012 An initial trial of enteral fish oil supplementation in the treatment of intestinal failure-associated liver disease.
Harvard Catalyst | The Harvard Clinical and Translational Science Center (NIH Award #UL1 RR025758)
Co-PI (\$50,000/total direct)
The goal was to determine whether oral omega-3 fatty acids will reverse continued liver injury after patients are weaned from parenteral nutrition.
- 2008-2013 Cholestasis Reversal: Efficacy of IV Fish Oil
FDA R01 FD003460
Co-PI (\$462,053/total direct) (Puder, PI)
The goals of this project were: To determine the safety and efficacy of treating parenteral nutrition associated liver disease with a fish oil-based emulsion.
- 2014-2015 Co-investigator, Abbott Fund facilitated by BU, USA, Nutrition status of children with congenital heart disease (CHD) before and after corrective cardiac surgery in Children's Hospital 1, Viet Nam (Lenders/Tang)
- 2015-2016 Safety and tolerability of intravenous fish oil lipid emulsion during hematopoietic cell transplantation in children.
Inquiry Investment Drives Evidence into Action Grant Program
PI (\$49,500 total direct)
The goal of this project is to determine the safety of a fish oil lipid emulsion in children undergoing hematopoietic cell transplantation. This is a randomized, controlled pilot study to test the safety and tolerability of FOLE, compared to soybean oil lipid emulsion, in 20 children requiring PN during hospitalization for HCT
- 2015-2016 Safety and tolerability of intravenous fish oil lipid emulsion during hematopoietic cell transplantation in children.
American Society for Parenteral and Enteral Nutrition
Co-PI (\$30,000 /total direct)
- Current**
- 2016-2018 The Safety and Tolerability of Intravenous Fish Oil Lipid Emulsion in Children Undergoing Hematopoietic Cell Transplantation.
Gateway for Cancer Research

Co-PI (\$256,745/ total direct)

- 2017-2018 Production and Evaluation of a New Intravenous Lipid Emulsion
Otsuka Pharmaceutical Group
Role: Co-investigator (\$165,227/total direct) (Puder PI)
- 2018-2020 A 90 day, Phase 3, Open Labeled Exploratory Study of RELiZORB to Evaluate Safety,
Tolerability, and Nutrient Absorption in Children with Short Bowel Syndrome who are
Dependent on Parenteral Nutrition
Alcresta
Role: Co-investigator (\$673,000/total direct) (Puder PI)
- 208 The role of GPR120 signaling and treatment with a modified fatty acid molecule in high fat
diet-induced murine model of insulin-resistance and hepatic steatosis.
Northsea Therapeutics
Role: Co-investigator (\$104,184/total direct) (Puder PI)
- 2018 Structurally engineered fatty acid, PRB-06179 in a murine model of parenteral nutrition
associated liver injury.
Northsea Therapeutics
Role: Co-investigator (38,225/total direct) (Puder PI)
- 2020 KiteLock for prevention of Central venous line infections
Sterilecare
Role: Co-investigator (Puder PI)
- 2020 Variables Associated with Central Line Occlusions
IDEA grant
Role: Co-investigator (DeGrazia, PI)

Past Unfunded Projects

- 2004-2018 Compassionate use of Intravenous Fish Oil in the Management of PN Induced Liver Injury
(Puder)
- 2013-2017 Development of Infants and Aluminum Levels: DIALS (Woolf)

Report of Local Teaching and Training

Teaching of Students in Courses

- 1994 Pharmaceutical Technology Health Technician Group, Massasoit
Community College, Brockton, MA
Two 2 hour sessions per week for 10
weeks

1995-1996	Sterile Products Pharmacy Practice 4 th year pharmacy students	Northeastern University One 2 hour session
1996	Sterile Products Pharmacy Practice 4 th year pharmacy students	Northeastern University One 2 hour session
1999	Vascular Access Devices 4 th year pharmacy students	Massachusetts College of Pharmacy One 1 hour session
1999	Compounding of Sterile Products/ Aseptic Technique	Massachusetts College of Pharmacy 1 session per week for 12 weeks
1999- Present	Fluid and Electrolytes 5 th year pharmacy students	Massachusetts College of Pharmacy One 2 hour session
1999- Present	Parenteral and Enteral Nutrition 5 th year pharmacy students	Massachusetts College of Pharmacy Three 2 hour sessions
2003-2016	Special Topics in Pediatric GI Nurse Practitioner/Physician's Assistant	Northeastern University Two 2 hour sessions
2005	Overview of Pediatric Nutrition 5 th year pharmacy students	School of Pharmacy, University of Connecticut, Storrs, CT One 2 hours session
2006	Pediatric Nutrition 5 th year pharmacy students	School of Pharmacy, University of Connecticut, Storrs, CT One 2 hour session
2014- Present	Parenteral and Enteral Nutrition 5 th year pharmacy students	Northeastern University Two 2 hour sessions

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

1997	Drug-Nutrient Interactions Interns-Fellows	Boston Children's Hospital One hour lecture
1997	Overview of Incompatibilities Interns-Fellows	Boston Children's Hospital One hour lecture
1999	Gastroesophageal Reflux Disease Interns	Marino Center for Progressive Health, Cambridge, MA One hour lecture
2001	Aminoglycosides Pharmacokinetics in Cystic Fibrosis Patients Interns-Fellows	Boston Children's Hospital One hour lecture

2002	Essential Fatty Acid Deficiency Interns-Fellows	Boston Children's Hospital One hour lecture
2003	Patient Compliance Interns-Fellows	Boston Children's Hospital One 1 hour lectures
2003	Secondary Dyslipidemia Interns-Fellows	Boston Children's Hospital One hour lecture
2003	Aluminum Toxicity Interns-Fellows	Boston Children's Hospital One hour lecture
2004	Metabolic Bone Disease in the NICU Interns-Fellows	Boston Children's Hospital One 1 hour lectures
2005	Overview of Commonly Medications Used to Treat GERD Interns-Fellows	Boston Children's Hospital Two 1 hour lectures
2006	Reversal of Parenteral Nutrition Associated Cholestasis in Two Infants Using Parenteral Fish Oil Interns-Fellows	Boston Children's Hospital One hour lecture
2008	IBD Drug Review Interns- Fellows	Boston Children's Hospital One 2 hour lecture
2009	Medication Review: Gastroesophageal Reflux Disease Fellows	Boston Children's Hospital One hour lecture
2009	Management of Catheter Occlusions Interns-Fellows	Boston Children's Hospital One hour lecture
2010	Omegaven Interns-Fellows	Boston Children's Hospital One hour lecture
2012	Overview of Amino Acid Products Interns-Fellows	Boston Children's Hospital One hour lecture
2013	Vitamins and Nutritional Supplements Interns-Fellows	Boston Children's Hospital One hour lecture
Ongoing	Introduction to Parenteral Nutrition Interns-Fellows	Boston Children's Hospital One hour orientation

Clinical Supervisory and Training Responsibilities

7/1999-present	Clinic preceptor/ pharmacy practice Boston Children's Hospital	Twenty-four weeks per year with doctor of pharmacy students, PGY2 pharmacy residents, and international pharmacists and physicians participating in nutrition fellowships. Direct contact and interactions at minimum 20 hours per week.
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Laboratory and Other Research Supervisory and Training Responsibilities

7/2002-present	Research Collaborator/ Boston Children's Hospital	Collaborated with research fellows in both basic and clinical research. Direct contact and interactions 2 hours per week.
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Formally Supervised Trainees at Boston Children's Hospital

2001-2002	Jenna Garza M.D./ Pediatric Surgeon, McAllen TX Published 2 manuscripts	
2002-2003	Patrick Javid, M.D./ Pediatric Surgeon, Associate Professor University of Washington, Seattle Published 4 manuscripts	
2003-2004	Ian Alwayn M.D., Ph.D./ Transplant Surgeon/Research Associate, Associate Professor Published 5 manuscripts	
2005-2007	Sendia Kim, M.D./ Plastic Surgeon, MD Anderson Cancer Center, Houston TX Published 5 manuscripts.	
2005-2007	Sang Lee, M.D./ Pediatric Surgeon, Assistant Professor, University of North Carolina, Chapel Hill Published 8 manuscripts	
2007-2010	Hau Le, M.D./ Assistant Professor, University of Wisconsin, Madison WI Published 16 manuscripts	
2007-2009	Jonathan Meisel, M.D./ Surgery Resident, Beth Israel Deaconess Medical Center Published 11 manuscripts/Currently Assistant Professor Emory University	
2007-2009	Vincent de Meijer, M.D./ Ph.D./Surgery Resident Erasmus MC, Netherlands Published 13 manuscripts	
2008-2010	Alpin Malkan, M.D./ Surgery Resident Danbury Hospital Published 2 manuscripts	
2009-2012	Erica Fallon, M.D./ Pediatric Surgery Fellow, Toronto Sick Kids	

- Published 14 manuscripts
- 2010-2012 Deepika Nehra, M.D./ General Surgery Resident, Massachusetts General Hospital
Published 7 manuscripts
- 2011-2013 Brian Kalish/ Harvard Medical Student
Neonatology and Research Fellow, Boston Children's Hospital
Published 5 manuscripts
- 2011-2014 Sarah Carlson, M.D./General Surgery Resident, Beth Israel Deaconess Hospital
Published 11 manuscripts
- 2012-2015 Prathima Nandivada M.D./ Surgery Resident Beth Israel Deaconess Hospital
Published 16 manuscripts
- 2012-2014 Melissa Chang, M.D./General Surgery Resident Mount Sinai Hospital, New York, NY.
Published 8 manuscripts
- 2012-2014 Eileen Cowan, M.D./Neonatologist Assist. Professor University of Wisconsin, Madison
Published 7 manuscripts
- 2014-2017 Gillian Fell, M.D., Ph.D./ Research Fellow, Boston Children's Hospital and General
Surgery Resident, Brigham and Women's Hospital, Boston MA
Published 19 manuscripts
- 2015-2017 Meredith Baker, M.D./ Research Fellow, Boston Children's Hospital and General Surgery
Resident, Beth Deaconess Hospital, Boston, MA
Published 17 manuscripts
- 2015-2019 Duy Dao, M.D./ Research Fellow, Boston Children's Hospital and General Surgery
Resident, NYU Langone Medical Center, New York, NY
Published 16 manuscripts.
- 2015-2019 Lorenzo Anez-Bustillos, M.D./Research Fellow and General Surgery Resident, Beth
Deaconess Hospital, Boston, MA
Published 16 manuscripts
- 2016-2019 Bennet Cho/Harvard Medical School
Surgical Research Fellow, Boston Children's Hospital
Published 8 manuscripts
- 2016 Zhiling Li PhD
Visiting pediatrician, Shanghai Children's Hospital, Shanghai Jiao Tong University
Published 1 manuscript
- 2018 Paul Anthony McGregor Crowley, MD
Fellow in Gastroenterology, Hepatology, and Nutrition

Published 1 manuscript

2018-2020	Victoria Ko, M.D. Surgical Research Fellow, Boston Children's Hospital
2018-present	Jenny Yu, MD Research Fellow Sandra and Richard Cumming Research Fellowship (BIDMC)
2019-present	Jordan Secor, MD/Research Fellow
2020-present	Savas Tsikis, MD/Research Fellow
2020-present	Scott Fligor, MD/Research Fellow
2020-present	Kristin Leone, MD/Research Harvard Neonatal-Perinatal Medicine Fellowship Program, Scholarship Oversight Committee

Formal Teaching of Peers (e.g., CME and other continuing education courses)

2007	Enhancing the Safety of Parenteral and Enteral Nutrition "Home Parenteral Nutrition in the Pediatric Patient: Special Considerations" Harvard Medical School Continuing Education	Lecture Cambridge, MA
2007	Enhancing the Safety of Parenteral and Enteral Nutrition "Calcium- Phosphate Compatibility" Harvard Medical School Continuing Education	Roundtable discussion Cambridge, MA
2008	Enhancing the Safety of Parenteral and Enteral Nutrition, "Is there a Role for Peripheral Parenteral Nutrition?" Harvard Medical School Continuing Education	Lecture Cambridge, MA
2008	Enhancing the Safety of Parenteral and Enteral Nutrition, "Issues in Calcium-Phosphate Compatibility," Harvard Medical School Continuing Education	Roundtable discussion Cambridge, MA

Local Invited Presentations

Those presentations below sponsored by outside entities are so noted and the sponsor identified.

- 1991 “Variations in Compounding Practices Among Home Care Companies,” Longwood Nutrition Rounds, February, 1991
- 1993 “Incidence of Cholestasis in Infants Receiving Parenteral Nutrition: Comparison of Aminosyn PF and TrophAmine.” Deaconess Home Health Care, Boston, MA
- 1996 “Quality Assurance of Sterile Products.” Presented to members of the department of pharmacy, Children's Hospital, Boston, MA
- 1996 “Management of Catheter Occlusions,” Massachusetts Society of Health Systems Pharmacists Annual Meeting in Boxborough, MA
- 1997 “Medication Errors,” presented to nursing staff in conjunction with Risk Management staff of Children's Hospital, Children's Extended Care Center, Groton, MA
- 1998 “Minimizing Incompatibilities,” presented to the pharmacy staff, Children's Hospital, Boston, MA
- 1998 “Issues with Parenteral Drug Therapy,” presented to the pharmacy staff, Beverly Hospital, Beverly, MA and the staff of Children's Hospital, Boston, MA.
- 1998 “Update on Extravasations,” presented to the pharmacy staff, Brigham & Women’s Hospital, Boston, MA
- 2000 “2000: An Antimicrobial Odyssey: New uses for Old Therapies and Review of New Agents,” with Roger Dionne, presented at the 1st Annual Cardiology Nursing Educational Day, Children’s Hospital, Boston, MA
- 2000 “Management of Catheter Occlusions,” presented to the pharmacy staff, Brigham and Women’s Hospital, Boston, MA
- 2003 “Essential Fatty Acid Deficiency,” Longwood Nutrition Conference, Division of Nutrition at Harvard, Harvard Medical School, Boston, MA
- 2003 “Update on Incompatibilities/FDA Aluminum Mandate,” Apria Healthcare, Norwood, MA
- 2003 “Secondary Dyslipidemia in the ICU,” Longwood Nutrition Conference, Division of Nutrition at Harvard, Harvard Medical School, Boston, MA
- 2016 “Fluids, Electrolytes and Acid-Base,” Department of Clinical Nutrition, Boston Medical Center, Boston, MA
- 2018 “Nutrition Support Pharmacy Practice,” MCPHS University, Boston MA.
- 2019 “Alternative Lipid Emulsions,” Center for Nutrition, Division of Gastroenterology, Hepatology, and Nutrition, Boston Children’s Hospital, Boston, MA.

- 2020 “How to Survive an FDA Site Visit (and live to tell about it),” Clinical Research Regulatory Education Series, Boston Children’s Hospital, Boston, MA.
- 2020 “Medication Compatibility and Lipid Emulsions,” Clinical Nutrition Service, Boston Children’s Hospital, Boston, MA.
- 2020 “Hypertriglyceridemia, essential fatty acid and lipid infusion: Case and discussion,” Clinical Nutrition Service, Boston Children’s Hospital, Boston, MA.

Report of Regional, National and International Invited Teaching and Presentations

Invited Presentations and Courses

Those presentations below sponsored by outside entities are so noted and the sponsor identified.

Regional

- 1993 Pharmacy Technicians, Chemotherapy Preparation, as part of the NEAPT IV Proficiency Certification Course
- 1994 Pharmacy Technicians, review of drug classes and anatomy/physiology, as part of a NEAPT review program for technician certification exam
- 1995 “Drug-Nutrient Interactions/Compatibility of Medications with Enteral Feedings,” Monthly meeting of the Massachusetts Pediatric Dietitians Association, Boston, MA
- 1999 “Management of Catheter Occlusions,” Yankee Alliance Group Purchasing Organization, Nashua, New Hampshire
- 2000 “Managing the Urokinase Shortage,” New Hampshire Society of Health Systems Pharmacists, Manchester, New Hampshire
- 2001 “Management of Catheter Occlusions,” presented at monthly society meeting, RI Intravenous Nursing Society, Warwick, RI
- 2001 “Parenteral Nutrition Basics,” Department of Pharmacy’s monthly continuing education series, St. Vincent’s Medical Center, Worcester, MA
- 2002 “Abstract Preparation,” presented as a workshop to the staff of Baystate Medical Center, Massachusetts Society of Health-System Pharmacists Sturbridge, MA
- 2003 “FDA Aluminum Mandate,” Nutrition Case Conference, Connecticut Children's Hospital, Hartford, CT
- 2004 “Aluminum Exposure and Parenteral Nutrition,” Department of Pharmacy, Women’s and Infants Hospital, Providence, RI (Mayne Pharma)
- 2004 “Aluminum Toxicity,” New England Vascular Access Network, Concord, NH

- 2006 “USP Chapter 797 Update,” First Regional HOPA/MSHP Fall Meeting, Worcester, MA
- 2006 “Reversal of Parenteral Nutrition Associated Cholestasis in Two Infants Using Parenteral Fish Oil,” Pharmacy Grand Rounds, Northeastern University, Boston, MA
- 2008 “Current Challenges in Pediatric Pharmacy Practice,” Massachusetts Pharmacists Association 2008 Spring Conference, Norwood, MA
- 2009 “The Role of Intravenous Fish Oil Lipid Emulsions in the Treatment of TPN-Induced Liver Disease,” 20th Annual Conference of the Connecticut Organization of Neonatal Nurses, Plantsville CT
- 2009 “An Evening in Pediatrics,” Northeastern University Alumnae, Boston, MA.
- 2010 “Parenteral Lipid Emulsions: Nutrition or Drug? A Changing Paradigm,” Massachusetts Dietetics Association, MDA Annual Nutrition Convention 2010, Norwood. MA
- 2010 “Role of Parenteral Fish Oil in Metabolic Support,” Massachusetts Society of Health Systems Pharmacists Annual Meeting, Newton MA
- 2010 “Current Research in Pediatric Nutrition Support,” Introduction to Pediatric Nutrition, Children's Hospital, Boston, Boston, MA
- 2013 “Drug Therapy and Short Bowel Syndrome: What every pharmacist should know,” Massachusetts Pharmacists Association 2013 Spring Conference, Norwood, MA, April 26, 2013
- 2014 “Drug Delivery in Pediatric Patients: Current Challenges in Pharmacy Practice,” MCPHS University Reed Refresher, Foxboro, MA
- 2016 “Nutrition Support Pharmacy,” AACP Student Chapter, Northeastern University, Boston, MA.
- 2017 “Pediatric Challenges in Sterile Products Compounding,” Massachusetts Pharmacists Association, Norwood, MA, January 17, 2017.
- 2018 “The Perils and Practical Pearls of Publishing at the Daily Planet,” Massachusetts Society of Health Systems Pharmacists Annual Meeting, Framingham, MA.
- 2018 “ASHP Delegate Gotham Town Hall: Pharmacy Issues Relevant to You,” Massachusetts Society of Health Systems Pharmacists Annual Meeting, Framingham, MA.
- 2018 “Pharmacologic Management of Intestinal Failure,” The Salah Foundation Children’s Hospital, Fort Lauderdale, FL, September 28, 2018.

- 2018 “Drug Shortages: Focus on Parenteral Nutrition,” The Oley Foundation Regional Conference, Bentley University, Waltham, MA, October 6, 2018.
- 2018 “Lessons Learned from Omegaven,” Longwood Nutrition Rounds, Harvard Medical School, Boston, MA, November 6, 2018.
- 2018 “A Whale of a Tale: Making Sense of Lipid Emulsions,” Northwest Chapter of ASPEN, Seattle, WA, December 12, 2018. [webinar]
- 2019 “Practical Implications of the Use of Omegaven and SMOF IV Lipids in the NICU, PICU and Beyond,” Children's Hospital of The King's Daughters, Norfolk, VA, March 8, 2019.

National

- 1995 “Controversies in Pediatric Parenteral Nutrition,” Pediatric Pharmacy Advocacy Group Annual Meeting, Las Vegas, Nevada
- 1996 “Medication Errors,” Annual meeting of the Abbott Laboratories Advisory Panel, Chicago, Illinois
- 1996 “Management of Catheter Occlusions,” Pediatric Pharmacy Advocacy Group’s Annual Meeting in Beaver Creek, Colorado
- 1996 “Emerging Technologies,” Annual meeting of the Abbott Laboratories Advisory Panel, Chicago, Illinois
- 1996 “Issues in Pediatric Nutrition,” Pediatric Pharmacy Advocacy Group, 5th Annual Pediatric Technology Conference, Scottsdale, AZ
- 1998 “Evolving technologies,” presented to the Abbott Advisory Board, Abbott Laboratories, Deerfield Park, IL
- 1999 “Administration of Medications to Patients on Parenteral Nutrition,” presented at the Midyear Clinical Meeting, American Society of Health Systems Pharmacists, Orlando, FL
- 1999 “Pharmacist Role in Error Prevention,” presented at the Midyear Clinical Meeting, American Society of Health Systems Pharmacists, Orlando, FL
- 1999 “Implementation of the NAG's TPN Guidelines: Pediatric Considerations,” presented at the 23rd Clinical Congress, American Society for Parenteral & Enteral Nutrition, San Diego, CA
- 2000 “Management of Central Venous Catheter Occlusions,” presented as an open forum discussion at the 9th Annual Meeting, Pediatric Pharmacy Advocacy Group, San

Antonio, TX

- 2001 “Sweet Relief: Use of Sucrose as an Analgesic in Neonates,” presented as a clinical pearl at the Midyear Clinical Meeting, American Society of Health-System Pharmacists New Orleans, LA
- 2003 “Incidence and Nature of Epidemic Nosocomial Infections,” INS Fall Meeting, Infusion Nurses Society, Boston, MA
- 2003 “Aluminum Exposure in the Pediatric Parenteral Nutrition Therapy: A New Safety Mandate Important in Clinical Practice,” presented with Dr. Winston Koo, CMGI Global, Dallas, TX, and repeated in Houston, TX and Miami, FL
- 2003 “Aluminum Toxicity: Hysteria or Cause for Concern,” American Society of Health-System Pharmacists, Midyear Clinical Meeting, New Orleans, LA
- 2004 “Pediatrics: Acute Complications Associated with Parenteral Nutrition,” Nutrition Week, Las Vegas, NV
- 2004 “Impact of Nutrition on Pharmacokinetics,” Nutrition Week, Las Vegas, NV
- 2004 “Issues in Aluminum and DEHP Toxicity,” Annual Meeting, Pediatric Pharmacy Advocacy Group, St., Petersburg, FL
- 2004 “Albumin and Low-Aluminum Therapies: A Hospital Pharmacists’ Perspective,” Orlando, FL (sponsored by JL Associates)
- 2005 “Aluminum Toxicity,” Nutrition Week, American Society for Parenteral and Enteral Nutrition, Orlando, FL
- 2005 “Overview of Pediatric Nutrition,” Pediatric Pharmacy Advocacy Group 14th Annual Meeting, Chicago, IL
- 2005 “Pediatric Nutrition,” American Society of Health-System Pharmacists, Clinical Midyear Meeting, Las Vegas, NV
- 2006 “Secondary Dyslipidemia,” American Society for Parenteral and Enteral Nutrition, Clinical Nutrition Week, Dallas, TX
- 2007 “Pharmacological Management of Intestinal Failure,” American Society for Parenteral and Enteral Nutrition, Clinical Nutrition Week, Phoenix, AZ
- 2007 “Soy Allergy,” American Society for Parenteral and Enteral Nutrition, Nutrition Week, Phoenix, AZ
- 2007 “CPOE vs. Pediatric Parenteral Nutrition: Challenges and Opportunities.” Pediatric Pharmacy Advocacy Group, Pediatric Medication Safety and Technology Conference, Austin, TX

- 2007 “Treatment of TPN Liver Injury,” Oley Foundation 22nd Annual Consumer/Clinician Conference, Hyannis, MA
- 2007 “Treatment of Parenteral Nutrition Associated Cholestasis,” Pediatric Pharmacy Advocacy Group, 16th Annual Meeting, Portsmouth, VA
- 2007 “Clinical Status of Omega-3 Fatty Acids in Special Patient Populations,” American College of Clinical Pharmacy Annual Meeting, Denver, CO
- 2007 “Pediatric Parenteral Nutrition,” American Society of Health-System Pharmacists, Clinical Midyear Meeting. Las Vegas, NV
- 2008 “Omegaven in TPN liver disease,” Expert Workshop on Lipid Emulsions in TPN Liver Disease, Institute of Human Nutrition. Columbia University Medical Center, New York, NY
- 2008 “Omegaven Update,” HomeTPN Consumer Education Conference 2008, Boston MA
- 2008 “Use of Omegaven in Parenteral Nutrition Associated Liver Disease,” NutriThrive Consumer Symposium, Pittsburgh, PA
- 2008 “The Role of Omega-3 Fatty Acids in Lipid Emulsion,” 28th Annual FSPEN Symposium, September 19, 2008, Melbourne, FL
- 2008 “Overview of Parental Nutrition in the Pediatric Patient,” pre conference symposium, 17th PPAG Annual Meeting, Baltimore, MD
- 2008 “Issues in Pediatric Standardization,” presented to the Pharmacy Advisory Board, Baxa Corporation, Englewood, Colorado
- 2008 “Clinical Role of Omega 3 Fatty Acids in Special Patient Populations,” New York/Long Island Society for Parenteral and Enteral Nutrition , Annual Meeting 2008, Hixsville, New York
- 2008 “Pediatric Parenteral Nutrition,” American Society of Health-System Pharmacists, Clinical Midyear Meeting. Orlando Florida
- 2009 “Liver Function Tests,” American Society for Parenteral and Enteral Nutrition – Clinical Nutrition Week, 2009, New Orleans, LA
- 2009 “In Case You Missed It: Notable Papers in Pediatric Nutrition 2008” American Society for Parenteral and Enteral Nutrition –Clinical Nutrition Week, 2009, New Orleans, LA
- 2009 “A Whale of a Tale: Use of Fish Oil in PN Liver Disease,” 2009 Pediatric Nutrition Symposium: Putting Pediatric Nutrition into Practice, Pediatric Nutrition Dietetic

Practice Group (PNPG) of the American Dietetic Association, Raleigh, North Carolina

- 2009 “The Role of Fish Oil Lipid Emulsions and Omega-3 Fatty Acids in Parenteral Nutrition Associated Liver Disease,” Ohio Society for Parenteral and Enteral Nutrition (OSPEN), Columbus, Ohio
- 2009 “Intravenous Fish Oil Lipid Emulsions: Management of TPN-Induced Liver Disease,” Neonatal Advanced Practice Nursing Forum 2009, Washington, DC
- 2009 “What’s Up with Omegaven?” 24th Annual Oley Consumer/Clinician Conference, St. Petersburg, FL
- 2009 “Case Studies in Nutrition Across the Life Cycle: Neonatal Case Study,” ASHP Midyear Clinical Meeting, Las Vegas, NV
- 2009 “Fish vs. Vegetable: An Update on the IV Lipid Content Debate,” Greater Pittsburgh chapter of the American Society for Parenteral and Enteral Nutrition, Fall Meeting, Pittsburgh, PA
- 2010 “Parenteral Nutrition Associated Liver Disease (PNALD): What are the prevention and treatment options?” American Society for Parenteral and Enteral Nutrition – Clinical Nutrition Week, 2010, Las Vegas, NV
- 2010 “Pharmaconutrient considerations for the critically ill child - a new paradigm,” American Society for Parenteral and Enteral Nutrition, Clinical Nutrition Week, 2010, Las Vegas, NV
- 2010 “Parenteral Lipid Emulsions: Nutrition or Drug? A Changing Paradigm,” Michigan Chapter of the American Society for Enteral and Parenteral Nutrition (MSPEN) Annual Meeting, Livonia, Michigan
- 2011 “Challenges in Medication Administration in PN Dependent Patients,” American Society for Parenteral and Enteral Nutrition –Clinical Nutrition Week, 2011, Vancouver, BC, Canada
- 2011 “Management of Complications of SBS and Intestinal Failure: Drug Therapy,” Holtz Children’s Hospital, University of Miami, Miami, Florida
- 2011 “Efficacy of Parenteral Fish Oil Lipid Emulsions in Parenteral Nutrition Associated Liver Disease: Where are we at?” Annual Meeting, Virginia Society for Parenteral and Enteral Nutrition (VASPEN)
- 2012 “Bringing in unapproved drugs into the market-- Humanitarian exemptions – like HDE- Compassionate use via IRB and Importation,” an A.S.P.E.N. Corporate Scientific Council Informational: How to Get Nutrition Products to Market, November 27, 2012

- 2012 “Don’t Hold the Salt...Impact of Hyponatremia on Growth in Infants Receiving Adequate Calories,” ASHP Midyear Clinical Meeting 2012, Las Vegas, NV
- 2013 “Pediatric Considerations in PN compounding,” 2013 Clinical Nutrition Week, ASPEN, Phoenix, NV
- 2013 “Summary, Recommendations and A.S.P.E.N. Position Statement on the Clinical Role for Alternative IVFE,” 2013 Clinical Nutrition Week, ASPEN, Phoenix, NV
- 2013 “Neonatal Nutrition,” 22nd Annual Meeting of the Pediatric Pharmacy Advocacy Group (PPAG), Indianapolis, Indiana
- 2013 “Pediatric/Neonatal Parenteral Nutrition: the Ins and Outs for the Non-Pediatric Clinician,” American Society for Parenteral and Enteral Nutrition, Webinar August 14, 2013
- 2013 “Lipid Emulsion Update,” B Braun Pharmaceutical Advisory Board Meeting, Bethlehem, PA
- 2013 “Pediatric Considerations in PN compounding,” 2013 Clinical Nutrition Week, ASPEN, Clinical Nutrition Week 2014, Phoenix, NV
- 2014 “Intravenous Fat Emulsions: Nutritional Source or Therapeutic Modality?” American Society for Parenteral and Enteral Nutrition Webinar, June 18, 2014
- 2014 “Swimming with CVCs and G Tubes: yeah or nay?” 2014 Oley Conference, Orlando, Florida
- 2014 “Review of Intravenous Fat Emulsions in Parenteral Nutrition: Past, Present and Future,” B. Braun/CAPS Annual Training Session, Bethlehem, PA
- 2014 “Parenteral Nutrition Associated Liver Disease: It’s the Type of Lipid,” Guts and the City: Intestinal Failure, Rehabilitation and Transplantation Symposium, Icahn School of Medicine at Mount Sinai, New York City, NY
- 2014 “Oils Well That Ends Well, Update on Intravenous Lipid Emulsions,” Annual Meeting, Long Island Society for Parenteral and Enteral Nutrition, Hicksville, NY
- 2014 “Pharmacological Issues with Bacterial Overgrowth: Causes and Treatment Strategies,” Thrive 3rd Annual Professional Short Bowel Conference, Nashville, TN
- 2015 “Lipid Management Strategies in PNALD: Dose Minimization vs. Type of Oil,” Contemporary Forums, Neonatal Pharmacology, Scottsdale, Arizona
- 2015 “Nutritional Considerations in Short Bowel Syndrome,” Contemporary Forums, Neonatal Pharmacology, Scottsdale, Arizona
- 2015 “Compounding Considerations of Neonatal Parenteral Nutrition,” Contemporary

Forums, Neonatal Pharmacology, Scottsdale, Arizona

- 2015 “Understanding Lipid Emulsions,” ThriveRx Professional Webinar Series, June 11, 2015
- 2015 “What’s New in Biologics, Premixed Parenteral Nutrition and Lipid Emulsions,” breakout session, Oley Foundation 30Th Annual Consumer Conference, Saratoga Springs, New York
- 2015 “Pharmacological Issues with Bacterial Overgrowth: Causes and Treatment Strategies,” Oley Foundation 30th Annual Consumer Conference, Saratoga Springs, New York
- 2015 “Lock it Up: Ethanol Lock,” ASHP Midyear Clinical Meeting, New Orleans, LA
- 2016 “Liver Disease Among Infants Receiving Parenteral Nutrition,” Drug-Induced Liver Injury (DILI) Conference XVI, College Park, MD
- 2016 “The Link Between PN Liver Injury and Fat: Is it the Dose or Type of Oil?,” PPAG Annual Meeting, Atlanta, GA
- 2016 “Navigating the Seas: Electrolytes, Minerals and Acid-Base Balance,” Academy of Nutrition and Dietetics, FNCE Food and Nutrition Conference Expo, Boston, MA.
- 2017 “Current Approach and Emerging Therapies in the Management of Intestinal Failure and Parenteral Nutrition Associated Liver Disease,” Clinical Nutrition Week, Orlando, FL.
- 2017 “Drug-Nutrient Interactions,” Clinical Nutrition Week, Orlando, FL.
- 2017 “Intestinal Failure,” presented to the staff of Children FIRST (Florida Intestinal Rehabilitation Support and Treatment,” Salah Children’s Hospital, Fort Lauderdale, FL.
- 2017 “Developments in Home Parenteral Nutrition: Preventing and Managing Complications in Adult and Pediatric Patients,” 2017 National Home Infusion Association (NHIA) Annual Conference and Exposition, Orlando, FL.
- 2017 “Oils Well That Ends Well (Lipids That Is!)” 32nd Annual Consumer/Clinician Conference, The Oley Foundation, Old Greenwich, CT.
- 2017 “To Swim with a Central Line...or Not? You Decide!” 32nd Annual Consumer/Clinician Conference, The Oley Foundation, Old Greenwich, CT.
- 2017 “Pediatric Nutrition,” Pediatric Pharmacy Advocacy Group Specialty Meeting/Board Prep Course, Cincinnati, Ohio.
- 2017 “Developments in Home Parenteral Nutrition: Preventing and Managing

- Complications in Pediatric Patients,” National Home Infusion Association (NHIA) [webinar]
- 2018 “Drug Nutrient Interactions: Pediatric Issues,” ASPEN 2018 Nutrition Science & Practice Conference, Las Vegas, NV, January 24, 2018.
- 2018 “Optimizing TPN in the Face of Shortages,” Neonatal Pharmacology, Contemporary Forums, Philadelphia, PA, April 19, 2018.
- 2018 “Lipid Emulsions in the Neonate,” Neonatal Pharmacology, Contemporary Forums, Philadelphia, PA, April 19, 2018.
- 2018 “Challenges in Pediatric PN: New Products, New Rule,” Pediatric Pharmacy Advocacy Group 27th Annual Meeting, Salt Lake City, UT, April 26, 2018.
- 2018 “General Overview: Nutrition in the Pediatric Population,” Global Medical Affairs Wellness, Pfizer, Inc., May 2, 2018 [webinar]
- 2018 “Pediatric Intestinal Failure-Associated Liver Disease: Challenges in Identifying Clinically Relevant Biomarkers,” ASHP Emerging Sciences SAG Meeting, Clinical Pearl, May 15, 2018. [webinar]
- 2018 “Alternative Medicine in the Pediatric Patient: Focus on Herbals,” Global Medical Affairs Wellness, Pfizer, Inc., July 11, 2018 [webinar]
- 2018 “Pediatric Nutrition,” PPAG University 2018, Philadelphia, PA, September 14, 2018.
- 2018 “Drug Shortages: Focus on Parenteral Nutrition,” Oley Foundation, October 16, 2018, [webinar]
- 2018 “Neonatal PN: Safety and Stability Considerations,” US Numeta Advisory Board, Chicago, IL, November 9, 2018.
- 2019 “Facts About Fats: SMOF, Omegaven, Intralipid: Which One For PNALD, BPD, ROP,” Pediatric Pharmacy Advocacy Group (PPAG), January 23, 2019, [webinar]
- 2019 “Alternative Lipid Emulsions in Children,” American Society for Parenteral and Enteral Nutrition, ASPEN2019 Nutrition Science and Practice Conference, Phoenix, AZ, March 26, 2019.
- 2019 “Identifying and Managing Intestinal Failure-Related Liver Disease,” 2019 Oley/UI Health Combined Conference, June 23, 2019, Lincolnshire, IL.
- 2019 “Minimizing Errors in Pediatric Patients Receiving Home Parenteral Nutrition at Transitions of Care,” ASHP Midyear Clinical Meeting, December 9, 2019, Las Vegas, NV.

- 2020 “Nutrient Deficiencies in the Neonate Transitioning from Parenteral to Enteral Nutrition,” ASPEN 2020 Nutrition Science and Practice Conference, March 31, 2020 [virtual]
- 2020 “The Ifs, Ands and Buts of Vitamin Supplementation in the NICU,” Pediatric Pharmacy Association Annual Meeting, May 2, 2020 [virtual]
- 2020 “ASPEN Best Practices in Parenteral Nutrition Training Series: Compounding Parenteral Nutrition Admixtures,” June 4, 2020 [webinar]
- 2020 “Intravenous Fish Oil Monotherapy as a Source of Calories and Fatty Acids Promotes Age-Appropriate Growth in Pediatric Patients with Intestinal Failure-Associated Liver Disease,” Oley 2020 Virtual Conference, August 6, 2020 [virtual]
- 2020 “The Power of Networking and Lessons Learned from Omegaven,” Helms Lecture, PPA Fall Meeting, September 24, 2020. [virtual]

International

- 1997 “Quality Assurance of Total Parenteral Nutrition Solutions,” presented to pharmacy staff, Royal Hospital for Sick Children, Edinburgh, Scotland.
- 1997 “Automated Compounding of TPN,” Alder Hey Children’s Hospital, Liverpool, England.
- 1997 “Automated compounding of TPN,” Great Ormand Street Children’s Hospital, London, England.
- 2000 “Automated Compounding of Parenteral Nutrition Solutions,” presented to the pharmacy staff, Taiwan University Hospital, Taipei, Taiwan, R.O.C.
- 2000 “Update on the National Advisory Group Recommendations and ASHP Guidelines Regarding Parenteral Nutrition,” 20th Annual meeting of the Korean Society of Health-System Pharmacists, Muju, South Korea.
- 2004 “Co-Administration of Medications with PN Solutions in the Paediatric Patient,” Parenteral and Enteral Nutrition Society of Malaysia, Penang, Malaysia.
- 2004 “The Boston Children’s Hospital Experience in Paediatric Nutrition,” Parenteral and Enteral Nutrition Society of Malaysia, Penang, Malaysia.
- 2004 “Automation in TPN Compounding,” Parenteral and Enteral Nutrition Society of Malaysia, Penang, Malaysia.
- 2004 “Pharmaceutical Issues in Compounding,” Parenteral and Enteral Nutrition Society of Malaysia, Penang, Malaysia.

- 2004 “Pediatric Medications: What is the Problem? Current Challenges in Pediatric Pharmacy Practice,” Federation Internationale Pharmaceutique (International Pharmaceutical Federation), 2004 Congress, New Orleans, LA.
- 2005 “Avoiding Aluminum Contamination,” An IPANEMA Satellite Symposium for ESPIG-BPNG, 27th Congress of European Society for Clinical Nutrition and Metabolism, Brussels, Belgium.
- 2007 “Prevention and Treatment of Parenteral Nutrition Associated Liver Disease”, FRANC International Pediatric Nutrition Symposium, Bad Homburg, Germany (Fresenius-Kabi Sponsor).
- 2011 “The Essentiality of AA and DHA,” III Simposio Internacional de Nutricion Neonatal, Cartagena de Indias, Colombia.
- 2011 “Fish Oil-Based Lipid Emulsions Prevent & Reverse Parenteral Nutrition-Associated Liver Disease: The Boston Experience,” III Simposio Internacional de Nutricion Neonatal, Cartagena de Indias, Colombia.
- 2011 “Vitamins and Trace Elements,” “Overview of Parenteral and Enteral Nutrition,” “Compounding Parenteral Nutrition Solutions,” “Complications of Specialized Nutrition Support,” “Selection of IV Fluids,” “Vascular Access Devices,” “Review of Calculations for Parenteral Nutrition,” presented to the Medical/Surgical Staff in conjunction with the Clinical Nutrition Center, Bach Mai Hospital, Hanoi, Viet Nam.
- 2011 “Liver Disease: Lessons Learned from Omegaven From the Bedside to the Bench: The Role of Inflammation in Pediatric Intestinal Failure Associated Studies,” International Expert Meeting on Inflammation, Orlando, Florida.
- 2012 “Pharmacy Practice in the United States,” presented to the Department of Pharmacy, Bach Mai Hospital, Hanoi, Viet Nam.
- 2012 “Nutrition Support Formulary Review Process,” presented to the Medical/Surgical Staff in conjunction with the Clinical Nutrition Center, Bach Mai Hospital, Hanoi, Viet Nam.
- 2012 “Complications of Parenteral Nutrition,” presented to the Medical/Surgical Staff, Nhi Dong Children’s Hospital, Ho Chi Minh City, Viet Nam.
- 2012 “Complications of Parenteral Nutrition,” presented to the Medical/Surgical Staff, Bach Mai Hospital, Hanoi, Viet Nam.
- 2015 “Parenteral and Enteral Nutrition,” and “Vitamins and Trace Elements,” Nhi Dong 1, Children’s Hospital Number 1, Ho Chi Minh City, Viet Nam.
- 2015 “Special Topics in Surgical Nutrition,” Departments of Nutrition and Surgery, Hanoi Medical University, Ha Noi, Viet Nam.

- 2015 “Understanding Lipid Emulsions: Focus on SMOFlipid,” Neonatology Group of Wuhan, China, Wuhan, China.
- 2015 “Parenteral Nutrition Associated Liver Disease (PNALD): What are the prevention and treatment options? “The Third International Symposium on Paediatric Digestion and Nutrition,” Shanghai, China.
- 2016 “Compounding Considerations of Neonatal Parenteral Nutrition,” “Lipid Management Strategies in IFALD: Dose Minimization vs. Type of Oil,” and “Nutritional Considerations in Short Bowel Syndrome,” Primera Jornada Epic Latino. Cruzando Fronteras en Nutrición Neonatal, Quito, Ecuador.
- 2016 “Update on Pediatric GI Pharmacology,” American Pediatric Gastroenterology and Nutrition Nurses (APGNN) Annual Meeting as part of the World Congress of Pediatric Gastroenterology, Hepatology and Nutrition, Montreal, Canada.
- 2016 “History of Lipid Emulsions in the United States,” 9th International Pediatric Intestinal Failure and Rehabilitation Symposium, Los Angeles CA.
- 2017 “Let’s Getting Moving (or Not),” 4th Annual TPN Conference, Concord Specialty Pharmacy, Toronto, Canada.
- 2018 “Principles of Healthy Nutrition,” Nutritional Assessment,” “Enteral Nutrition,” “Parenteral Nutrition,” “Nutrition in Metabolic Disorder and Chronic Diseases,” “Nutritional Support in Preoperative and Post-Surgical Patients,” “Nutrition in Oncology,” “Critical Care Nutrition,” “ Pediatric Nutrition,” and “World Trends in Clinical Nutrition & Clinical Nutrition Model in Boston Hospital,” presented as part of a training course on clinical nutrition for health care providers at Vinmec International Hospital and affiliates, Ha Noi, Vietnam, January 15-17, 2018.
- 2018 “Pharmacologic Therapies in the Treatment of Intestinal Failure Associated Complications” and “Transition of the Intestinal Failure Patient from Hospital to Home,” Multidisciplinary Management on Intestinal Rehabilitation, Hong Kong Children’s Hospital, Commissioned Training 2018, Queen Elizabeth Hospital, Hong Kong.
- 2018 “Fish oil based parental nutrition for children with intestinal failure,” The Hong Kong Society of Paediatric Surgery, Hong Kong, February 7, 2018.
- 2018 “Fish oil in parenteral nutrition associated liver disease (PNALD),” 19th Congress of the Parenteral and Enteral Nutrition Society of ASIA (PENSA), Seoul, Korea, June 14, 2018.
- 2018 “Pharmacologic management of intestinal failure associate complications,” 19th Congress of the Parenteral and Enteral Nutrition Society of ASIA (PENSA), Seoul, Korea, June 15, 2018.

2019 “Managing motility,” 6th Annual Concord Specialty Pharmacy TPN Conference, Concord, ON, October 5, 2019.

Report of Clinical Activities and Innovations

Current Licensure and Certification

1982 Registered Pharmacist, Massachusetts Board of Pharmacy
1983 Registered Pharmacist, District of Columbia, Board of Pharmacy
1993 Board Certified Nutrition Support Pharmacist
2000 Basic Life Support Certified (Healthcare Provider)
2001 Pediatric Advanced Life Support, Provider Certification
2003 Smallpox Vaccination Team Training, Boston Public Health Commission
2003 Pharmacy-Based Immunization Delivery Certificate Program for Pharmacists (Northeastern University)
2005 CITI Course in the Protection of Human Subjects
2015 IS-00100.hcb Introduction to the Incident Command System (ICS 100) for Healthcare/Hospitals
2015 IS-00700.a National Incident Management System (NIMS) An Introduction □
2016 CITI Good Clinical Practice Course
2020 BCH Clinical Research Operations Certification Exam

Practice Activities

1982- 1984	Pharmacy	Distributive Pharmacy Practice Children’s National Medical Center, Washington, DC
1984- present	Pharmacy	Clinical Pharmacy (Nutrition) Boston Children’s Hospital

Clinical Innovations

My academic time is spent in the laboratory and clinical research. My primary focus in the laboratory is the study of parenteral nutrition and its toxic effects on the liver. This liver disease was responsible for 1.4% of all deaths of children age 4 and under. Our laboratory work has demonstrated injury results, in part, from the intravenous lipid solution that is given to our patients. We have discovered two approaches for prevention of the liver injury. One, the replacement of the lipid emulsion with a second less toxic emulsion, has been made available for compassionate use by the FDA to over 200 patients at Boston Children’s Hospital. Following implementation of this therapy, the previous 38% mortality rate for this disease drastically decreased from 2 – 6 deaths and transplants per year to only 1 transplant over the past 7 years. It is now being used in over 100 institutions in the United States and now worldwide. Previously, the primary treatment for this disease was liver small bowel or multivisceral transplants. At its peak in 2006, there were 15 small bowel liver transplants performed in the U.S. (children under 1

year of age) and 0 were performed in 2010. This therapy is now used around the world for this entity, which previously was often fatal without transplantation.

Report of Technological and Other Scientific Innovations

Treatment and Prevention of Fatty Liver Disease Associated with Total Parenteral Nutrition (TPN) 2004 Nov 5 Application number 20080275119
 Awarded: 2011 Australia Awarded:2013 Canada
 Awarded:2017 United States

Report of Education of Patients and Service to the Community

Activities

2006-Present Oley Foundation
 Participate in annual consumer conference for patients requiring specialized nutritional support; serve as a resource for pharmaceutical issues. Appointed to their advisory board in 2017.

Educational Material for Patients and the Lay Community

Books, monographs, articles and presentations in other media

Educational material or curricula developed for non-professional students

2006	Tools for living better on home IV & tube feedings: HPN-Associated Liver Disease in Infants	Co-author (Puder M, Lee S)	Oley Foundation Lifeline Newsletter
2014	Swimming with Lines and Tubes: It's a Team Effort	Gura KM	Oley Foundation Lifeline Newsletter
2018	Omegaven Receives FDA Approval	Gura KM, Puder M	Oley Foundation Lifeline Newsletter

Patient educational material

Recognition

2004-12	Who's Who in Medicine and Healthcare	
2006-12	Who's Who in Science and Engineering	
2007	2007 Best of the New Award: "Nutrition Solution"	The Boston Globe
2009-	Who's Who in America	

2017,2020
2009- Who's Who in the World
2010,2020
2010-2011 Who's Who of American Women
2017-2019 Who's Who in the World
2018 Albert Nelson Marquis Lifetime
Achievement Award/Marquis Who's
Who

Report of Scholarship

Publications

Peer reviewed publications in print or other media

Research Investigations

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3. Nehra D, Carlson S, Fallon EM, **Gura KM**; Board of Directors American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.), Puder M. A.S.P.E.N. Clinical guidelines: Nutrition support of neonatal patients with metabolic bone disease. *JPEN J Parenter Enteral Nutri.* 2013 May 17. [Epub ahead of print] PMID:23685349 (Standard of Care)

4. Standardized Competencies for Parenteral Nutrition Administration: The ASPEN Model. Guenter P, Worthington P, Ayers P, Boullata JI, **Gura KM**, Marshall N, Holcombe B, Richardson DS; Parenteral Nutrition Safety Committee, American Society for Parenteral and Enteral Nutrition. *Nutr Clin Pract.* 2018 Mar 23. doi: 10.1002/ncp.10055. [Epub ahead of print]

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

1. Duggan C, Rizzo C, Cooper A, Klavon S, Fuchs V, **Gura K**, Richardson D, Collier S, Lo C. “Use of Clinical Practice Guidelines (CPGs) for Parenteral Nutrition in a Pediatric Teaching Hospital,” American Society for Parenteral and Enteral Nutrition’s 1996 Clinical Congress, Washington, DC. [*Poster Presentation, selected as one of top-rated Nutrition Practice Posters by the A.S.P.E.N. Education and Professional Development Committee*]
2. Forchielli ML, Lo CW, Richardson D, **Gura K**, Walker WA, Tonelli E. “Successful Treatment of Central Venous Line Infections,” American Society for Parenteral and Enteral Nutrition's 1997 Clinical Congress, San Francisco, CA [*Poster Presentation, selected as one of the top-rated abstracts at the Clinical Congress by the A.S.P.E.N. Education and Professional Development Committee*]
3. **Gura KM**, Richardson DS. “Guidelines for the Co-administration of Medications with Parenteral Nutrient Solutions in the Pediatric Patient,” 22nd Clinical Congress of the American Society for Parenteral and Enteral Nutrition, Orlando, FL, February 1998. [*Poster Presentation, selected one of the top-rated Nutrition Practice Posters by the A.S.P.E.N. Education and Professional Development Committee*]
4. **Gura KM**, Lee S, Duggan CP, Collier SB, Jennings RW, Folkman J, Bistran BR, Puder M “Reversal of Parenteral Nutrition Associated Cholestasis in Two Infants Using Parenteral Fish Oil,” 31st Annual Meeting, Massachusetts Society of Health Systems Pharmacists, Newton, MA, April 3, 2006.[*Poster Presentation, 1st place*]
5. Le H , de Meijer V, Robinson E, Arsenault D, Potemkin A, Zurakowski D, Fallon E, Malkan A, **Gura KM**, Mark Puder. “Parenteral Fish Oil-Based Lipid Emulsion Improved Lipid and Fatty Acid Profiles in Parenteral Nutrition-Dependent Patients,” American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Clinical Nutrition Week, February 9, 2010, Las Vegas, NV [*Oral Presentation, winner Oley Foundation Research Award, June 2010*]
6. Murphy MM, Duggan C, Collier S, Lo C, Richardson S, Brenn M, **Gura KM**. “Evaluation of a Method to Minimize Aluminum Exposure from Parenteral Nutrition at a Pediatric Teaching Hospital, American Society for Parenteral and Enteral Nutrition – Clinical Nutrition Week, 2011, Vancouver, BC, Canada, [*Poster Presentation, Abstract of Distinction*]
7. **Gura KM**, Díaz JJ, Roda J, Perez-Atayde AR, Duggan C, Jaksic T, Lo CW., “AST to Platelet Index is Predictive of Cirrhosis but Not of Fibrosis in Pediatric Patients with Intestinal Failure,” 33th European Society for Parenteral and Parenteral Nutrition Congress on Clinical Nutrition & Metabolism, Gothenburg, Sweden. [*Poster Presentation, named one of the outstanding posters of 2011*]
8. Bechard LJ, Feldman HA, **Gura K**, Venick R, Guinan EC, Gordon C, Duggan C, “Bone loss during hematopoietic cell transplantation in children” 2013 Experimental

Biology/American Society for Nutrition, Boston, MA. *[Poster Presentation]*

9. Gosselin K, Bechard LJ, Feldman HA, Kellogg M, **Gura K**, Sonis A, Venick R, Gordon CM, Guinan EC, Duggan C. “Changes in serum citrulline during hematopoietic cell transplantation in children. 2013 Experimental Biology/American Society for Nutrition, Boston, MA. *[Poster Presentation]*
10. Nandivada P, Chang M, Potemkin A, O’loughlin A, Carlson SJ, Cowan E, Mitchell P, **Gura KM**, Puder M. Clinical outcomes for patients with cirrhosis due to parenteral nutrition-associated liver disease and resolution of cholestasis with fish-oil lipid emulsion. 9th Annual Symposium in Cellular, Molecular and Clinical Research in Surgery. Boston Children’s Hospital, Boston MA, March 2013. *[Poster Presentation]*
11. Nandivada P, Chang MI, Potemkin AK, Mitchell PD, O’loughlin A, Carlson SJ, Cowan E, **Gura KM**, Puder M. Cirrhosis from Parenteral Nutrition-Associated Liver Disease: No Longer an Indication for Transplantation. Folkman Research Day. Boston Children’s Hospital and Harvard Medical School, Boston MA. May 2013. *[Oral Presentation]*
12. Nandivada P, Chang M, Potemkin A, O’loughlin A, Carlson SJ, Cowan E, Mitchell P, **Gura KM**, Puder M. Clinical outcomes for patients with cirrhosis due to parenteral nutrition-associated liver disease and resolution of cholestasis with fish-oil lipid emulsion. Beth Israel Deaconess Hospital Resident Research Competition, Boston MA, June 2013. *[Poster Presentation]*
13. Nandivada P, Chang M, Potemkin A, O’Loughlin A, Carlson S, Cowan E, Mitchell P, MD, **Gura KM**, Puder M. Cirrhosis from Parenteral Nutrition: No Longer an Indication for Transplantation? Massachusetts Chapter of the American College of Surgeons, Boston MA, Dec. 2013. *[Poster Presentation]*
14. Nandivada P, Chang MI, Potemkin AK, Carlson SJ, Cowan E M.D. 1, Alison A. O’loughlin AA **Gura KM**, Puder M. The natural history of cirrhosis from parenteral nutrition-associated liver disease after resolution of cholestasis with parenteral fish oil therapy. US Conference on Rare Diseases and Orphan Products, Bethesda MD, Oct 2013. *[Poster Presentation]*
15. Dalton MK, Tellier B. **Gura KM**, Murphy M, Collier S, Duggan C, Raphael B, “Impact of IV phosphate shortage in home TPN patients,” 2013 APGNN/ NASPGHAN Annual Meeting, Chicago, IL October 11th - 12th, 2013. *[Poster Presentation]*
16. Murphy M, **Gura KM**, Dalton MK, Wall CB, Tellier B, Collier S, Duggan C, Lightdale JR., Raphael BP “Clinical Pharmacist Reconciliation of Prescribed and Commercially Compounded Home Parenteral Nutrition Solutions in a National Cohort,” 2013 APGNN/ NASPGHAN Annual Meeting, Chicago, IL October 11-12th, 2013. *[Poster Presentation]*
17. Dalton MK, Wall CB, Tellier B, Collier S, **Gura KM**, Duggan C, Raphael B, “Pediatric Home

- Parenteral Nutrition Patients with Intravenous Lipid Restriction at Risk for Glucosuria,”. 2013 APGNN/ NASPGHAN Annual Meeting, Chicago, IL October 11th - 12th, 2013. [*Poster Presentation*]
18. Nandivada P, Chang M, Potemkin AK, Carlson SJ, Cowan E, O’Loughlin AA, Mitchell PD, **Gura KM**, Puder M “Cirrhosis from parenteral nutrition-associated liver disease: No longer an indication for transplantation,” George HA Clowes Research Symposium. Beth Israel Deaconess Medical Center, Boston MA. November 2013. [*Oral Presentation*]
 19. Nandivada P, Chang M, Potemkin AK, Carlson SJ, Cowan E, O’Loughlin AA, Mitchell PD, **Gura KM**, Puder M. The natural history of cirrhosis from parenteral nutrition-associated liver disease after resolution of cholestasis with parenteral fish oil therapy. Massachusetts Chapter of American College of Surgeons Research Day Boston MA, Dec 7, 2013. [*Poster Presentation*]
 20. Chang MI, Carlson SJ, Cowan E, Nandivada P, Potemkin AK, O’Loughlin A, **Gura KM**, Puder M. Moving Toward Decreasing the Length of Hospital Stay in Admissions for Suspected Central Line-Associated Blood Stream Infections in the Pediatric Intestinal Failure Population. Academic Surgical Congress, San Diego CA, Feb 2014. [*Podium Presentation*]
 21. Nandivada P, Potemkin AK, Carlson SJ, Chang MI, Cowan E, **Gura KM**, Puder M. Elevated alkaline phosphatase in infants with parenteral nutrition-associated liver disease reflects bone rather than liver disease. Annual meeting of the American Society for Parenteral and Enteral Nutrition, Savannah, GA. January 2014. [*Poster Presentation*]
 22. Karwowski M, Bellinger D, **Gura K**, Quinn N, Alan Woolf A, “Does Aluminum Exposure Affect Neurodevelopment? Findings from DIALS: Development in Infants and Aluminum Levels Study,” Pediatric Academic Societies (PAS) Annual Meeting, Vancouver, Canada, May 2014. [*Poster Presentation*]
 23. Nandivada P, **Gura KM**, Puder M. Decreased Mortality from Parenteral Nutrition-Associated Liver Disease in Pair-Matched Infants Treated with Parenteral Fish Oil. American Pediatric Surgical Association. Phoenix AZ. May 2014. [*Oral Presentation*]
 24. Nandivada P, Chang M, Potemkin AK, Carlson SJ, Cowan E, O’loughlin AA, Mitchell PD, **Gura KM**, Puder M. The natural history of cirrhosis from parenteral nutrition-associated liver disease after resolution of cholestasis with parenteral fish oil therapy. Hepatobiliary Research Day, Beth Israel Deaconess Medical Center, Boston MA, March 18, 2014. [*Oral Presentation*]
 25. Nandivada P, Chang M, Potemkin AK, Carlson SJ, Cowan E, O’loughlin AA, Mitchell PD, **Gura KM**, Puder M. Fish oil for parenteral nutrition-associated liver disease: reducing mortality and transplantation. Surgical Research Council 10th Annual Symposium, Boston Children’s Hospital, Boston, MA, March 25, 2014. [*Oral Presentation*]

26. Young LS, Huong PTT, Lam NT, Thu NN, Van HT, Lien DTK, Hoc TH, Anh NQ, Henry EG, Lenders CM, **Gura KM**, Apovian CM, Ziegler TR. “Analysis of hospital feeding practices at Bach Mai Hospital, Hanoi Viet Nam,” 2014 Experimental Biology/American Society for Nutrition, San Diego, CA. [*Poster Presentation*]

27. Lenders C., Henry E., Anh N.Q., Apovian C., Chanh H.C., Chuc N.T.K., Collier S., Durschlag R., **Gura K.**, Huong P.T.T., Huong L.T., Larsen L., Lam N.T., Lien D.T.K., Ly L.N., Markuns J., Miller J.E., Mogensen K.M., Montegut A., Oliver L., Thu N.N., Thu V., Trang N.N.M., Young L., Ziegler T. A global partnership to improve nutrition medicine in Viet Nam. Annals of Nutrition and Metabolism. Conference: 20th International Congress of Nutrition Granada Spain. [*Oral Presentation*]

28. Chang MI, Carlson SJ, Nandivada P, O’Loughlin AA, Cowan E, Potemkin AK, **Gura KM**, Puder M. Challenging the 48-hour rule out for CLABSI in the pediatric intestinal failure population. 10th Annual Symposium in Cellular, Molecular and Clinical Research in Surgery. Boston Children's Hospital, Boston MA, March 2014. [*Oral Presentation*]

29. Nandivada P, Potemkin AK, Carlson SJ, Chang MI, Cowan E, **Gura K**, Puder M. Elevated alkaline phosphatase in infants with parenteral nutrition-associated liver disease reflects bone rather than liver disease. Third Annual Harvard Research Day on Saturday, May 10, 2014. [*Poster Presentation*]

30. Chang MI, Carlson SJ, Nandivada P, O’Loughlin AA, Cowan E, Potemkin AK, Mitchell PD, **Gura KM**, Puder M. Challenging the 48-hour Rule out for CLABSI in the Pediatric Intestinal Failure Population. Presented at the New England Surgical Society, 2014. [*Poster Presentation*]

31. Philipszoon L, Puder M, **Gura KM** “Intravenous Fish Oil Does Not Appear to Increase the Risk of Burr Cell anemia,” 2014 Congress of the International Society for the Study of Fatty Acids and Lipids (ISSFAL), Stockholm, Sweden. [*Poster Presentation*]

32. Pharm THT, Nguyen LT, Nghiem TN, Le TD, Nguen HH, Nguyen HT, Dinh LTK, Nguyen QA, Henry EG, Oliver L, Collier S, **Gura K**, Apovian C, Ziegler T, Lenders C. “Risk of Malnutrition During a Nutrition Intervention Project in Hospitalized Patients, Vietnam,” European Society for Parenteral and Enteral Nutrition (ESPEN), Geneva, Switzerland, 2014. [*Poster Presentation*]

33. Nandivada P, Carlson SJ, Chang MI, O’Loughlin AA, **Gura KM**, Puder M. Predictors of failure of fish oil therapy for parenteral nutrition-associated liver disease. Academic Surgical Congress National Meeting. February 3, 2015. [*Podium Presentation*]

34. Nandivada P, Fell G, Mitchell P, Potemkin AK, Nanavati R, Mitiku S, O’Loughlin A, **Gura KM**, Puder M. Long Term Fish Oil Lipid Emulsion Exposure in Children with Intestinal Failure Associated Liver Disease: Impact on Mortality, Transplantation, and Essential Fatty

Acid Deficiency. American Society for Parenteral and Enteral Nutrition National Meeting. February 15, 2015. [*Podium Presentation*]

35. Fell G, Nandivada P, O'Loughlin AA, Potemkin AK, **Gura K**, Puder M. Managing rapid infusions of a fish oil lipid emulsion in parenteral nutrition: an experience-based protocol. The American Society of Parenteral and Enteral Nutrition National Meeting; 2015 Feb 15; Long Beach, CA. [*Poster Presentation*]
36. Woolf A, Wenren L, Stamoulis C, Faboyede G, Karwowski M, **Gura K**, Quinn N. "Are Blood and Hair Aluminum Levels Associated with Vaccine Aluminum Loads in Healthy Infants?" 2015 annual meeting of the North American Congress of Clinical Toxicology, San Francisco, California [*Platform Presentation*]
37. **Gura, KM**; Mulberg, AE; Mitchell, P; Yap, J; Kim, C; Potemkin, A; Puder, M. "Assessing the Utility of Adult Drug Induced Liver Injury Criteria in the Pediatric Patient: A Pilot Analysis," 46th Annual Digestive Disease Week (DDW), Washington, DC. [*Poster Presentation*]
38. Cho BS, **Gura KM**, Potemkin AK, O'Loughlin AA, Nandivada P, Anez-Bustillos L, Baker MA, Dao DT, Puder M, Fell GL. Processes for ruling out central line-associated bloodstream infections in parenteral nutrition-dependent pediatric patients. The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. [*Podium Presentation, Abstract of Distinction*]
39. Baker MA, Nandivada P, Mitchell PD, O'Loughlin AA, Potemkin AK, **Gura KM**, Fell GL, Anez-Bustillos L, Dao DT, Cho B, and Puder M. Failures of fish oil therapy for treatment of parenteral nutrition-associated liver disease. The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. [*Podium Presentation, Abstract of Distinction*]
40. Dao DT, Mitchell P, **Gura KM**, Potemkin AK, Baker MA, Fell GL, Anez-Bustillos L, Cho BS, O'Loughlin AA, Puder M. Serum linoleic acid as a marker of intestinal fat absorption: a case report. The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. [*Poster Presentation*]
41. Fell GL, Cho BS, Pan A, Nose V, Anez-Bustillos L, Baker MA, Dao D, Nandivada P, **Gura KM**, Puder M. A comparison of fish oil sources for parenteral lipid emulsions in a murine model. The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. [*Podium Presentation, Vars paper finalist*]
42. Anez-Bustillos L, Nandivada P, O'Loughlin AA, Baker MA, Dao DT, Fell GL, Cho BS, Potemkin AK, Mitchell P, **Gura KM**, Puder M. Risk of Post-Procedural Bleeding in Patients on Intravenous Fish Oil. Is it real? The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. [*Poster Presentation, Abstract of Distinction*]
43. Murphy MK, **Gura KM**, Grullon G, Raphael B. Medication Reconciliation of Compounded

Home Parenteral Nutrition Solutions – A Quality Improvement Initiative at a Pediatric Teaching Hospital. The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. *[Poster Presentation]*

44. Martinez EE, Stenquist N, Pereira LM, Kellogg MD, **Gura KM**, Nurko S, Mehta NM. Gastric Residual Volume Does Not Predict Delayed Gastric Emptying in Critically Ill Children. The American Society of Parenteral and Enteral Nutrition. Austin, TX. January 2016. *[Poster Presentation]*
45. Baker MA, Nandivada P, Mitchell PD, O’Loughlin AA, Potemkin AK, Anez-Bustillos L, Dao DT, Fell GL, **Gura KM**, Puder M. Predictors of Omegaven failure in the treatment of parenteral nutrition-associated liver disease. Clowes Research Symposium. Beth Israel Deaconess Medical Center, Boston MA. April 2016 *[Oral Presentation, 1st place clinical research]*
46. Huong PTT, Lam NT, Thu NN, Plourde KD, **Gura KM**, Ziegler TR, Lenders CM, Henry EG, Apovian CM, Anh NQ, Hoc TH, Lien DTK, Young LS. Quasi-experimental feeding study in patients admitted for elective gastrointestinal surgery at Bach Mai Hospital (BMH) Hanoi, Viet Nam, Experimental Biology, American Society for Nutrition, April 3, 2016. *[Poster Presentation]*
47. Fell GL, Nandivada P, Anez-Bustillos L, Baker MA, Dao D, Pan A, **Gura KM**, Puder M. The Role of Free Fatty Acid Receptor GPR120 in a Model of Parenteral Nutrition Liver Injury. The American Pediatric Surgical Association. San Diego, CA. May 16, 2016. *[Podium Presentation]*
48. Baker MA, Nandivada P, Mitchell PD, O’Loughlin AA, Potemkin AK, Anez-Bustillos L, Dao DT, Fell GL, **Gura KM**, Puder M. Predictors of Omegaven® failure in the treatment of parenteral nutrition-associated liver disease. Folkman Research Day, Boston Children’s Hospital, Boston, MA, May 4, 2016. *[Poster Presentation]*
49. Baker MA, Nandivada P, Mitchell PD, O’Loughlin AA, Potemkin AK, Anez-Bustillos L, Dao DT, Fell GL, **Gura KM**, Puder M. Predictors of Omegaven® failure in the treatment of parenteral nutrition-associated liver disease. Harvard Research Day, Harvard Medical School, Boston, MA, May 7, 2016. *[Poster Presentation]*
50. Fell, GL, Nandivada P, Cho BS, Anez-Bustillos L, Baker MA, Dao DT, Pan A, **Gura KM**, Puder M. Free Fatty Acid Receptor GPR120 is Necessary for Fish Oil-Mediated Hepatic Protection in a Model of Parenteral Nutrition Liver Injury. Harvard Research Day, Harvard Medical School, Boston, MA, May 7, 2016. *[Poster Presentation]*
51. Baker MA, Nandivada P, Mitchell PD, O’Loughlin AA, Potemkin AK, Anez-Bustillos L, Dao DT, Fell GL, **Gura KM**, Puder M. Predictors of Omegaven® failure in the treatment of parenteral nutrition-associated liver disease. New England Surgical Society 23rd Annual Surgical Resident Research Day, May 13, 2016. *[Podium Presentation]*

52. Anez-Bustillos L, Nandivada P, O’Loughlin A, Baker MA, Dao DT, Fell GL, Cho BS, Potemkin A, Mitchell P, **Gura KM**, Puder M. Risk of Post-Procedural Bleeding in Patients on Intravenous Fish Oil. Fact or Fiction? Folkman Research Day. Boston Children’s Hospital, Boston MA. May 2016[*Poster Presentation*].
53. Anez-Bustillos L, Nandivada P, O’Loughlin A, Baker MA, Dao DT, Fell GL, Cho BS, Potemkin A, Mitchell P, **Gura KM**, Puder M. Risk of Post-Procedural Bleeding in Patients on Intravenous Fish Oil. Fact or Fiction? 5th Annual Harvard Surgery Research Day. Harvard Medical School, Boston MA. May 2016. [*Poster Presentation*]
54. Fell, GL, Nandivada P, Cho BS, Anez-Bustillos L, Baker MA, Dao DT, Pan A, **Gura KM**, Puder M. Free Fatty Acid Receptor GPR120 is Necessary for Hepatic Protection in a Model of Parenteral Nutrition Liver Injury. Folkman Research Day, Boston Children’s Hospital, Boston, MA, May 4, 2016. [*Podium Presentation*]
55. Baker MA, Nandivada P, Pan A, Fell GL, Anez-Bustillos L, Dao DT, **Gura KM**, V. Nosé V, Puder M. Histologic Changes Following Fish Oil Pretreatment and Hepatic Ischemia Reperfusion Injury. 12th Annual Academic Surgical Congress, Las Vegas, NV, February 8, 2017. [*Podium Presentation*]
56. Baker MA, Mitchell PD, O’Loughlin AA, Potemkin AK, Anez-Bustillos L, Dao DT, Fell GL, **Gura KM**, Puder M. Characterization of Fatty Acid Profiles in Children with Intestinal Failure-Associated Liver Disease. The American Society of Parenteral and Enteral Nutrition. Clinical Nutrition Week, Orlando, FL. February 20, 2017. [*Poster Presentation*] [*Poster of Distinction*]
57. Fernandes H, Kiritsy P, **Gura K**. Compatibility of Magnesium with Calcium & Phosphate in Parenteral Nutrient Solutions Containing TrophAmine. ASHP Midyear Clinical Meeting Orlando, FL Dec 4, 2017[*Poster Presentation*]
58. Dao DT, Anez-Bustillos L, Cho BS, Potemkin AK, Perez-Atayde AR, Raphael B, Carey AN, Kamin K, Thiagarajah J, **Gura KM**, Puder M. Intravenous Fish-Oil Lipid Emulsion for Intractable Pruritus: A Case Report, ASPEN 2018 Nutrition Science and Practice Conference, Las Vegas, NV, January 23, 2018[*Podium Presentation*]
59. Anez-Bustillos L, Cubria Amin Mohamadi A, Dao DT, Amy Pan A, Baker MA, Fell GL, **Gura KM**, Nazarian A, Puder M. Dietary Effects of Polyunsaturated Fatty Acids on Bone, ASPEN 2018 Nutrition Science and Practice Conference, Las Vegas, NV, January 23, 2018[*Podium Presentation*]
60. Fernandes H, **Gura KM**, Kiritsy P. Compatibility of Magnesium with Calcium & Phosphate in Parenteral Nutrient Solutions containing TrophAmine. ASPEN 2018 Nutrition Science and Practice Conference, Las Vegas, NV, January 23, 2018[*Poster Presentation*]

61. Carey AN, Rudie C, Raphael B, **Gura KM**, Puder M. Essential fatty acid deficiency in infants on parenteral nutrition with restricted doses of composite intravenous lipid emulsion: A case series. ASPEN 2018 Nutrition Science and Practice Conference, Las Vegas, NV, January 23, 2018[*Poster Presentation*]
62. Murphy MK, **Gura KM**, McClelland J, Rosa C, Gallotto M, Gray M, Carey AN, Raphael B. Recurrent Central Venous Catheter Occlusion Attributed to Calcium Phosphorus Precipitate in a Pediatric Home Parenteral Nutrition Solution Identified During a Transition of Care: a Case Report. ASPEN 2018 Nutrition Science and Practice Conference, Las Vegas, NV, January 23, 2018.[*Poster Presentation*]
63. Broyles K , Hoch R, McClelland J, **Gura K**, Carey A. Hypertriglyceridemia secondary to rapid infusion of an intravenous lipid emulsion due to shortage of dual chamber bags in a parenteral nutrition dependent patient. 11th International Pediatric Intestinal Failure and Rehabilitation Symposium, Toronto, Canada, June 26, 2020. [*Poster Presentation*]

Narrative Report

I am a trained pediatric pharmacist with a focus on clinical nutrition. My primary work is the study of parenteral nutrition associated liver disease (PNALD). My interest in omega-3 fatty acids peaked when I discovered that fish oil-based intravenous lipid emulsions could be safely used to treat essential fatty acid deficiency (EFAD). This adolescent had undergone hematopoietic stem cell transplantation and developed life-threatening complications of his EFAD and was made DNR. After obtaining emergency FDA approval, I obtained intravenous fish oil from its European manufacturer, successfully treated his deficiency, and he survived and was later discharged home.

More fundamentally, I lead a team that discovered that intravenous fish oil reversed PNALD in infants receiving parenteral nutrition (PN), one of the most recalcitrant problems of PN use, responsible for 1.4% of all deaths of children < 4 years of age. Our laboratory work demonstrated injury results, in part, from the conventional intravenous lipid emulsion used with PN. We discovered a treatment for PNALD in which that lipid emulsion is replaced with a less toxic one. This therapy was part of an FDA-approved compassionate use trial that offered intravenous fish oil to patients dying of PNALD. Following its implementation, the previous 38% mortality rate for this disease drastically decreased from 2–6 deaths and transplants per year to only 1 transplant over the past 10 years. Based on our findings, intravenous fish oil is now used to treat PNALD globally. Previously, the primary treatment for PNALD was liver/small bowel or multivisceral transplants. At its peak in 2006, there were 15 liver/small bowel transplants performed in the US in children < 1 year of age; 0 were performed in 2010 for this once fatal disease. According to experts at Toronto's Hospital for Sick Children, the use of this lipid emulsion is the reason for a major paradigm shift in the management of children with PNALD (*J Pediatr Gastroenterol Nutr.* 2009 Feb;48(2):209-15). Rather than rushing toward transplant, the emphasis is currently on intestinal rehabilitation as the children now have the time necessary to allow for bowel adaptation. Steven Abrams MD, chair of the Department of Pediatrics at Dell Medical School, has written that this treatment has been responsible for the substantial reduction in the number of liver and multivisceral transplantations in children due to PNALD (*Adv Nutr* vol. 4: 518-520, 2013). In 2009, I was honored by the American Society for Health Systems Pharmacists for my research. In July 2018, the drug received FDA approval.

In my current role, I educate surgical research fellows and medical students on various aspects of PN and lipid emulsion technologies. I also work with them on manuscript preparation and assist in research study design.

In summary, my diverse career path has allowed me to take clinical issues and bring them back to the laboratory to develop new approaches to old problems. I have been fortunate to work in an environment that allows me to simultaneously work on numerous clinical, academic, and research problems that have resulted in new therapies and subsequently share this knowledge through teaching and publication.