

Harvard Medical School/Harvard School of Dental Medicine

Format for the Curriculum Vitae

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Navil F. Sethna

Office Address: Boston Children's Hospital, 300 Longwood Avenue, Boston, MA 02115

Home Address: 205 Briar Lane, Westwood, MA 02090

Work Phone: 617-355-4146

Work E-Mail: Navil.sethna@childrens.harvard.edu

Work FAX: 617-730-0894

Place of Birth: Baghdad, Iraq

Education

Year	Degree	Institution
1970 - 1972	B.S.	University of Baghdad, College of Medicine, Baghdad, Iraq
1973 - 1976	M.B, Ch.B.	University of Baghdad, College of Medicine, Baghdad, Iraq
1978	ECFMG	Educational Commission for Foreign Medical Graduates, USA
1978	TOEFL	Educational Commission for Foreign Medical Graduates, USA

Postdoctoral Training

Year(s)	Title	Specialty/Discipline	Institution
1975 - 1976	Rotating Internship	University of Baghdad Hospital, Affiliated Teaching Hospitals	Baghdad, Iraq
1976 - 1977	Resident Medical Officer	Department of Accident and Emergency	Al-Quassimi Hospital, United Arab Emirates
1978 - 1979	Surgical House Resident	Department of General Surgery	Al-Quassimi Hospital, United Arab Emirates
1979 - 1980	Surgical Resident	Department of General Surgery	Brookdale Hospital Medical Center, State University of NY, Brooklyn, N.Y.
1980 - 1982	Anesthesia Resident	Department of Anesthesia	Brookdale Hospital Medical Center, State University of NY, Brooklyn, N.Y.
1982 - 1983	Clinical Fellow in	Pediatric Anesthesia	The Children's Hospital,

Pediatric Anesthesia

Boston, MA

1993 - 1994	Fellow in Clinical Trials Research & Clinical Associate	Neurobiology and Anesthesiology Branch	National Institute of Dental Research, National Institute of Health (NIH), Bethesda, MD
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Licensure and Certification:

Year	Type of License or Certification
1983	Massachusetts License
1984	Diplomat, American Board of Anesthesiology
1991	Diplomat, American Academy of Pain Management
1993	Qualifications in Pain Management, American Board of Anesthesiology
2002	Re-certification in the subspecialty of Pain Medicine
2006	BLS re-certification
2006	PALS re-certification
2009	Recertification in American Board of Anesthesiology
2006	BLS re-certification
2006	PALS re-certification
2009	BLS re-certification
2009	Anesthesia Resource Crisis Management Course, Cambridge, MA
2009	PALS re-certification
2011	BLS re-certification
2011	PALS re-certification
2012	Anesthesia Resource Crisis Management Course, Cambridge, MA, Dec. 8,2012
2012	Re-certification in the Maintenance of Certification in Anesthesia
2012	Re-certification in the subspecialty of Pain Medicine
2013	BLS re-certification
2013	PALS re-certification
2013	American Board of Anesthesiology, subspecialty certification in Pediatric Anesthesia
2014	Simulator training at Boston Children's Hospital
2013	BLS re-certification
2013	PALS re-certification

Faculty Academic Appointments

Year(s)	Academic Title	Department	Academic Institution
1983 -1991	Instructor in Anaesthesia	Anesthesia	Harvard Medical School, Boston, MA
1991 - 1998	Assistant Professor of Anaesthesia	Anesthesia	Harvard Medical School, Boston, MA
1999 – 2016	Associate Professor of Anaesthesia	Anesthesia	Harvard Medical School, Boston, MA
2016- present	Professor of Anaesthesia	Anesthesia	Harvard Medical School, Boston, MA

Appointments at Hospitals/Affiliated Institutions

Year(s)	Position Title	Department	Institution
1983 - 1987	Assistant	Anesthesia	Children’s Hospital, Boston, MA
1983 - 1992	Consultant	Neonatal Medicine	Brigham & Women’s Hospital, Boston, MA
1986 - 1992	Consultant	Oncology	Dana Farber Cancer Institute, Boston, MA
1987 - 1992	Associate	Anesthesia	Children’s Hospital, Boston, MA
1993 - 1994	Associate Physician	Neurobiology & Anesthesia	Pain Research Clinic, NIDR, NIH, Bethesda, MD
1992 - present	Senior Associate	Anesthesia	Children’s Hospital, Boston, MA
2002 - present	Consultant	Neonatal Medicine	Brigham & Women’s Hospital, Boston, MA
2002 - present	Consultant	Anesthesia	Beth Israel Deaconess Hospital, Boston, MA
2005- present	Consultant	Anesthesia	Dana-Farber Cancer Institute, Boston, MA

Other Professional Positions

Year(s)	Position Title	Institution
2002	Spine Scientific Advisory Board	Novo Nordisk
2003	Spine Scientific Advisory Board	Novo Nordisk
2003	Advisory Scientific Committee	Novo Nordisk
2004	Advisory Scientific Committee	Ferndale Pharmaceuticals
2006	Pediatric Pain Clinical Advisory Committee	Endo Pharmaceuticals
2012	Global Smile Foundation, Medical volunteer	Board of Director, member

Major Administrative Leadership Positions

Local Administrative Leadership Positions

Year(s)	Position Title	Institution
1984 - 1988	A founding member of Anesthesia Liver Transplantation Team with Hector Rodriquez, MD & Babu Koka, MD	Anesthesia Department Children’s Hospital, Boston, MA,
1989 -present	A founding member of Spine Surgery Multidisciplinary Perioperative Team for Patients with Neuromuscular Disorders with Fredrick Shapiro, MD (Orthopedic Surgery), Steven Colan, MD, (Cardiology) & Mary Ellen Wohl, MD (Pulmonary Medicine)	Children’s Hospital, Boston, MA
1986 - 1992	Coordinator of Anesthesia Equipment and Capital Purchases of the operating rooms	Anesthesia Department Children’s Hospital, Boston, MA
1985 -present	A founding member of Pediatric Pain Treatment Service with Charles Berde, MD, PhD (Anesthesia), Bruce J Masek, PhD (Psychology) & Clair F. McCarthy, RPT, MS (Physical Therapy)	Anesthesia Department Children’s Hospital, Boston, MA
1986 -present	Associate Director, Pain Treatment Service	Anesthesia Department Children’s Hospital, Boston, MA
1990 -present	A member of the Pediatric Acute Care Team, an interdisciplinary oncology palliative care team	Children’s Hospital, Boston, MA
1990 - 1991	Associate Clinical Director of the Operating Rooms	Anesthesia Department Children’s Hospital, Boston, MA
1992 - 1993	Clinical Director, Main Operating Rooms	Anesthesia Department Children’s Hospital, Boston, MA
1995 - 2000	Director of Acute Pain Treatment Service	Anesthesia Department Children’s Hospital, Boston, MA
2000 - 2004	Director of Chronic Pain Clinic	Anesthesia Department Children’s Hospital, Boston, MA
2005 -present	A founding member of Ultrasound-guided Pediatric Regional Anesthesia Team with Hyun Kee Chung, MD & Charles Berde, MD, PhD	Anesthesia Department Children’s Hospital, Boston, MA
2006 -present	A founding member of a collaborative organization of outpatient Pediatric Headache	Anesthesia Department

	Clinic along with the division of Neurology,	Children’s Hospital Waltham satellite, Boston, MA
2002 - 2011	A member of the Board of Directors	Anesthesia Foundation Children’s Hospital, Boston, MA
2010- 2011	Interim Director, Mayo Family Pediatric Rehabilitation Center	Children's Hospital Boston, Waltham Campus.
2011- to date	Clinical Director, Mayo Family Pediatric Rehabilitation Center	Children's Hospital Boston, Waltham Campus.

Regional Administrative Leadership Positions

Year(s)	Position Title	Institution
1997	Representative, Legislature’s Pain Management Sub-Committee, Commonwealth of Massachusetts	Representative of Massachusetts chapter American Academy of Pediatrics
2003	Chair Person, Scientific Program	New England Pain Association
2003	President Elect, New England Pain Association	Chapter of American Pain Society
2003 - 2004	President, New England Pain Association	Chapter of American Pain Society
2004 - 2005	Member, Scientific Committee Program, New England Pain Association	Chapter of American Pain Society

National Administrative Leadership Positions

Year(s)	Position Title	Institution
1999 - 2000	Member, Task Force on Policy Statement on Pediatric Chronic Pain	American Pain Society
2004-2005	Member, 2005 Scientific Planning Committee, Pediatric Pain Forum	American Pain Society
2004 - 2006	Moderator of Scientific Planning Committee	American Pain Society, 24th Annual Scientific Meeting, 2005, Boston, MA
2006 - 2007	Member, Scientific Planning Committee	American Pain Society, Pediatric Pain Forum

International Administrative Leadership Positions

Year(s)	Position Title	Institution
2004	Member, International Pediatric Initiative on	International Association for

	Measurement, Methods and Pain Assessment in Clinical Trials in Pediatric Pain (PED-IMPACT)	Study of Pain
2010	An expert of a peer review panel. WHO guidelines for pharmacological treatment of persisting pain in children with medical illnesses.	World Health Organization
2011	A member of a peer review panel. American Pain Society guidelines Project on Management of Postoperative Pain	American Pain Society & American Society of Anesthesiology Report Committee for Postoperative Pain Management
2014	An expert of a peer review panel. American Academy of Pediatrics, Section on Anesthesiology and Pain Medicine, Committee on Fetus and Newborn, statement on Prevention and Management of Pain in the Neonates. 2104	American Academy of Pediatrics.
2014	10th International Symposium on Pediatric Pain 2015	Co-Chair, Scientific Committee
2014	Pediatric Regional Anesthesia Network (PRAN)	Steering Committee Member
2015	External Reviewer for Centre of Pain Management Pain Center 5-Year External Review April 15-16, 2015	Hospital for Sick Children, 555 University Avenue, Toronto, ON M5G 1X8, Canada. Member
2015	11th International Symposium on Pediatric Pain 2017	Member of ISPP scientific committee 2015-2017

Committee Service

Local Committee Service

Year(s)	Name of Committee	Institution/Organization
1986 -1993	Operating Room Governance Committee	Children’s Hospital, Boston, MA
1990 - 1991	Biomedical Engineering Advisory Committee	Children’s Hospital, Boston, MA
1992 - 1996	Latex Allergy Task Force Committee	Children’s Hospital, Boston, MA
1990 - 1993	Residency & Fellowship Selection Committee	Children’s Hospital, Boston, MA
1992 - 1993	Operating Room Anesthesia and Nursing Quality Assurance Committee	Children’s Hospital, Boston, MA

1994 - 1996	Residency Educational Committee	Children's Hospital, Boston, MA
2000 - present	CPG for postoperative urological patients	Children's Hospital, Boston, MA
2002 - present	CPG for postoperative Scoliosis patients	Children's Hospital, Boston, MA
2000 - present	Pharmacy & Therapeutic Committee	Children's Hospital, Boston, MA
2003 - 2007	Clinical Peer Review Subcommittee coordination of care for hospitalized child	Anesthesia Department Children's Hospital, Boston, MA
2005 - 2006	Educational Committee	Anesthesia Department Children's Hospital, Boston, MA

Professional Societies

Year(s)	Society Name
1984 - present	Member, Massachusetts Society of Anesthesiologists
1984 - 1986	Member, American Medical Association
1984 - present	Member, American Society of Anesthesiologists
1984 - present	Member, International Anesthesia Research Society
1985 - present	Member, American Academy of Pediatrics
1987 - present	Member, Society for Pediatric Anesthesia
1988 - present	Member, American Society of Regional Anesthesia
1989 - present	Member, American Pain Society
1989 - present	Member, Massachusetts Pain Society
1992 - present	Member, International Association for Study of Pain

Grant Review Activities

2000	Ad hoc reviewer for Pediatric Pain Research	Medical Research Council, United Kingdom
2004	Ad hoc reviewer for Pediatric Pain Research	Medical Research Council, United Kingdom

Editorial Activities

Year(s)	Role	Journal Name
1987 - present	Ad hoc Reviewer	Analgesia and Anesthesia
1990 - 1991	Ad hoc Reviewer	Survey of Anesthesiology
1993 - present	Ad hoc Reviewer	Journal of Clinical Anesthesia
1994 - present	Ad hoc Reviewer	PAIN, Journal of Internal Association of Study of Pain

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1994 - 1998	Editor, Pediatric Section	Pain Medicine Journal Club Journal
1996	Question writer	Certification in Pain Management, American Board of Anesthesiology
2001 - present	Ad hoc Reviewer	The Clinical Journal of Pain
2001 - present	Ad hoc Reviewer	Journal Pediatric Urology
2002 - present	Ad hoc Reviewer	Journal of Clinical Pain
2002 - present	Ad hoc Reviewer	Anesthesiology
2003 - present	Ad hoc Reviewer	Journal of Pediatric Blood & Cancer
2003 - present	Associate Editor, Pediatric section	Journal of Neuropathic Pain & Symptom Palliation
2005 - present	Ad hoc Reviewer	Journal of Pain
2005 - present	BioMed Central	Journal of Anesthesia & Pain
2006- present	BioMed Central	Journal of Complementary & Alternative Medicine Research
2007 – present	Ad hoc Reviewer	Canadian Medical Association Journal
2008 – present	Ad hoc Reviewer	Journal of Pediatric Anesthesia
2008 – present	Associate Editor, Pediatric Anesthesia	Journal of Maxillofacial & Oral Surgery
2008	Ad hoc Reviewer	Journal of Neurological Science
2009-	Ad hoc Reviewer	Pain Medicine
2009-	Ad hoc Reviewer	Pediatric Anesthesia
2010-	Ad hoc Reviewer	Pediatrics International Official Journal of Japan Pediatric Society
2010-	Ad hoc Reviewer	European Journal of Pain. The Journal of the European Federation of the International Association for the Study of Pain Chapters
2010-	Ad hoc Reviewer	British Journal of Anaesthesia
2010-	Ad hoc Reviewer	Expert Opinion on Pharmacotherapy
2010-	Ad hoc Reviewer	Minerva Anestesiologica
2011-	Ad hoc Reviewer	Journal of Neuro-anesthesia
2011-	Ad hoc Reviewer	Journal of Hospital Practice
2012-	Ad hoc Reviewer	Journal of Neuroscience
2012-	Ad hoc Reviewer	Journal of Pediatrics
2012-	Ad hoc Reviewer	The Journal of Spine
2012-	Member	Pediatric Regional Anesthesia Network Publication Committee

		Pain Management
2013-	Ad hoc Reviewer	Pediatrics
2014-	Ad hoc Reviewer	
2014	Ad hoc Reviewer	Expert Opinion on Drug Safety
2016-	Ad hoc Reviewer	Pain Management Journal

Honors and Prizes

Year	Name of Honor/Prize	Awarding Organization
1980	Resident of the Year Award	Department of Surgery, Brookdale Hospital Medical Center, State University of NY, Brooklyn, NY
1986	Teacher of the Year Award	Anesthesia Department, Children’s Hospital Boston, Boston, MA
1988	Por Cristo Award	Archdioceses of Boston. Medical Volunteer Services to South America
1992	Teacher of the Year Award	Anesthesia Department, Children’s Hospital Boston, Boston, MA
2005	Achievement Award	Children’s Hospital & Regional Medical Center, University of Washington School of Medicine for “Ground-breaking Work in Pain Management & Commitment to the Welfare of Children in Pain”
2008	Teacher of the Year Award	Anesthesia Department, Children’s Hospital Boston, Boston, MA
2011	Humanitarian Award	Benjamin Bloom Children’s Hospital & Shriner’s Group, San Salvador, El Salvador

Report of Funded and Unfunded Projects

Past Funded Projects

Year(s) funded Role on project Funding source (Grant type and number)

1997 - 2001 Co-PI NIH, RO1 HD 35737-02

Title: Rehabilitative Care of Children with Neuropathic Pain

Major goal of this study is to objectively evaluate pediatric patients with chronic regional pain syndromes and disability with the following outcomes: [1] motor functioning [2] sensory abnormalities, including pain thresholds [3] cardiac and peripheral autonomic control, [4] psychosocial functioning, including school attendance/ performance and [5] objectively evaluate responses to sympathetic blockade in those children with persistent disability and pain refractory to rehabilitative approach.

My role was to design, execute, and interpret the data and writing the manuscripts of three out of the five published trials. My role was to design the quantitative sensory testing protocols; establish the normative values in healthy children and adolescent. These normative data were used to characterize the abnormal

sensory testing in children with neuropathic pain. Perform and evaluate the efficacy of sympathetic blockade treatment on the abnormal somatosensory function and pain with the use of quantitative sensory testing in children and adolescents with neuropathic pain

2002 - 2004 PI ZARS, Inc.

Title: A Randomized, Double- Blinded, Placebo Controlled Local Anesthesia for Vascular Access Procedures in Pediatric Patients. Protocol SC-20-01 (Investigational New Drug Application # 58,823)

The major goal of the study is to compare the clinical effectiveness of an S-Caine Patch to a Placebo patch in providing clinically useful local anesthesia for vascular access procedures in pediatric patients. To monitor the nature and frequency of adverse events associated with the S-Caine Patch.

2005 - 2006 PI ZARS, Inc.

Title: A Randomized, Double-blind, Placebo Controlled, Parallel Study Evaluating the Efficacy of S-Caine™ Peel (Lidocaine 7% and Tetracaine 7% Cream) for Induction of Local Dermal Anesthesia before Vascular Access Procedures in Children. Protocol SCP-46-05 (Investigational New Drug Application # 59,801)

The major goal The major goal of the study is to compare the clinical effectiveness of an S-Caine™ Peel (Lidocaine 7% and Tetracaine 7% Cream to a Placebo patch in providing clinically useful local anesthesia for vascular access procedures in pediatric patients. To monitor the nature and frequency of adverse events associated with the S-Caine™ Peel.

2006 – 2010 PI Mayday Fund

Title: The Characterization of Sleep Disruption in Adolescents with Chronic Daily Headache

The goal of this pilot study is to assess sleep-wake patterns of adolescents with chronic daily headache using a valid and reliable measurements by Actigraphy and to compare these findings to a similar number of healthy adolescents without headaches of comparable ages and genders.

Current Funded Projects

<i>Year(s) funded</i>	<i>Role on project</i>	<i>Funding source (Grant type and number)</i>	<i>Cost</i>
Current Funded Projects	Current Funded Projects	Current Funded Projects	Current Funded Projects

2010- 2014 PI Gebauer Company

Title: Efficacy and neurotoxicity of topical anesthetic spray in neonatal rats

The goal of this study is to perform a study on P7 rats to evaluate efficacy and neural toxicity of a commercially available topical anesthetic spray [Pain Ease; 1,1,13,-Pentafluoropropane and 1,1,1,2-Tetrafluoroethane] on the hind paws smooth and glabrous skin of P7 rat pups without supplemental sedation or general anesthesia.

2012-2016 Co-PI Thrasher Research Fund (89377)

Title: Predicting Perioperative Opioid Adverse Effects and Personalizing Analgesia in Children: A Multicenter Pharmacogenetic Study

The goals of this project are 1) to identify children who are genetically predisposed to risk of serious side effects from morphine and other opioids. 2) To assess postoperative incidence of significant central adverse effect to morphine (respiratory depression, excessive sedation and postoperative nausea and vomiting - PONV). 3) To identify genetic profiles that will predict children’s increased pain sensitivity and inadequate pain relief from morphine and other opioids. Efficacy secondary endpoint includes post-surgical pain scores and morphine requirements.

2013- present PI Linde Company

Title: Effectiveness of Nitrous Oxide for Reducing Pain and Distress Associated with Venous Cannulation in Children: A Prospective And Blinded Randomized Controlled Trial

The goal of this study is to find out if the use of nitrous oxide gas through a breathing mask with or without use of a numbing patch relieves pain, anxiety, and fear related to needle stick better than the current method of pain relief with use of a skin-numbing patch alone. The investigators are hopeful that the nitrous oxide gas delivered by a facemask before needle sticks will reduce the physical pain, anxiety and fear of needles and that the patient may have a more positive experience that will probably reduce the future anxiety about medical procedures that involve needle sticks.

2014- present

CoPI

“The Anesthesia Research Distinguished Trailblazer Award” from Anesthesia Department, Boston Children’s Hospital

Title: Autonomic Nervous System Function in Children and Adolescents with Primary Headache Disorders.

2016- 2017

PI

Gebauer Company

Title: Efficacy and safety profile of a topical anesthetic spray to decrease heel stick pain

The goal of this study is to perform a study on P7 rats to evaluate efficacy and neural toxicity of repeated applications of topical anesthetic spray [Pain Ease; 1,1,13,-Pentafluoropropane and 1,1,1,2-Tetrafluoroethane] on the hind paws smooth and glabrous skin of P7 rat pups without supplemental sedation or general anesthesia.

Current Unfunded Projects

Year(s)

Role on Project

Title of Project

2005 - present

Co-PI & Mentor

Title of Project
Safety and Efficacy of Tranexamic Acid in Children undergoing Craniofacial Reconstruction Surgery.

Supported by Anesthesia Department, Children's Hospital Boston. My role is to design methodology, provide anesthesia, conduct the study, interpret the data and assist with writing of the results for publication

The goal of this study is to assess the antifibrinolytic efficacy of two dosing levels, adverse effects and pharmacokinetics of tranexamic acid in children between the ages 3 months and 6 years.

I am supervising and assisting a junior Anesthesia Staff in designing, conducting and executing the above project.

2007 – present

Co-PI & Mentor

Title of Project

The Efficacy and Safety of Local Anesthetic Infusion with Ropivacaine Through a Wound Catheter for the Management of Pain after Surgical Correction of Ureteropelvic Junction Obstruction

The goal of this study is assess safety and efficacy of continuous infusion of Ropivacaine for management of postoperative pain in infants and children following ureteropelvic junction obstruction correction surgery.

I am supervising Rahul Panezar, MD, a Clinical Fellow in the Intensive Care Medicine, in designing, conducting, executing and eventually writing up the results for publication.

2011- present

Co-PI & Mentor

Title of Project

Efficacy of Perioperative Ketamine for Management of Postoperative Pain after Scoliosis Correct

The goal of this study is assess safety and efficacy of continuous infusion of ketamine for management of postoperative pain following scoliosis correction surgery. The expected benefit of ketamine is to reduce postoperative opioid requirement and thereby reduce opioid-associated complication and improve post-surgical recovery.

I am supervising Hubert Benzon, MD, a junior staff anesthesiologist, in designing, conducting, executing and eventually writing up the results for publication.

2011- present

Co-PI & Mentor

Title of Project

Efficacy and safety of regional nerve block compared to conventional intravenous opioid use for management of postoperative pain following anterior cruciate ligament repair.

The goal of this study is assess safety and efficacy of single injection and continuous infusion local anesthetic for peripheral nerve block in children and adolescent undergoing ACL repair surgery. The goal is reduce use of opioid analgesia and improve post-surgical outcomes with respect to early recovery and discharge from hospital.

I am supervising surgical nurse practitioner, Rosella Micalizzi, RN, NP, of the surgical department at CHB. My role is teaching in designing, conducting, executing and eventually writing up the results for

publication.

<u>2011- present</u>	<u>Co-PI & Mentor</u>	<u>Title of Project</u>
		Efficacy and complications of regional nerve blocks for management of postoperative pain after anterior cruciate ligament repair.

I am supervising Kayla Mahoney, a master's degree in Medical Science at Boston University. My role is as a mentor and my responsibilities are teaching in designing, conducting, executing and eventually writing up the results for publication.

<u>2012 – present</u>	<u>Co-PI & Mentor</u>	<u>Title of Project</u>
		Examining persistent postsurgical pain and psychosocial functioning in adolescents with idiopathic scoliosis who underwent spinal fusion surgery at Boston Children's Hospital

I am supervising Maria DeAngelis, a master's degree student at Boston University and collaborating with the PI, Christine Sieberg, PhD. My role is as a mentor and my responsibilities are teaching in designing, conducting, executing and eventually writing up the results for publication. Supervising and training the student in performance of bedside and electronic quantitative sensory testing.

Regional Invited Presentations

1988		
Regional Anesthesia Course	Pain in the Pediatric Patient Boston	Single presentation Harvard Medical School
1990		
Practical Aspects of Pediatric Anesthesia	1. Peripheral Nerve Blocks in Children 2. Continuous Regional Techniques in Children Boston	Two presentation Harvard Medical School
1991		
Practical Aspects of Pediatric Anesthesia	Regional Techniques for Postoperative Analgesia Boston	Single presentation Harvard Medical School
1992		
Practical Aspects of Pediatric Anesthesia	Spinal Anesthesia and Peripheral Nerve Blocks Boston	Single presentation Harvard Medical School
1993		
Comprehensive Review in Pain Management	Acute Pediatric Pain Management Boston	Single presentation Harvard Medical School
1994		
Practical Aspects of	1. Spinal Anesthesia in Infants	Two presentation

Pediatric Anesthesia 1996	2. Pediatric Nerve Blocks Boston	Harvard Medical School
Practical Aspects of Pediatric Anesthesia 1997	1. Spinal Anesthesia in Infants 2. Pediatric Nerve Blocks Boston	Two presentation Harvard Medical School
Comprehensive Review of Pain Management for the Practicing Physician 1998	Spinal anesthesia in infants, Boston	Single presentation Harvard Medical School
Practical aspects of pediatric anesthesia 2000	1. Does spinal anesthesia avoid problems in premature infants 2. Workshop on spinal anesthesia Boston	Tow presentation Harvard Medical School
Practical aspects of pediatric anesthesia 2001	1. Safety and efficacy of spinal anesthesia in children 2. Workshop on spinal anesthesia in infants Boston	Two presentation Harvard Medical School
Harvard Medical School Anesthesia Review & Update	Pros and Cons of General Anesthesia vs. Spinal Anesthesia Boston	Single presentation Harvard Medical School
2002 Harvard Medical School Anesthesia Review and Update, 31 st Anniversary	Controversies in Pediatric Anesthesia Boston	Single presentation Harvard Medical School
2002 Practical Aspects of Pediatric Anesthesia	1. Do Spinals Avoid Problems in Premies 2. Regional Block & Pain Treatment; workshop Boston	Two presentation Harvard Medical School
2002 Principles & Practice of Pain Medicine	Pediatric Pain: Illustrative Cases Boston	Single presentation Harvard Medical School
2003 Anesthesia Review and Update	Challenges in Pediatric Anesthesia Boston	Single presentation Harvard Medical School
2004 Practical Aspects of Pediatric Anesthesia	1. Spinal Anesthesia in Newborn Infants 2. Regional Anesthesia workshop Boston	Two presentation Harvard Medical School

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2006

Practical Aspects of
Pediatric Anesthesia

1. Complications of Pediatric Regional Anesthesia
2. Infant Spinal Anesthesia
Boston

Two presentation
Harvard Medical School

2007

Pediatric Sedation Outside
of the Operating Room

Liability & Risks of Pediatric Sedation
Boston

Session moderator
Harvard Medical School

2008

2nd Annual Pediatric
Anesthesiology & Critical
Care Medicine Conference

1. Complications of neural axis blockade
2. Regional Anesthesia-workshop
Boston

Two presentation
Harvard Medical School

2010 (May 26-28) The Fairmont Copley Hotel Boston MA 4 th Annual Pediatric Anesthesiology and Critical Care Medicine Conference Perioperative Care of the Infant and Child	1. Un update on Acute Pediatric Pain 2. Neural axis workshop	Regional Anesthesia-workshop Session moderator Two presentation Harvard Medical School
2012 (May 14-18) Harvard Anesthesia Update: Innovation and Transformation in Anesthesia. Fairmont Copley Plaza Hotel, Boston, MA	Innovation in Pediatric and Adult Pain Therapies	Harvard Medical School Anesthesia Department Brigham and Women Hospital, Beth Israel Hospital and Children's Hospital Boston
2012 (May 23-25) Harvard Anesthesia Practical Aspects of Pediatric Anesthesiology, Critical Care and Pain Medicine. Fairmont Copley Plaza Hotel, Boston, MA	1. Acute Pain Management in Children: An Update 2. Moderator: Pediatric Peripheral Nerve Blocks Workshop.	Harvard Medical School Anesthesia Department Children's Hospital Boston
2014 (May 2-4) Practical Aspects of Pediatric Anesthesia and Critical Care. Fairmont Copley Plaza Hotel, Boston, MA	1. Opioid-induced Hyperalgesia 2. Moderator: Pediatric Peripheral Nerve Blocks, central blocks and medical acupuncture Workshop	Harvard Medical School Department of Anesthesiology, Perioperative and Pain Medicine. Boston Children's Hospital, Boston, MA
Anesthesiology Update 2014 (May5-9)	Acute Pain Management in the Pediatric Population	Harvard Medical School Beth Israel Deaconess Medical Center, Boston, MA
2015 (May 8-10) Principles of Pediatric Anesthesia and Critical Car The Fairmont Copley Plaza, Boston MA.	Chronic and Acute Pediatric Pain. Principles of Pediatric	Harvard Medical School Boston Children's Hospital Boston, MA

2015 (May 5-9) Harvard Review Course The Fairmont Copley Plaza, Boston MA.	Management of Pediatric Complex Regional Pain Syndromes: An Update. Anesthesiology Update 2014	Harvard Medical School Beth Israel Deaconess Medical Center, Boston, MA
2016 (May 6-8) Fairmont Copley Plaza, Boston MA.	1. Rehabilitative approach to chronic pain 2. Acute and immediate postoperative pain management	Harvard Medical School Boston Children's Hospital Boston, MA
2016 (May 2-3) Barton Theatre, MIT, Cambridge MA	Global Burden of Anesthesia & Perioperative Pain: The Role of Anesthesiologists 20 th Anniversary Future of Health Technology Summit - FHTI 2016 and worldwide webcast Produced by Future of Health Technology Institute (FHTI). World Health Strategy: Rethink, Redefine, Renew.	Massachusetts Institute of Technology, Cambridge, MA

Local Invited Presentations

1. 1986 "Malignant Hyperthermia", Grand Rounds, Operating Room Nursing Department, Children's Hospital, Boston, MA [Invited speaker]
2. 1987 "Chronic Pain in Children", Grand Rounds, Operating Room Nursing Department, Children's Hospital, Boston, MA [Invited speaker]
3. 1988 "Malignant Hyperthermia in Children", Grand Rounds, Department of Pediatrics, Beverly Hospital, Beverly, MA [Invited speaker]
4. 1988 "Postoperative Pain Management in Children", Grand Rounds, Intensive Care Medicine Nursing Department, Children's Hospital, Boston, MA [Invited speaker]
5. 1990 "Local Anesthetic Pharmacology", Grand Rounds, Department of Otolaryngology, Children's Hospital, Boston, MA [Invited speaker]
6. 1990 "Pediatric Chronic Pain Management", Grand Rounds, Operating Room Nursing Department, Children's Hospital, Boston, MA. [Invited speaker]
7. 1990 "Pediatric Regional Anesthesia", Grand Rounds, Department of Anesthesia, Children's Hospital, Boston, MA.
8. 1991 "Latex Allergy in the Operating Room", Grand Rounds, Operating Room Nursing Department, Children's Hospital, Boston, MA. [Invited speaker]
9. 1993 "Latex Allergy; relevance to the Anesthesiologist", Seminar in Clinical Problems in Anesthesia, Beth Israel Hospital, Boston, MA. [Invited speaker]
10. 1993 "Anesthetic Management of Major Back Surgery in Children and Adolescents", Grand Rounds, Department of Anesthesia, New England Deaconess Hospital, Boston, MA. [Invited speaker]

11. 1995 “Management of Acute Pain after Urologic Surgery in Children”, Grand Rounds, Department of Urology, Children's Hospital, Boston, MA. [Invited speaker]
12. 1995 “New Concepts of Understanding Pain Part I”, Nursing Department, Children's Hospital, Boston, MA. [Invited speaker]
13. 1995 “New Concepts of Understanding Pain Part II”, Nursing Department, Children's Hospital, Boston, MA. [Invited speaker]
14. 1999 “Pediatric Regional Anesthesia & Pain Management”, Grand rounds, Department of Anesthesia, Brigham & Women’s Hospital, Boston, MA. [Invited speaker]
15. 2000 “CRPS & advances in pain diagnosis and treatment”, Grand rounds, Department of Psychiatry, Children’s Hospital, Boston, MA. [Invited speaker]
16. 2000 “Postoperative pain management without compromising the airway, A developmental approach to airway issues in children” Department of Nursing Staff Development Seminar, John F. Enders Pediatric Research laboratories auditorium 300 Longwood Ave. Boston, MA. [Invited speaker]
17. 2001 “Neuropathic Pain in Children”, Grand rounds, Department of Anesthesia. John F. Enders Pediatric Research laboratories auditorium 300 Longwood Ave. Boston, MA. [Invited speaker]
18. 2002 “Safety & Efficacy of Acute Pain Treatment in Children”, Seminar on Hospital Pain Standards, Department of Nursing, John F. Enders Pediatric Research laboratories auditorium 300 Longwood Ave. Boston, MA. [Invited speaker]
19. 2006 “Complications of Pediatric Regional Anesthesia”. Practical Aspects of Pediatric Anesthesia, Westin Copley Place, Boston, MA. [Invited moderator & speaker]
20. 2006 “Postoperative Monitoring and Anesthesia Adverse Events”, Pediatric Surgical Nursing Program. Children's Hospital, Boston, Boston, MA. [Invited speaker]
21. 2008 Workshop on Regional Anesthesia 2nd Annual Pediatric Anesthesiology & Critical Care Medicine Conference. Westin Copley Place, Boston, MA.[Invited Session moderator]
22. 2008 “Complications of neural axis blockade”, 2nd Annual Pediatric Anesthesiology & Critical Care Medicine Conference. Westin Copley Place, Boston, MA.[Invited speaker]
23. 2008 “Regional Anesthesia Complications in children”, Grand rounds, Department of Anesthesiology, Perioperative & Pain Medicine, Children's Hospital Boston, Boston, MA. [Invited Speaker]
24. 2009 “Pharmacological management of venipuncture pain”, Pain Management Conference: Needle Pain in Children, Children's Hospital Boston, Boston, MA. June 09 2009 [Invited Speaker]
25. 2010 “Topical Anesthesia in Children: An update” Children's Hospital Boston, Folkman’s Auditorium. Symposium on “Perspective on Needle Pain Management”. Children's Hospital Boston, 300 Longwood Avenue Boston, MA 02115. June 29, 2010 [Invited Speaker]
26. 2010 “Acute Pain Management in Children: An update” Children’s Hospital Boston, Anesthesia Department Grand rounds. August 25, 2010. [Invited Speaker]
27. 2011 “Postoperative pain management in PACU” PACU Nursing Seminar Feb. 11, 2011. Department of Nursing, Children’s Hospital Boston. [Invited Speaker]

28. 2011 “Childhood CRPS Management: Challenges and Progress”. Grand Rounds at Adolescent Medicine Service, Department of Medicine, Children’s Hospital Boston, October 12, 2011. [Invited Speaker]
29. 2011 “Update on Rehabilitative Management of CRPS in Children” Operating Room Nursing Grand rounds, November 30, 2011
30. 2012 “Pediatric Chronic Pain; A Biopsychosocial Disorder” Grand rounds Department of Pediatrics, University of Massachusetts, March 16, 2012
31. 2012 “Management of patients on long-term opioids” on September 29, 2012. Pediatric Pain Management: State of the Art and Science” Conference 2012, Boston Children’s Hospital, Boston, MA. September 29, 2012.

Report of Regional Invited Teaching and Presentations

1. 1988 “Postoperative Pain Management in Children”, Anesthesiology Update Eighth Annual Seminar, Colby College, Waterville, Maine. [Invited speaker]
2. 1988 “Regional Anesthesia in Children”, Anesthesiology Update Eighth Annual Seminar, Colby College, Waterville, Maine. [Invited speaker]
3. 1990 “Regional Anesthesia and Postoperative Pain Control for the Pediatric Patient”, Anesthesia Grand Rounds, New England Medical Center Hospital, Boston, MA. [Invited speaker]
4. 1990 “Pediatric Pain Management, Anesthesia”, Grand Rounds, Bay State Medical Center, Springfield, MA. [Invited speaker]
5. 1992 “The Challenge of Latex Allergy”, New England Myelodysplasia Association Conference on Living With Spina Bifida: A Look at Today's Challenges. Leominster, MA [Invited speaker]
6. 1993 Pediatric Regional Anesthesia, First Annual Winter Seminar on Pediatric Anesthesia. Massachusetts Society of Anesthesiologists & Massachusetts Anesthesia Council on Education Conference, Lincoln, New Hampshire. [Invited speaker]
7. 1995 “Chronic Pain Syndromes in Pediatrics”, Pediatric Grand Rounds, Department of Pediatrics, South Shore Hospital, South Weymouth, MA. [Invited speaker]
8. 1995 “Latex Allergy: Occupational and Health Hazard”, Risk Management Conference, Saint Vincent Hospital, Worcester, MA. [Invited speaker]
9. 1996 “Regional Anesthesia for the Neonate & Infant, Symposium on Pain”, New England Medical Center. Massachusetts Anesthesia Council on Education Conference, New England Medical Center, Boston, MA. [Invited speaker]
10. 1996 “Regional Block and Pain Management in Infants and Children”, Anesthesia Grand Rounds, Department of Anesthesia, New England Medical Center, Boston, MA. [Invited speaker]
11. 1997 “Pediatric Regional Anesthesia”, Anesthesia Grand Rounds, Department of Anesthesia, University of Massachusetts Medical Center, Worcester, MA. [Invited speaker]
12. 2000 “Chronic Pain in Children”, Master of Science in Pain Research, Graduate Program in Pain Research, Education and Policy, Tufts University School of Medicine, Boston MA. March 2000 [Invited speaker]

13. 2001 “Pain assessment and Treatment in Children”, Master of Science in Pain Research, Graduate Program in Pain Research, Education and Policy, Tufts University School of Medicine, Boston, MA. [Invited speaker]
14. 2002 “Quantitative sensory testing in pain”, New England Pain Association. Winter Conference on: Innovations In Pain Management, Faulkner Hospital, Boston, MA. May 2002 [Invited speaker]
15. 2006 “Neonatal epidural analgesia and anesthesia”, Neonatal Intensive Care Medicine Nursing Staff, Children's Hospital, Boston, 300 Longwood Ave. Boston, MA. [Invited speaker]
16. 2006 “Introduction to Pediatric Pain; Assessment and Management”, Masters of Science in Pain Research, Education and Policy class., Tufts University, Boston, MA. March [Invited speaker]
17. 2006 “Management of Acute Pediatric Pain”, 49th Annual New England Society of Anesthesiologists Conference, Cranwell Resort. Lenox, MA 01240. [Invited speaker]
18. 2007 “Childhood Acute & Chronic Pain”, Masters of Science in Pain Research, Education and Policy class., Tufts University, Boston, MA. [Invited speaker]
19. 2008 “Childhood Pain Assessment & Management”, Masters of Science in Pain Research, Education and Policy class, Tufts University, Boston, MA. [Invited speaker]
20. 2009 “Childhood Pain Assessment & Management”, Masters of Science in Pain Research, Education and Policy class, Tufts University, Boston, MA. March 2009 [Invited speaker]
21. 2010 “Pediatric Acute and Chronic Pain Assessment & Management”, Masters of Science in Pain Research, Education and Policy class, Tufts University, Boston, MA. March 2010 [Invited speaker]
22. 2010 “Treatment of Acute Perioperative Pain in Children”, 53rd Annual New England Society of Anesthesiologists, Newcastle, NH September 23-25, 2010 [Invited speaker]
23. 2010 “Common, Unsettling, Difficult to Treat PACU Problems”, 53rd Annual New England Society of Anesthesiologists, Newcastle, NH September 23-25, 2010 [Invited speaker]
24. 2010 “Management of Acute Postoperative Pain: An update”, Grand rounds. New England Medical Center, Boston, MA. October 25, 2010.[Invited speaker]
25. 2011 “Challenges of Pediatric Acute and Chronic Pain Assessment & Management”, Masters of Science in Pain Research, Education and Policy class, Tufts University, Boston, MA. April 2011 [Invited speaker]
26. 2011 “Pediatric Acute Pain: An Overview”, Nurse Practitioner Class, Nursing School, Northeastern University, June 21, 2011 [Invited speaker]
27. 2012 “Principals of Assessment and Treatment of Pain in Children”, Masters of Science in Pain Research, Education and Policy class, Tufts University, Boston, MA. April5, 2012 [Invited speaker]
28. 2012 “Pediatric Acute Pain Management”, Nurse Practitioner Class, Nursing School, Northeastern University, June 19, 2012 [Invited speaker]
29. 2013 “Management of Acute Pediatric Pain: An update” Acute Pain Symposium. Harvard Medical School Continuous Education. The Fairmont Copley Plaza. Boston, MA September 7-9, 2013 [Moderator on the Acute Pediatric Pain session and speaker]

30. Report of National Invited Teaching and Presentations

31. 1986 “Malignant Hyperthermia”, Grand Rounds, Department of Anesthesia, Brookdale Hospital Medical Center, Brooklyn, NY. [Invited speaker]
32. 1989 “Spinal Anesthesia in Premature Infants”, Society for Pediatric Anesthesia, Third Annual Meeting, New Orleans, Louisiana. [Invited speaker]
33. 1990 “Challenges in Pediatric Pain Management”, Pain Update 1990, Annual Symposium, Mercy Hospital Medical Center, Des Moines, Iowa. [Invited speaker]
34. 1990 “Pediatric Cancer Pain Management and Pharmacodynamics”, Pain Update 1990, Annual Symposium, Mercy Hospital Medical Center, Des Moines, Iowa. [Invited speaker]
35. 1991 “Pediatric Regional Anesthesia”, 11th Annual Clinical Anesthesia: Clinical Update 1991 Conference University of Medicine and Dentistry of New Jersey. NJ. [Invited speaker]
36. 1991 “Introduction to Regional Anesthesia in Children,” Grand Rounds, Department of Anesthesia, Brookdale Hospital Medical Center, Brooklyn, NY. [Invited speaker]
37. 1991 “Pediatric Pain Management, Anesthesia” Grand Rounds, Department of Anesthesia, Fairfax Hospital, Virginia. [Invited speaker]
38. 1992 “Management of Acute Postoperative Pain in Children”, Grand Rounds, Department of Anesthesia, Christiana Hospital, Delaware. [Invited speaker]
39. 1992 “Acute Pain Management in Children”, Grand Rounds, Department of Anesthesia, Brookdale Hospital Medical Center, Brooklyn, NY. [Invited speaker]
40. 1994 “Pediatric Pain Management”, Comprehensive Review of Pain Management Conference. The American Society of Regional Anesthesia, Airport Hilton Hotel, Chicago, IL. [Invited speaker]
41. 1995 “Management of Acute Post-operative Pain in Children”, Symposium on Clinical and Administrative Issues for the 1990's. Multidisciplinary Team Managing Acute Post- Operative Pain in Children and Adults, American Pain Society, Los Angeles, CA. [Invited speaker]
42. 1995 “Pediatric Pain Management”. Pain Management in the 1995: Clinical and Regulatory Issues, Texas Medical Association Conference. Austin, Texas. [Invited speaker]
43. 1995 “Management of Cancer Pain in Children”, Cancer Pain: Extremes in Age, Young Children and Older Adults, A Symposium Pain Management: Attitudes, Obstacles, and Issues. General Assembly of Virginia and Medical Society of Virginia. Richmond Virginia. [Invited speaker]
44. 1996 “Advanced Regional Anesthesia Techniques”, Society for Pediatric Anesthesia Meeting, American Academy of Pediatrics, Section on Anesthesiology, Tampa, Florida. [Invited speaker]
45. 1996 “Chronic Pain in Pediatric Patient”, Update and Recent Advances in Medicine, 14th Annual Convention and CME Program, American Association of Physicians from India, Boston, MA. [Invited speaker]
46. 1996 “Spinal Anesthesia in Infants and Children”, Spinal Anesthesia- From Memories to Mechanisms, American Society of Anesthesiologist New Orleans, Louisiana. [Invited speaker]

47. 1997 “Myopathies: Anesthetic implications, Society of Pediatric Anesthesia”, Pediatric Anesthesia Annual Meeting, San Antonio, Texas. [Invited speaker]
48. 1997 “Management of Acute Postoperative Pain in Children”, Grand Rounds, Department of Anesthesia, New York Hospital, Cornell Medical Center, NY. [Invited speaker]
49. 1997 “Cancer Pain management for adults and children”, The Brain Tumor Society, New Frontiers 1997 National Conference. Sheraton Hotel, Boston, MA. [Invited speaker]
50. 1998 “Postoperative Pain Management in Infants and Children”. Advances in Physiology and Pharmacology in Anesthesia and Critical Care Conference, Greenbrier, West Virginia. [Invited speaker]
51. 1998 Regional Anesthesia in Children. Advances in Physiology and Pharmacology in Anesthesia and Critical Care, Greenbrier, West Virginia. [Invited speaker]
52. 2000 “Neuropathic Pain in Children”. Pain Management in Children: Biology and Clinical Application, American Society of Anesthesiology Annual Meeting, San Francisco, CA. [Invited speaker]
53. 2001 “Pediatric Pain Management”, Pain Management for the New Millennium-Challenges and Solutions Conference, Albert Einstein Medical Center, Philadelphia, PA. [Invited speaker]
54. 2001 “Imperfectly functioning epidural following major thoracic surgery”, Society of Pediatric Anesthesiology, Annual Meeting, San Diego, CA. [Invited speaker]
55. 2001 “Advances in Acute Pain Management in Children”, Society of Pediatric Anesthesiology Annual Meeting, San Diego, CA. [Invited speaker]
56. 2001 “Neuropathic Pain in Children”, American Pain Society Annual Meeting, Phoenix, Arizona
57. 2002 “Pediatric Regional Anesthesia: Safety, efficacy & outcomes”. Symposium on Pediatric Pain. Austin Children’s Hospital, Omni Hotel, Austin, TX. [Invited speaker]
58. 2003 “Pediatric Complex Regional Syndrome: Pathophysiology, Diagnosis, Myths & Current Treatment”, Pediatric Pain Management Update Symposium, Seattle Children’s Hospital, Seattle, Washington. [Invited speaker]
59. 2003 “Overview of Pediatric Pain Management”, Department of Pediatrics & Anesthesia, Children’s Hospital Children’s Hospital, Orange County, California. [Invited keynote speaker]
60. 2004 “Advances in management of postoperative pain in children”, grand rounds, Department of Anesthesia, Saint Barnabas Medical Center, Livingston, New Jersey. [Invited speaker]
61. 2004 “Controversies in Preoperative Pregnancy Testing in Adolescents”, Panel on Anesthetic Concerns for Healthy Kids, American Society of Anesthesiology Annual Meeting, Las Vegas. [Invited speaker]
62. 2005 “New Development Analgesics for the Management of Acute Pain”. American Pain Society, 24th Annual Scientific Meeting, Boston, MA. [Invited session moderator]
63. 2005 “Introduction to the assessment of in Infants and Children”. Pediatric Pain Management Symposium. American Academy of Pediatrics California Chapter One. Monterey, CA. [Invited speaker]

64. 2005 “Introduction to Chronic Pain Syndromes & Their Treatment in Children”, Pediatric Pain Management Symposium. American Academy of Pediatrics California Chapter One, Monterey, CA. [Invited speaker]
65. 2005 “Pharmacology of Commonly Used Pain Medications in the Pediatric Population”, Pediatric Pain Management Symposium. American Academy of Pediatrics California Chapter One. Monterey, CA. [Invited speaker]
66. 2005 “History of Pediatric Pain Management”. Pediatric Pain- Past, Present and Future Symposium. Children’s Hospital & Regional Medical Center, Seattle, WA, Seattle, WA. [Invited speaker]
67. 2007 “Regional Block & Pain Treatment Workshop”. Pediatric Anesthesiology and Critical Care Medicine Conference: Perioperative Care of the Infant and Children. Pediatric Anesthesiology and Critical Care Medicine Conference, Philadelphia, PA. [Invited speaker and workshop instructor]
68. 2007 “Management of CRPS at Children's Hospital Boston”. Juvenile & Adolescent CRPS Consensus Conference: Recommendations for Diagnostic Criteria. Lucile Packard Children’s Hospital, Stanford University Medical Center. [Invited speaker]
69. 2007 “Topical Anesthetics: An update”. American Academy of Pediatrics, National Conference & Exhibition. Masconi Center, San Francisco, CA. [Invited speaker/workshop]
70. 2008 Pediatric Epidural Anesthesia. Society of Pediatric Anesthesia Winter Annual Meeting. Sheraton Hotel & Marina, San Diego, CA. [Invited speaker]
71. 2008 “Caudal-to-thoracic epidural placement”. Society of Pediatric Anesthesia Winter Annual Meeting. Sheraton Hotel & Marina, San Diego, CA. [Invited speaker]
72. 2008 “Ultrasound Application for Peripheral Nerve Block Workshop”. Society of Pediatric Anesthesia Winter Meeting. Sheraton Hotel & Marina, San Diego, CA. [Invited workshop instructor]
73. 2008 “Advances in Pediatric Pain”. Grand rounds, Department of Pediatrics, Dallas Children's Hospital, Southwestern Medical Center University Hospitals, TX. [Invited speaker]
74. 2008 “Pediatric Pain: Advances & ongoing challenges” Annual Pain Awareness Week Conference, Dallas Children's Hospital, Southwestern Medical Center University Hospitals, TX. [Keynote speaker]
75. 2008 “Complications of Pediatric Regional Anesthesia”, Grand rounds, Department of Anesthesiology, Parkland Hospital, Southwestern Medical Center University Hospitals, TX
76. 2009 “Pediatric Epidural Complications” Annual Pediatric Anesthesiology. March 19-22, 2009, Jacksonville, FL. [Invited speaker]
77. 2009 “A Single-dose Caudal Block in Children” Panel on “Everyday Regional for the Pediatric Patient” American Society of Anesthesiologists Annual Meeting. October 17-21, 2009 New Orleans, Louisiana
78. 2010 “Pediatric Postoperative Pain Management” El Salvador Society of Anesthesiologists. January, 2010
79. 2010 “Complications of Pediatric Epidural Anesthesia & Analgesia”, Panel on “Epidural Analgesia in Infants and Children” on April 16, 2010. Society of Pediatric Anesthesia. April 15-18, 2010

80. 2010 Instructor, Associate Faculty in “Advanced Ultrasound Guided Regional Anesthesia” Workshop on April 17, 2010. Society of Pediatric Anesthesia. April 15-18, 2010
81. 2011 “Complications of Pediatric Epidural Anesthesia & Analgesia”, Panel on “Epidural Analgesia in Infants and Children” on April 16, 2010. Society of Pediatric Anesthesia. March 31-April 3, 2011
82. 2011 “Management of Pediatric Complex Regional Pain Syndrome; Challenges & Treatment Models” Visiting professor, The Johns Hopkins Hospital. Baltimore, May 19, 2011
83. 2012 “Pediatric Acute Pain: An evidence-based update”, Special Interest Group-Pediatric Pain Medicine, February 23, 2012. Society of Pediatric Anesthesia, Tampa Florida, February 23-26, 2012
84. 2013 “Opioid Induced Hyperalgesia” Pediatric Pain Medicine. Pediatric Anesthesiology March 14-17, 2013. Las Vegas, NV
85. 2013 Instructor, Associate Faculty in “Advanced Ultrasound Guided Regional Anesthesia” Workshop on March 15, 2013. Pediatric Anesthesiology March 14-17, 2013. Las Vegas, NV
86. 2013 “Essentials of Pediatric Pain” Intensive Review of Pediatric Anesthesia. Society of Pediatric Anesthesia. Hyatt Regency, Chicago IL, August 23-25, 2-13
87. 2013 “Essentials of Pediatric Regional Anesthesia” Intensive Review of Pediatric Anesthesia. Society of Pediatric Anesthesia. Hyatt Regency, Chicago IL, August 23-25, 2-13
88. 2016 An Interdisciplinary Approach to the Treatment of Pediatric Chronic Pain. “Neurobiology of Chronic Pain” Feb. 19, 2016. Combined Sections Meeting of The American Physical Therapy Association. Anaheim Feb. 17-20, 2016.
89. 2017 Abstract moderator “Pediatric Pharmacology Session”. 4th Annual Meeting of the Society for Pediatric Pain Medicine. March 2, 2017. JW Marriot, Austin, Texas

Report of International Invited Teaching and Presentations

1. 1990 “Pediatric Cancer Pain Management”, Department of Oncology & Anesthesia, Institute of Pediatrics, Krakow, Poland. [Visiting professor]
2. 1991 “Evolution of Pediatric Regional Anesthesia”, National Symposium on Adult and Pediatric Pain Management, University of Mexico, Mexico City, Mexico. [Invited speaker]
3. 1991 “Pediatric Pain Management”, National symposium on Adult and Pediatric Pain Management, University of Mexico, Mexico City. [Invited speaker]
4. 1992 “Regional anesthesia and Postoperative pain management”, Department of Anesthesiology and Critical Care Medicine, Universitat Ulm Klinikum , Universitatsklinik Anesthesiology, Germany, University of Ulm, West Germany. [Invited speaker]
5. 1992 “Reflex Sympathetic Dystrophy in Children”, International Workshop on Pain Therapy in Children; Myths and Facts. Moderator on the acute and chronic pain discussion sessions, Institut fur Anesthesiologie , University of Graz Medical School, Graz, Austria. [Invited speaker]
6. 1992 “Pain in Children; Myths and Facts”, International Workshop on Pain Therapy in Children; Myths and Facts. Moderator on the acute and chronic pain discussion sessions, Institut fur Anesthesiologie , University of Graz Medical School, Graz, Austria. [Invited speaker]

7. 1992 “Management of Acute Pain in Children”, Pain in Childhood Conference, University of Manitoba, Manitoba Winnipeg. [Invited speaker]
8. 1992 “Organization of Pediatric Acute Pain Service”, Pain in Childhood Conference, University of Manitoba, Manitoba Winnipeg. [Invited speaker]
9. 1994 “Pediatric Acute Neuropathic Pain in Children: Prevalence and Treatment”, International Congress of Pain and Palliative Care, a Chapter of International Association on Study of Pain. Mexico City, Mexico, D.F. [Invited speaker]
10. 1994 “The Role of Nerve Blocks in the Management of Pediatric Pain”, International Congress of Pain and Palliative Care, a Chapter of International Association on Study of Pain. Mexico City, Mexico, D.F. [Invited speaker]
11. 1995 “Pharmacological Management of Pain in Children and Adolescent,” 5th Annual Update on Clinical Aspects and Therapy of Pain, Pain Clinic at Hospital General de Mexico, Mexico City, Mexico. [Invited speaker]
12. 1995 “The Treatment of Cancer Pain in Children”, 5th Annual Update on Clinical Aspects and Therapy of Pain, Pain Clinic at Hospital General de Mexico, Mexico City, Mexico. [Invited speaker]
13. 1995 “The use of Opioids and NSAIDs for Management of Acute Post-operative Pain in Children” Clinical Forum on Neonatal Emergencies Clinical Forum on Cancer Pain Management, International Update in Anaesthesiology, Pain Management, and Critical Care. P.D. Hinduja National Hospital & Medical Research Center. Bombay, India. [Invited speaker]
14. 1995 “Management of Perioperative Pain and Stress in Children”, Department of Pediatric Anaesthesia, Jer Bai Wadia Children's Hospital, Bombay, India. [Visiting professor]
15. 1996 “Conscious Sedation in Children”, 38th Annual Review Course in Anaesthesia, McGill University Department of Anaesthesia, Montreal, Canada. [Invited speaker]
16. 2000 “New developments in acute pain management”, The 5th International Symposium on Pediatric Pain, Great Ormond Street Hospital for Children. University College London, UK. [Invited speaker]
17. 2000 “Neurophysiological approaches to pediatric pain”, The 5th International Symposium on Pediatric Pain Great Ormond Street Hospital for Children. University College London, UK. [Invited speaker]
18. 2003 “Assessment and Pharmacological Management of pediatric postoperative pain”, 6th International Symposium on Pediatric Pain, Sydney, Australia. [Invited speaker]
19. 2003 “Does the use of regional analgesia in children offer advantages over conventional analgesia”, 7th Biennial Congress. Asian & Oceanic Society of Regional Anesthesia & Pain Medicine, Bangkok, Thailand. [Invited speaker]
20. 2003 “Chair of Scientific Session on Regional Techniques for Pediatric Analgesia”, 7th Biennial Congress. Asian & Oceanic Society of Regional Anesthesia & Pain Medicine, Bangkok, Thailand. [Invited speaker]
21. 2004 “Spinal Anesthesia in Infants and Children”, International Symposium on Anesthesia, Pain Intensive care and Emergency Medicine (APICE), Trieste, Italy. [Invited speaker]
22. 2005 “Complications of Spinal Anesthesia in Infants” 20th International Congress of the Israel Society of Anesthesiologists. Dan Panorama, Tel Aviv, Israel. [Invited speaker]

23. 2007 “New Development in Topical Anaesthesia”, Scandinavian Society of Paediatric Anaesthesia, Oslo, Norway. [Invited speaker]
24. 2007 “Advances in Pediatric Pain Management”, Asian Society of Pediatric Anesthesia (ASPA), Pattaya Exhibition & Convention Hall, Pattaya, Thailand. [Invited speaker]
25. 2007 “Peripheral Nerve blocks and Regional Anesthesia in children”, Asian Society of Pediatric Anesthesia, Pattaya Exhibition & Convention Hall, Pattaya, Thailand. [Invited speaker]
26. 2007 “Ultrasound-guided Peripheral Nerve blocks in Children”, The 15th Association of South east Asian Nations (ASEAN) Congress of Anesthesiologists, Pattaya Exhibition & Convention Hall, Pattaya, Thailand. [Invited speaker]
27. 2010 “An update on Pediatric Acute Pain Management”, The Japanese & Australian Society of Anesthesia Congress of Anesthesiologist, Fukuoka Convention Center, Fukuoka, Japan (Invited speaker) June 1-5, 2010.
28. 2010 “Pediatric Postoperative Pain Management”, VII Annual Anesthesiology Convention, Ritz Carlton, San Juan, Puerto Rico. November 19-21,2010.
29. 2012 “Pharmacology of Analgesics in Infants and Adolescents” The 6th World Congress, World Institute of Pain, Miami Beach, Florida, USA. February 4-6, 2012
30. 2012 “Update on Pediatric CRPS Assessment and Management”. CRPS SIG meeting “A comprehensive Analysis of CRPS Treatment: the New, The Old, What Works and What Does not; Updating the Treatment Algorithm” on Sunday August 26 and 27, 2012. 14th World Congress on Pain, Milan, Italy August 27-31, 2012.
31. 2012 “Pediatric CRPS Update”. Topical Workshop “Complex Regional Pan Syndrome and Autonomic Disturbance” on Friday August 31, 2012. 14th World Congress on Pain, Milan, Italy August 27-31, 2012.
32. 2012 “Neuropathic Pain in Children; Art and Science” on September 7, 2012. 6th Nordic Congress of Pediatric Pain, Reykjavik, Iceland. September 5-7, 2012
33. 2013 CRPS Disorder Diagnosis and Management. Keynote speaker at the 6th Annual Peter and Arthur Sheridan Memorial Lecture. Montreal Children’s Hospital, McGill University Health Center. September, 2013.
34. 2013 What is Chronic Pain Syndrome? Visiting Professor, Pediatric Anesthesia Department. Montreal Children’s Hospital, McGill University Health Center. September, 2013
35. 2014 Management of Peri-procedural Pain: An update. Pediatric Sedation Outside of the Operating Room Conference. San Francisco, CA September 19-21, 2014.
36. 2015 Pharmacological Treatment of Pediatric Complex Regional Pain Syndromes. Symposium on “Myth Busting in Pediatric Complex Regional Pain Syndromes”. 10th International Symposium on Pediatric Pain, Seattle, Washington May 31-June 4.
37. 2017 Pediatric pain rehabilitation outcomes. Visiting professor at Interdisciplinary Pediatric Pain Program Dattelner inderschmerzstage. Witten/Herdecke University, March 16-18, 2017

Report of Community Service Related to Professional Work

<i>Year</i>	<i>Position/Title</i>	<i>Role</i>	<i>Institution</i>
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1984 - 1988	Medical mission	Pediatric anesthesia consultant. Provided anesthesia service for craniofacial reconstructive surgery	Por Cristo Medical Mission to South America. Archdioceses of Boston, 2121 Commonwealth Ave., Boston MA 02135-3193
1997 (June)	Medical mission	Pediatric anesthesia consultant. Provided anesthesia service for craniofacial reconstructive surgery at Children's Hospital ins Guayaquil, Ecuador	Healing the Children, Northeast, Inc. 21 Main Street, New Milford, CT 06776
1990 (Sept)	Medical mission	Pediatric Pain Medicine consultant to establish a Pediatric Pain Service at Krakow Children's Hospital, Krakow Poland	Project HOPE (Health Opportunities for People Everywhere) 255 Carter Hall Lane, Millwood, VA 22646
1999 (March)	Medical mission	Pediatric anesthesia consultant. Provided anesthesia service for head & neck surgery at Christian Medical Hospital, Tanzania	Project Perfect World Foundation (PPWF), One North Franklin Chicago, IL 60606
2006 (Jan) 2007 (Feb)	Medical mission	Pediatric anesthesia consultant & lecturer at Hospital & Medical Research Institute Kalapurnam General Hospital, Rajasthan, India. Provide anesthesia service for head & neck surgery at Phalodi Hospital	Medical Missions for Children. 3 Ocean Terrance # 3. Salem, MA 01970
2010 (Jan)	Medical mission	Benjamin Bloom Children's Hospital, San Salvador, El-Salvador	Global Smile Foundation, Lexington, MA
2011 (Jan)	Medical mission	Benjamin Bloom Children's Hospital, San Salvador, El-Salvador	Global Smile Foundation, Lexington, MA

Report of Scholarship

Peer Reviewed Publications in print or other media

1. **Sethna NF**, Rockoff MA. Cardiac arrest following inhalation induction of anaesthesia in a child with Duchenne's muscular dystrophy. Canadian Anaesthesia Society Journal. 1986 Nov;33(6):799-802.
2. **Sethna NF**, Rockoff MA, Worthen HM, Rosnow JM. Anesthesia-related complications in children with Duchenne muscular dystrophy. Anesthesiology. 1988 Mar;68(3):462-5.
3. Anderson CT, Berde CB, **Sethna NF**, Pribaz JJ. Meningococcal purpura fulminans: treatment of vascular insufficiency in a 2-yr-old child with lumbar epidural sympathetic blockade. Anesthesiology. 1989 Sep;71(3):463-4.
4. Berde C, **Sethna NF**, Masek B, Fosburg M, Rocklin S. Pediatric pain clinics: recommendations for their

- development. *Pediatrician*. 1989;16(1-2):94-102.
5. Berde CB, **Sethna NF**, Levin L, Retik A, Millis M, Lillehei C, et al. Regional analgesia on pediatric medical and surgical wards. *Intensive Care Medicine*. 1989;15 Suppl 1:S40-3.
 6. Berde CB, **Sethna NF**, Conrad LS, Hershenson MB, Shillito J, Jr. Subarachnoid bupivacaine analgesia for seven months for a patient with a spinal cord tumor. *Anesthesiology*. 1990 Jun;72(6):1094-6.
 7. Berde CB, **Sethna NF**, Fisher DE, Kahn CH, Chandler P, Grier HE. Celiac plexus blockade for a 3-year-old boy with hepatoblastoma and refractory pain. *Pediatrics*. 1990 Nov;86(5):779-81.
 8. Pascucci RC, Hershenson MB, **Sethna NF**, Loring SH, Stark AR. Chest wall motion of infants during spinal anesthesia. *Journal of Applied Physiology*. 1990 May;68(5):2087-91.
 9. Berde CB, Beyer JE, Bournaki MC, Levin CR, **Sethna NF**. Comparison of morphine and methadone for prevention of postoperative pain in 3- to 7-year-old children. *Journal of Pediatrics*. 1991 Jul;119(1 (Pt 1):136-41.
 10. Berde CB, Lehn BM, Yee JD, **Sethna NF**, Russo D. Patient-controlled analgesia in children and adolescents: a randomized, prospective comparison with intramuscular administration of morphine for postoperative analgesia. *Journal of Pediatrics*. 1991 Mar;118(3):460-6.
 11. Cooper MG, **Sethna NF**. Epidural analgesia in patients with congenital lumbosacral spinal anomalies. *Anesthesiology*. 1991 Aug;75(2):370-4.
 12. **Sethna NF**, Berde CB. Continuous subarachnoid analgesia in two adolescents with severe scoliosis and impaired pulmonary function. *Journal of Regional Anesthesia*. 1991 Nov-Dec;16(6):333-6.
 13. Irazuzta JE, Berde CB, **Sethna NF**. Laser Doppler measurements of skin blood flow before, during, and after lumbar sympathetic blockade in children and young adults with reflex sympathetic dystrophy syndrome. *Journal of Clinical Monitoring*. 1992 Jan;8(1):16-9.
 14. **Sethna NF**, Sockin SM, Holzman RS, Slater JE. Latex anaphylaxis in a child with a history of multiple anesthetic drug allergies. *Anesthesiology*. 1992 Aug;77(2):372-5. (accompanied by an Editorial)
 15. Shapiro F, **Sethna N**, Colan S, Wohl ME, Specht L. Spinal fusion in Duchenne muscular dystrophy: a multidisciplinary approach. *Muscle Nerve*. 1992 May;15(5):604-14.
 16. Henderson K, **Sethna NF**, Berde CB. Continuous caudal anesthesia for inguinal hernia repair in former preterm infants. *Journal of Clinical Anesthesia*. 1993 Mar-Apr;5(2):129-33.
 17. Perillo M, **Sethna NF**, Berde CB. Intravenous isoproterenol as a marker for epidural test-dosing in children. *Anesthesia & Analgesia*. 1993 Jan;76(1):178-81.
 18. Soriano SG, **Sethna NF**, Scott RM. Anesthetic management of children with moyamoya syndrome. *Anesthesia & Analgesia*. 1993 Nov;77(5):1066-70.
 19. Collins JJ, Grier HE, **Sethna NF**, Wilder RT, Berde CB. Regional anesthesia for pain associated with terminal pediatric malignancy. *Pain*. 1996 Apr;65(1):63-9.
 20. Houck CS, Wilder RT, McDermott JS, **Sethna NF**, Berde CB. Safety of intravenous ketorolac therapy in children and cost savings with a unit dosing system. *Journal of Pediatrics*. 1996 Aug;129(2):292-6.
 21. Ririe DG, Ririe KL, **Sethna NF**, Fox L. Unexpected interaction of methylphenidate (Ritalin) with anaesthetic agents. *Journal of Paediatric Anaesthesia*. 1997;7(1):69-72.
 22. Dionne RA, Max MB, Gordon SM, Parada S, Sang C, Gracely RH, **Sethna, NF**, MacLean, DB. The substance P receptor antagonist CP-99,994 reduces acute postoperative pain. *Clinical Pharmacology*

- Therapeutics. 1998 Nov;64(5):562-8.
23. Kussman BD, **Sethna NF**. Pethidine-associated seizure in a healthy adolescent receiving pethidine for postoperative pain control. *Journal of Paediatric Anaesthesia*. 1998;8(4):349-52.
 24. Ririe DG, Shapiro F, **Sethna NF**. The response of patients with Duchenne's muscular dystrophy to neuromuscular blockade with vecuronium. *Anesthesiology*. 1998 Feb;88(2):351-4.
 25. **Sethna NF**, Liu M, Gracely R, Bennett GJ, Max MB. Analgesic and cognitive effects of intravenous ketamine-alfentanil combinations versus either drug alone after intradermal capsaicin in normal subjects. *Anesthesia & Analgesia*. 1998 Jun;86(6):1250-6.
 26. Park JM, Houck CS, **Sethna NF**, Sullivan LJ, Atala A, Borer JG, et al. Ketorolac suppresses postoperative bladder spasms after pediatric ureteral reimplantation. *Anesthesia & Analgesia*. 2000 Jul;91(1):11-5.
 27. **Sethna NF**, Sullivan L, Retik A, McGowan FX, Di Canzio J, Zurakowski D. Efficacy of simulated epinephrine-containing epidural test dose after intravenous atropine during isoflurane anesthesia in children. *Reg Anesth Pain Med*. 2000 Nov-Dec;25(6):566-72.
 28. McCann ME, **Sethna NF**, Mazoit JX, Sakamoto M, Rifai N, Hope T, et al. The pharmacokinetics of epidural ropivacaine in infants and young children. *Anesthesia Analgesia*. 2001 Oct;93(4):893-7.
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