

May 30, 2023

## **A. Identifying Data**

Name Elliot J. Krane, M.D.

## **B. Academic History**

### **Colleges and Universities Attended**

|           |  |
|-----------|--|
| 1974      | B.A., Reed College, Portland, Oregon   |
| 1976-1977 | Research Associate, Endocrinology, Cambridge University, Cambridge, United Kingdom |
| 1977      | M.D., University of Arizona School of Medicine, Tucson, Arizona                    |

### **Residency and Fellowship Training**

|           |  |
|-----------|--|
| 1978-1980 | Resident, Pediatrics, Massachusetts General Hospital, Boston, Massachusetts                          |
| 1980-1982 | Resident, Anesthesia, Massachusetts General Hospital, Boston, Massachusetts                          |
| 1982-1983 | Fellow, Anesthesia and Intensive Care, Children's Hospital and Medical Center, Boston, Massachusetts |

### **Board Certification**

|           |   |
|-----------|---|
| 1985-     | Diplomate and Certification, American Board of Anesthesiology         |
| 1985-     | Diplomate and Certification, American Board of Pediatrics             |
| 1990-1997 | Diplomate and Certification, Pediatric Critical Care Medicine         |
| 1996-     | Certificate in Advanced Cardiac Life Support (ACLS)                   |
| 1996-     | Certificate in Basic Life Support                                     |
| 1996-     | Certificate in Pediatric Advanced Life Support (PALS)                 |
| 1997-2002 | Recertification, Pediatric Critical Care Medicine                     |
| 1997-     | Recertification, American Board of Anesthesiology                     |
| 2009-     | Recertification, American Board of Anesthesiology, current            |
| 2012-     | Diplomate and Certification, American Board of Pain Medicine, current |
| 2013-     | Diplomate and Certification, Pediatric Anesthesiology, current        |

## **Licensure**

|           |  |
|-----------|--|
| 1978-1984 | Massachusetts Physician                                    |
| 1979-     | DEA Schedule 2-5 Certificate AK9136347                     |
| 1983-1995 | Washington Physician                                       |
| 1994-     | California Physician and Surgeon (G079586)                 |
| 2006-     | National Provider Identifier (1992860621)                  |
| 2008-     | California Fluoroscopy Operator and Supervisor (RHC167032) |

## **C. Employment**

### **Academic Appointments:**

|               |  |
|---------------|--|
| 1/1984-6/1989 | Adjunct Assistant Professor, Department of Pediatrics, University of Washington School of Medicine, Seattle, Washington            |
| 1/1984-6/1989 | Assistant Professor, Department of Anesthesiology, University of Washington School of Medicine, Seattle, Washington                |
| 6/1989-9/1994 | Adjunct Associate Professor, Department of Pediatrics, University of Washington School of Medicine, Seattle, Washington            |
| 6/1989-9/1994 | Associate Professor, Department of Anesthesia, University of Washington School of Medicine, Seattle, Washington                    |
| 9/1994-5/2021 | Professor, Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine, Stanford, California           |
| 9/1994-5/2021 | Professor, Pediatrics, Stanford University School of Medicine, Stanford, California  |
| 5/2021-       | Professor, Emeritus, Pediatrics, Stanford University School of Medicine, Stanford, California                                      |
| 5/2021-       | Professor, Emeritus, Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine, Stanford, California |

### **Other Appointments:**

|                |   |
|----------------|---|
| 7/1980-10/1981 | Staff Pediatrician, Department of Pediatrics, Cambridge Hospital, Cambridge, Massachusetts                        |
| 12/1983-9/1994 | Staff Anesthesiologist, Department of Anesthesiology, Children's Hospital and Medical Center, Seattle, Washington |
| 1/1985-9/1994  | Staff Anesthesiologist, Department of Anesthesiology, Harborview Medical Center, Seattle, Washington              |

## **D. Teaching and Clinical Care**

### **Hospital and Health Care Organization Service Responsibilities**

|           |   |
|-----------|---|
| 1983-1994 | Chairman, Resident Education Committee, Department of Anesthesiology, Children's Hospital and Medical Center  |
| 1985-1994 | Consultant, Children's Hospital and Medical Center Housestaff Manual, Seattle, Washington                     |
| 1987-1988 | Institutional Review Board, Seattle Children's Hospital and Medical Center                                    |
| 1987-1993 | Chair, Pharmacy and Therapeutics Committee, Seattle Children's Hospital and Medical Center                    |
| 1988-1994 | Steering Committee, Northwest Pediatric Critical Care Cooperative   |
| 1990-1994 | Chair, Ad Hoc Medication System Review Committee, Children's Hospital and Medical Center, Seattle, Washington |
| 1994-1996 | Pharmacy and Therapeutics Committee, Lucile Packard Children's Hospital                                       |
| 1994-1999 | Critical Care Committee, Lucile Packard Children's Hospital   |
| 1994-2000 | Ambulatory Care Committee, Lucile Packard Children's Hospital   |
| 1994-2001 | Credentials Committee, Lucile Packard Children's Hospital   |
| 1994-2003 | Chair, Post Anesthesia Care Committee, Lucile Packard Children's Hospital                                     |
| 1994-2003 | Medical Board of Directors, Lucile Packard Children's Hospital  |
| 1995-2003 | Chair, Sedation Committee, Lucile Packard Children's Hospital   |
| 1996-1998 | Physician-Hospital Integration Project: QA Committee, Packard Children's Hospital                             |
| 1996-1998 | Physician-Hospital Integration Project: Steering Committee, Packard Children's Hospital                       |
| 1996-2000 | Children's Hospital Child Health Research Fund Advisory Committee, Lucile Packard Children's Hospital         |
| 1997-2000 | Physician Practice Management Committee, Children Services  |
| 1997-2003 | Peer Review Committee, Lucile Salter Packard Children's Hospital  |
| 1998-2003 | Operations and Program Development Committee, Lucile Packard Children's Hospital                              |
| 2000-2003 | Budget Oversight Committee, Lucile Packard Children's Hospital  |
| 2000-2003 | Facility Steering Committee, Lucile Packard Children's Hospital   |

|           |   |
|-----------|---|
| 2001-     | Physician Hospital Integration Project, Steering Committee, Lucile Packard Children's Hospital        |
| 2004-2016 | P&T Committee, Lucile Packard Children's Hospital   |
| 2009-2018 | Anesthesia Safety Committee, Lucile Packard Children's Hospital                                       |
| 2009-     | Anesthesia Peer Review Committee, Lucile Packard Children's Hospital,                                 |
| 2009-     | Anesthesia Steering Committee, Lucile Packard Children's Hospital                                     |
| 2011-2017 | Quality Improvement Committee (QIC), Lucile Packard Children's Hospital                               |
| 2011-     | Analgesia Quality Committee (chair), Lucile Packard Children's Hospital                               |
| 2012-     | EPIC Ambulatory Physician Leadership Group, Lucile Packard Children's Hospital                        |
| 2020-     | Diversity, Equity & Inclusion - Workplace & Workforce Committee, Stanford Children's Health           |
| 2020-     | Diversity, Equity & Inclusion Committees: Workplace & Workforce Committee, Stanford Children's Health |

### **Major Administrative Responsibilities or Committee Assignments**

|           |  |
|-----------|--|
| 1985-1994 | Committee on Admissions, University of Washington School of Medicine   |
| 1985-1994 | Resident Selection Committee, Department of Anesthesiology, University of Washington School of Medicine  |
| 1986-1988 | Founder and Co-Chairman, 1st International Symposium on Pediatric Pain   |
| 1986-1994 | Clinical Competence Committee, Department of Anesthesiology, University of Washington School of Medicine   |
| 1987-1987 | Scientific Committee, San Diego Pediatric Critical Care Colloquium   |
| 1987-1994 | Financial Oversight Committee, Department of Anesthesiology, University of Washington School of Medicine   |
| 1988-1991 | Chairman, Scientific Committee, 2nd International Symposium on Pediatric Pain  |
| 1988-1991 | Steering Committee, 2nd International Symposium on Pediatric Pain  |
| 1990-1991 | Acting Director, Multidisciplinary Pain Program, Children's Hospital and Medical Center, Seattle, Washington   |
| 1990-1991 | Special Interest Group on Childhood Pain, International Association for the Study of Pain: Secretary   |
| 1990-1992 | Joint Council on In-Training Examinations: Written examination question author, American Board of Anesthesiology-American Society of Anesthesiologists |

1990-1994 Accident Poison Prevention Committee, Washington State Society of Pediatrics

1990-1994 Faculty Advisor, University of Washington School of Medicine

1991-1992 Medical Advisor, Health Care Assessment Team, Project Hope Foundation, Humanitarian Assistance Program to the Republics of Russia and Ukraine

1992-1994 Committee on Pediatric Anesthesia , American Society of Anesthesiologists

1992-1996 On-Site Consultant for Program Evaluation, Project Hope Foundation, Humanitarian Assistance Program to the Republics of Russia and Ukraine

1992-2006 Associate Board Examiner, American Board of Anesthesiology

1992-2006 Joint Council On In-Training Examinations: Written examination Editor, American Board of Anesthesiology—American Society of Anesthesiologists

1994-1995 Taskforce on the Management of Cancer Pain, American Society of Anesthesiologists

1994-2003 Chief, Department of Anesthesia and Pain Management, Lucile Packard Children’s Hospital at Stanford

1994-2003 Chief, Division of Pediatric Anesthesia, Stanford University, Department of Anesthesia

1994-2003 Hospital Operating Room Committee, Stanford University

1995-2000 Educational Programs Committee, California Society of Anesthesiologists

1996-2000 Medical Advisor, Project Hope and National Taiwan University Children’s Hospital

1996-2003 Department of Anesthesia Governance Committee, Stanford University

1996-2003 Education Committee, Society for Pediatric Anesthesia

1997-2000 Clinical Design Effort: Incentive Structure Committee, UCSF/Stanford University

1998-1998, 2000-2000 Annual Hawaiian Seminar: Program Director, California Society of Anesthesiologists

1998-2000 Chair, Sedation Committee, Stanford University Medical Center

1998-2000 Health Care Risk Management Committee, UC-Stanford

1998-2003 Faculty member, Stanford Brain Research Center

1999-2000 Medical Advisor, Project Hope and the Shanghai Children’s Hospital

1999-2000 Risk Management Latex Task Force, UCSF-Stanford

2001-2004 Surgical Team, Operation Rainbow, Esteli, Nicaragua

2003- Chief, Pain Management Service, Stanford Children’s Health and Chief, Department of Anesthesia and Pain Management, Lucile Packard Children’s Hospital

2005- Membership Committee, Society for Pediatric Anesthesia

2006-2010 Task Force to Update Practice Guidelines for Chronic Pain , American Society of Anesthesiologists

2007-2007 Founder and Director, Juvenile CRPS National Consensus Group

2007-2010 Task Force to Update Practice Guidelines for Cancer Pain, American Society of Anesthesiologists

2009-2009 Pediatric Analgesic Clinical Trials Workshop, U.S. Food and Drug Administration

2009- Steering Committee, Pediatric Regional Anesthesia Network (PRAN)

2011-2011 APS-CPDD Clinical Guidelines: Methadone Safety: Peer reviewer , Oregon Evidence-based Practice Center and American Pain Society

2011-2012 Harvard Medical School: Ad Hoc Committee of Evaluators Considering the Appointment of a Professorship 2011-2012, International Association for the Study of Pain Satellite Symposium on the Science and Clinical Medicine of Challenging Pediatric Pain Syndromes, World Congress of Pain, Milan 2012: Organizer, Pediatric Pain SIG

2011-2012 International Association for the Study of Pain Satellite Symposium on the Science and Clinical Medicine of Challenging Pediatric Pain Syndromes, World Congress of Pain, Milan

2011-2012 Organizer, Pediatric Pain SIG, World Congress of Pain, Milan

2011-2012 Organizer, Pediatric Pain SIG, International Association for the Study of Pain Satellite Symposium on the Science and Clinical Medicine of Challenging Pediatric Pain Syndromes, World Congress of Pain, Milan 2012

2011- Co-founder and President-Elect, Pediatric Research Network for Pain (PRN-Pain)

2012-2012 Organizer, Pediatric Pain SIG

2012-2014 Awards Committee, American Pain Society

2012-2020 Co-Chair, Pediatric Pain Research Consortium (PPRC), Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTION)

2012-2020 Executive Committee, Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTION), A Public-Private Partnership with the U.S. Food and Drug Administration

|               |   |
|---------------|---|
| 2013-2020     | Comprehensive and Evidence-Based Pain Taxonomy Development Project: Steering Committee, ACTION - American Pain Society (APS)  |
| 2016-2016     | Ad Hoc Committee of Evaluators Considering the Appointment of a Professorship, Harvard Medical School   |
| 2016-2016     | Forum for Advancing Science Education, Reed College, Portland, Oregon   |
| 9/2018-4/2021 | Presidential Task Force on Cannabis and Cannabinoid Analgesia, International Association for the Study of Pain (IASP)   |
| 2019-2019     | Invited Panelist on Applying Clinical Practice Guidelines to Prescribing Opioids for Acute Pain: A Workshop, National Academies of Sciences, Engineering and Medicine and the U.S. Food and Drug Administration |
| 2020-         | Advisor and mentor to the Women's Empowerment and Leadership Initiative (WELI), the Society for Pediatric Anesthesia.   |
| 7/2022-       | Volunteer physician, TeleHelp Україна (Ukraine)   |

## **E. Public and Professional Service**

### **Ad Hoc Reviewer**

|       |  |
|-------|--|
| 1985- | and others   |
| 1986- | Anesthesia and Analgesia   |
| 1988- | Anesthesiology   |
| 1998- | Journal of Pain  |
| 1985- | New England Journal of Medicine                                      |
| 1998- | Pain   |
| 1985- | Pediatrics   |
| 1996- | Regional Anesthesia and Pain Medicine (formerly Regional Anesthesia) |

### **Editorial Positions**

|                    |   |
|--------------------|---|
| 1994-1995          | Editor, Educational Synopses in Anesthesiology and Critical Care Medicine, The Online Journal of Anesthesiology |
| 2011-              | Editorial Board, Clinical Journal of Pain   |
| 3/2021-<br>12/2021 | Associate Editor, Frontiers in Pain Research (Pediatric Pain)   |

## **F. Post-Degree Honors and Awards**

|        |  |
|--------|--|
| 1972   | Dana Scholarship for Excellence in Humanities, Reed College  |
| 1974   | Phi Beta Kappa, Reed College   |
| 1976   | Medical Student Research Award, Arizona Medical Association  |
| 1977   | Alpha Omega Alpha, University of Arizona School of Medicine Honorary Society   |
| 1984   | Research Award: Cerebral blood flow in an infant animal model, American Society of Anesthesiologists                       |
| 1989   | Spinal anesthesia in ex-premature infants, Washington State Society of Anesthesiologists                                   |
| 1997   | Physician's Recognition Award, Anesthesiology, American Medical Association  |
| 1997   | Physician's Recognition Award, Pediatric Critical Care Medicine, American Medical Association                              |
| 1998   | Poster Award, Vienna International Congress 1998 on Anesthesiology and Perioperative Care                                  |
| 2007   | Initiation of a Juvenile CRPS National Consensus Group Grant, Mayday Fund  |
| 2010   | Fellowship: A Media and Policy Initiative, Mayday Fund: Pain & Society   |
| 2011   | Recognition of Service Excellence (R.O.S.E.) Award, Packard Children's Hospital at Stanford                                |
| 2012   | Jeffrey Lawson Award for Advocacy in Children's Pain Relief, American Pain Society   |
| 2015   | Ellis N. Cohen Achievement Award, Stanford University Department of Anesthesiology, Perioperative and Pain Medicine        |
| 2019   | Career Achievement Award, CRPS Forum   |
| 2019   | Recognition for Exemplary Care, Packard Children's Hospital at Stanford  |
| 3/2023 | 2023 Distinguished Career Award in Pediatric Pain, International Association for the Study of Pain - Pain in Childhood SIG |

## **G. Other Study and Research Opportunities**

### **Past:**

|               |   |
|---------------|---|
| 1/1986-1/1988 | Funder: NIH Biomedical Research Grant<br>Title: Comparison of caudal morphine caudal bupivacaine, and intravenous |
|---------------|---|

- morphine for postoperative pain relief in children  
Role: PI (PI: Elliot Krane, MD)
- 1/1987-1/1990 Funder: Diabetes Research and Education Foundation Grant  
Title: Prevention of brain swelling during diabetes ketoacidosis  
Role: PI (PI: Elliot Krane, MD)
- 1/1989-1/1991 Funder: NIH Biomedical Research Grant  
Title: Continuous Epidural Sufentanil in Children  
Role: PI (PI: Elliot Krane, MD)
- 1/1991-1/1992 Funder: Janssen Pharmaceuticals  
Title: Dose Response of Epidural Sufentanil in Children  
Role: PI (PI: Elliot Krane, MD)
- 1/1991-1/1992 Funder: NIH Biomedical Research Grant  
Title: Epidural Sufentanil in Children  
Role: PI (PI: Elliot Krane, MD)
- 4/2016-4/2016 Funder: Mayday Fund  
Title: Development of a consensus statement for the ethical management of pain in pediatric research subjects  
Role: Co-PI (Co-PI: Stefan Friedrichsdorf, MD)

**Present/Pending:**

- 9/2013- Funder: Mayday Fund  
Title: Development of a database for regional anesthesia provided to children with chronic pain  
Role: MPI (PI: Gary Walco, PhD)

**H. Bibliography**

**Peer-Reviewed Articles (79 total, 1 in press)**

1. Thomas AL, Krane EJ, Nathanielsz PW: Changes in the fetal thyroid axis following induction of premature parturition by low dose continuous intravascular cortisol infusion to the fetal sheep at 130 days gestation. *Endocrinology* 108:17-23, 1978.
2. Steven DH, Bass F, Jansen CJ, Krane EJ, Mallon K, Samuel CA, Thomas AL, Nathanielsz PW. Ultrastructural changes in the placenta of the ewe after fetal pituitary stalk section. *Q J Exp Physiol Cogn Med Sci.* 1978 Jul;63(3):221-229. PMID: 211539
3. Abel MH, Bass FG, Krane EJ, Thomas AL, Liggins GC. Pituitary stalk-section and some of its effects on endocrine function in the fetal lamb. *Q J Exp Physiol Cogn Med Sci.* 1978 Jul;63(3):211-219. PMID: 250110
4. Jansen CJM, Krane EJ, Thomas AL, Beck NFG, Lowe KC, Joyce P, Parr M, Nathanielsz PW: Continuous variability of fetal PO<sub>2</sub> in the chronically catheterized fetal sheep. *Am J Obstet Gynecol* 134:776-783, 1979.

5. Mathur H, Brown BL, Krane EJ, Thomas AL, Nathanielsz PW. Thyroid hormone relationships in the fetal and newborn lamb. *Biol Neonate*. 1980;37(3-4):138-141. PMID: 7362852
6. Krane EJ, Rockoff MA, Wallman JK, Wolfsdorf JI. Subclinical brain swelling in children during treatment of diabetic ketoacidosis. *N Engl J Med*. 1985 May 2;312(18):1147-1151. PMID: 3920521  
*(Accompanying editorial.)*
7. Krane EJ, Jacobson LE, Lynn AM, Parrot C, Tyler DC. Caudal morphine for postoperative analgesia in children: a comparison with caudal bupivacaine and intravenous morphine. *Anesth Analg*. 1987 Jul;66(7):647-653. PMID: 3605674
8. Krane EJ, Su JY. Comparison of the effects of halothane on newborn and adult rabbit myocardium. *Anesth Analg*. 1987 Dec;66(12):1240-1244. PMID: 3688496
9. Krane EJ: Delayed respiratory depression in a child after caudal epidural morphine. *Anesth Analg* 67:79-82, 1988.
10. Krane EJ, Tyler DC. Anesthesiology: Regional anesthesia in children. *West J Med*. 1988 Jul;149(1):74-75. PMID: 18750437, PMCID: PMC1026249
11. Krane EJ, Su JY. Comparison of the effects of halothane on skinned myocardial fibers from newborn and adult rabbit. I. Effects on contractile proteins. *Anesthesiology*. 1989 Jan;70(1):76-81. PMID: 2912319
12. Tyler DC, Krane EJ. Epidural opioids in children. *J Pediatr Surg*. 1989 May;24(5):469-473. PMID: 2567780
13. Krane EJ, Su JY. Comparison of the effects of halothane on skinned myocardial fibers from newborn and adult rabbit: II. Effects on sarcoplasmic reticulum. *Anesthesiology*. 1989 Jul;71(1):103-109. PMID: 2751121
14. Krane EJ, Tyler DC, Jacobson LE. The dose response of caudal morphine in children. *Anesthesiology*. 1989 Jul;71(1):48-52. PMID: 2751139
15. Haberkern CM, Tyler DC, Krane EJ. Postoperative pain management in children. *Mt Sinai J Med*. 1991 May;58(3):247-256. PMID: 1875963
16. Krane EJ, Bratton S: Diabetic ketoacidosis. *J Inten Care Med*, 7: 199-211, 1992.
17. Bratton SL, Krane EJ, Park JR, Burchette S. Clostridium Septicum infections in children. *Pediatr Infect Dis J*. 1992 Jul;11(7):569-575. PMID: 1528648
18. Mauch TJ, Bratton S, Myers T, Krane E, Gentry SR, Kashtan CE. Influenza B virus infection in pediatric solid organ transplant recipients. *Pediatrics*. 1994 Aug;94(2 Pt 1):225-229. PMID: 8036078
19. Krane EJ, Heller LB. The prevalence of phantom sensation and pain in pediatric amputees. *J Pain Symptom Manage*. 1995 Jan;10(1):21-29. PMID: 7714344

20. Krane EJ, Haberkern CM, Jacobson LE. Postoperative apnea, bradycardia, and oxygen desaturation in formerly premature infants: prospective comparison of spinal and general anesthesia. *Anesth Analg*. 1995 Jan;80(1):7-13. PMID: 7802303
21. Sectish TC, Krane EJ. Sedation for pediatric procedures. *West J Med*. 1995 Apr;162(4):357-358. PMID: 7747506, PMCID: PMC1022779
22. Lin Y, Krane EJ: Regional anesthesia, pain management in ambulatory pediatric patients. *Anes Clin NA* 14:803-816, 1996.
23. Skarsgard ED, Chitkara U, Krane EJ, Riley ET, Halamek L: The OOPS Procedure (Operation on Placental Support): In utero airway management of the fetus with prenatally diagnosed tracheal obstruction *J Ped Surgery* 31:826-8, 1996.
24. Practice guidelines for cancer pain management. A report by the American Society of Anesthesiologists Task Force on Pain Management, Cancer Pain Section. *Anesthesiology*. 1996 May;84(5):1243-1257. PMID: 8624021
25. Karl HW, Tyler DC, Krane EJ. Respiratory depression after low-dose caudal morphine. *Can J Anaesth*. 1996 Oct;43(10):1065-1067. PMID: 8896861
26. Salvatierra O, Alfrey E, Tanney DC, Mak R, Hammer GB, Krane EJ, So SKS, Lemley K, Dafoe DC, Orlandi PD, Page L, Conley SB: Pediatric renal transplants can be very successful. *Arch Surgery* 132:842-849, 1997.
27. Salvatierra O, Tanney D, Mak R, Alfrey E, Lemley K, Mackie F, So S, Hammer GB, Krane EJ, Conley SB: Pediatric renal transplantation, its challenges. *Transplantation Rev* 11:51-69, 1997.
28. Lin YC, Sentivany-Collins SK, Peterson KL, Boltz MG, Krane EJ. Outcomes after single injection caudal epidural versus continuous infusion epidural via caudal approach for postoperative analgesia in infants and children undergoing patent ductus arteriosus ligation. *Paediatr Anaesth*. 1999;9(2):139-143. PMID: 10189655
29. Boltz MG, Krane EJ. Combined regional and light general anesthesia: are the risks increased or minimized?. *Curr Opin Anaesthesiol*. 1999 Jun;12(3):321-323. PMID: 17013331
30. Hammer GB, Krane EJ. Anaesthesia for liver transplantation in children. *Paediatr Anaesth*. 2001 Jan;11(1):3-18. PMID: 11123726
31. Aram L, Krane EJ, Kozloski LJ, Yaster M. Tunneled epidural catheters for prolonged analgesia in pediatric patients. *Anesth Analg*. 2001 Jun;92(6):1432-1438. PMID: 11375820
32. Davis PJ, Galinkin J, McGowan FX, Lynn AM, Yaster M, Rabb MF, Krane EJ, Kurth CD, Blum RH, Maxwell L, Orr R, Szmuk P, Hechtman D, Edwards S, Henson LG. A randomized multicenter study of remifentanyl compared with halothane in neonates and infants undergoing pyloromyotomy. I. Emergence and recovery profiles. *Anesth Analg*. 2001 Dec;93(6):1380-6, table of contents. PMID: 11726411

33. Galinkin JL, Davis PJ, McGowan FX, Lynn AM, Rabb MF, Yaster M, Henson LG, Blum R, Hechtman D, Maxwell L, Szmuk P, Orr R, Krane EJ, Edwards S, Kurth CD. A randomized multicenter study of remifentanyl compared with halothane in neonates and infants undergoing pyloromyotomy. II. Perioperative breathing patterns in neonates and infants with pyloric stenosis. *Anesth Analg*. 2001 Dec;93(6):1387-92, table of contents. PMID: 11726412
34. Krane EJ. The ethics of regional anesthesia in anesthetized children. *Techniques in Regional Anesthesia and Pain Management* 6:90-4, 2002.
35. Hammer GB, Harrison TK, Vricella LA, Black MD, Krane EJ. Single lung ventilation in children using a new paediatric bronchial blocker. *Paediatr Anaesth*. 2002 Jan;12(1):69-72. PMID: 11849579
36. Ramamurthi RJ, Krane EJ. Current issues in pediatric regional anesthesia—local anesthetic pharmacology in pediatric anesthesia. *Technique in Regional Anesthesia and Pain Medicine* 6:229-234, 2007.
37. Golianu B, Krane E, Seybold J, Almgren C, Anand KJ. Non-pharmacological techniques for pain management in neonates. *Semin Perinatol*. 2007 Oct;31(5):318-322. PMID: 17905187
38. Voepel-Lewis T, Malviya S, Tait AR, Merkel S, Foster R, Krane EJ, Davis PJ. A comparison of the clinical utility of pain assessment tools for children with cognitive impairment. *Anesth Analg*. 2008 Jan;106(1):72-8, table of contents. PMID: 18165556, <https://doi.org/10.1213/01.ane.0000287680.21212.d0>
39. Dworkin RH, O'Connor AB, Audette J, Baron R, Gourlay GK, Haanpää ML, Kent JL, Krane EJ, LeBel AA, Levy RM, Mackey SC, Mayer J, Miaskowski C, Raja SN, Rice AS, Schmadler KE, Stacey B, Stanos S, Treede RD, Turk DC, Walco GA, Wells CD. Recommendations for the pharmacological management of neuropathic pain: an overview and literature update. *Mayo Clin Proc*. 2010 Mar;85(3 Suppl):S3-14. PMID: 20194146, PMCID: PMC2844007, <https://doi.org/10.4065/mcp.2009.0649>
40. Walco GA, Dworkin RH, Krane EJ, LeBel AA, Treede RD. Neuropathic pain in children: special considerations. *Mayo Clin Proc*. 2010 Mar;85(3 Suppl):S33-S41. PMID: 20194147, PMCID: PMC2844006, <https://doi.org/10.4065/mcp.2009.0647>
41. Berde CB, Walco GA, Krane EJ, Anand KJ, Aranda JV, Craig KD, Dampier CD, Finkel JC, Grabis M, Johnston C, Lantos J, Lebel A, Maxwell LG, McGrath P, Oberlander TF, Schanberg LE, Stevens B, Taddio A, von Baeyer CL, Yaster M, Zempsky WT. Pediatric Analgesic Clinical Trial Designs, Measures, and Extrapolation: Report of an FDA Scientific Workshop. *Pediatrics*. 2012 Feb;129(2):354-364. PMID: 22250028, PMCID: PMC9923552, <https://doi.org/10.1542/peds.2010-3591>
42. Polaner DM, Taenzer AH, Walker BJ, Bosenberg A, Krane EJ, Suresh S, Wolf C, Martin LD. Pediatric Regional Anesthesia Network (PRAN): a multi-institutional study of the use and incidence of complications of pediatric regional anesthesia. *Anesth Analg*. 2012 Dec;115(6):1353-1364. PMID: 22696610, <https://doi.org/10.1213/ANE.0b013e31825d9f4b>

43. Blankenberg FG, Kinsman SL, Cohen BH, Goris ML, Spicer KM, Perlman SL, Krane EJ, Kheifets V, Thoolen M, Miller G, Enns GM. Brain uptake of Tc99m-HMPAO correlates with clinical response to the novel redox modulating agent EPI-743 in patients with mitochondrial disease. *Mol Genet Metab.* 2012 Dec;107(4):690-699. PMID: 23084792, <https://doi.org/10.1016/j.ymgme.2012.09.023>
44. Meyer MJ, Krane EJ, Goldschneider KR, Klein NJ. Case report: Neurological complications associated with epidural analgesia in children: A Report of 4 cases of ambiguous etiologies. *Anesth Analg.* 2012 Dec;115(6):1365-1370. PMID: 23144440, <https://doi.org/10.1213/ANE.0b013e31826918b6>
45. Taenzer AH, Walker BJ, Bösenberg AT, Martin L, Suresh S, Polaner D, Wolf C, Krane EJ. Interscalene Blocks under General Anesthesia – Safe Practice? A report from the Pediatric Regional Anesthesia Network (PRAN). *Reg Anesth Pain Med* 39:502-505, 2014, DOI: 10.1097/AAP.000000000000102.
46. Taenzer AH, Walker BJ, Bosenberg AT, Martin L, Suresh S, Polaner DM, Wolf C, Krane EJ. Asleep versus awake: does it matter?: Pediatric regional block complications by patient state: a report from the Pediatric Regional Anesthesia Network. *Reg Anesth Pain Med.* 2014;39(4):279-283. PMID: 24918334, <https://doi.org/10.1097/AAP.000000000000102>
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#### **Abstracts (51 total)**

1. Abel MH, Krane EJ, Thomas AL, Nathanielsz PW: The use of synthetic thyrotropin releasing hormone to assess foetal pituitary function following section of the pituitary stalk of foetal sheep. *JEndocrinol.* 72:32P, 1977.
2. Abel MH, Krane EJ, Thomas AL: Plasma prolactin concentrations in the fetal sheep: Normal concentrations prior to delivery, the effect of cortisol induced delivery. *JEndocrinol.* 72:36P, 1977.

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4. Thomas AL, Horn C, Krane EJ, Bass FG, Nathanielsz PW: Cortisol-induced suppression of plasma thyroxine, elevation of tri-iodothyronine in the foetal sheep at 130-134 days gestation. *JEndocrinol.* 72:32P, 1977.
5. Beck NF, Carter MC, Jansen CA, Joyce PL, Krane EJ, Nathanielsz PW, Steer P, Thomas AL. A method for the quantitative assessment of uterine activity in the pregnant sheep [proceedings]. *J Physiol.* 1977 Oct;271(2):9P-910P. PMID: 926015
6. Krane EJ, Jansen CAM, Joyce P, Beck NFG, Thomas AL, Nathanielsz PW: Continuous monitoring of intravascular PO<sub>2</sub> in the chronically catheterized sheep foetus. *BrJObstetGynecol.* 85:77, 1978.
7. Krane EJ, Wallman J, Wolfsdorf J, Rockoff M: Cerebral edema complicating diabetic ketoacidosis. *Anesthesiology* 61:A121, 1984.
8. Jacobson LE, Krane EJ, Lynn AM, Parrot C, Tyler DC: Comparison of caudal morphine with caudal bupivacaine, conventional parenteral morphine therapy for postoperative pain control in children. *Anesthesiology* 65:A437, 1986.
9. Krane EJ, Su JY: Comparison of halothane-induced depression in newborn, adult rabbit ventricle. *Anesthesiology* 65:A427, 1986.
10. Krane EJ, Su JY: Effects of halothane on the function of sarcoplasmic reticulum in skinned myocardial fibers of newborn, adult rabbit. *Anesthesiology* 67:A437, 1986.
11. Krane EJ, Jacobson LE, Tyler DC: Caudal morphine in children: A comparison of three doses. *Anesthesiology* 69:A763, 1988.
12. Krane EJ, Su JY: Effects of halothane on the contractile proteins in skinned myocardial fibers of newborn, adult rabbit. *AnesthAnalg.* 67:S120, 1988.
13. Jacobson LE, Krane EJ, Pomietto M: Continuous epidural sufentanil for postoperative pain relief. *J Pain Symptom Manage.* 6:208, 1991.
14. Krane EJ, Haberkern CM, Jacobson LE: A comparison of spinal, general anesthesia in the former premature infant. *Anesthesiology* 75:A912, 1991.
15. Krane EJ, Heller LB, Pomietto ML: Incidence of phantom sensation, pain in pediatric amputees. *Anesthesiology* 75:A691, 1991.
16. Frank RS, Boltz MG, Sentivany SK, Krane EJ: Combined epidural-general anesthesia for the repair of atrial septal defects in children results in shorter ICU stays. *Anesthesiology,* 83:A1176, 1995.
17. Lin YC, Sentivany SK, Boltz MG, Krane EJ: Outcomes after single caudal injection versus continuous epidural infusion for postoperative analgesia in children undergoing patent ductus arteriosus ligation. *Anesthesiology,* 83:A1142, 1995.

18. Hammer GB, Rosner J, Krane EJ, Smith BM, Skarsgard ED, Brodsky JB: Single lung ventilation in pediatric patients. *Anesthesiology*, 85:A1093, 1996.
19. Salvatierra O, Alfrey EJ, Tanney DC, Mak R, Hammer GB, Krane EJ, So SKS, Lemley KV, Dafoe DC, Orlandi PD, Page L, Conley SB: Pediatric renal transplants can be very successful. Pacific Coast Surgical Association 68<sup>th</sup> Session, 1996.
20. Lin YC, Krane EJ: Comparison of continuous infusion of low dose bupivacaine with or without morphine for postoperative analgesia in neonates. *Anesthesia & Analgesia*, 84:S441, 1997.
21. Aram L, Krane EJ: Safety, efficacy of tunneled epidural catheters *Acta Anaesth Scand*, 42:264, 1998 (recipient of Poster Award, Vienna International Congress 1998 on Anesthesiology, Perioperative Care).
22. Galinkin JL, Kurth CD, Alexis RA, Davis PJ, McGowan FX, Yaster M, Krane EJ, Lynn A, Rabb M Henson, LG: The effect of remifentanil, halothane on postoperative breathing in neonates, infants undergoing pyloric stenosis repair. *Anesthesiology* 95: A1279 2000.
23. Wellis VG, Krane EJ, Lopez JR, Saleh MM: Effects of isoflurane, propofol on somatosensory evoked potentials during remifentanil anesthesia in children. *Anesthesiology* 95: A1301, 2000.
24. Krane E, Finkel B, Finkel J, Hammer G, Rodarte A, Rossberg M, Sarkis E, Schmitz M, Sher LD, Richards PT: ALGRX 3268 produces well-tolerated local analgesia within 1 to 3 minutes for venipuncture and peripheral venous cannulation procedures in children. Society for Pediatric Anesthesia Annual Meeting, Tampa, FL, 2006.
25. Krane E, Finkel B, Finkel J, Rodarte A, Rossberg M, Sarkis E, Schmitz M, Sher LD, Richards PT: ALGRX 3268 produces well-tolerated local analgesia within 1 to 3 minutes for venipuncture and peripheral venous cannulation procedures in children. Pediatric Academic Societies' Annual Meeting, San Francisco, 2006.
26. Krane E, Zempsky WT, Leong M: Tolerability of needlefree powder lidocaine delivery system in pediatric patients undergoing venipuncture or peripheral venous cannulation: the COMFORT- 003 and -004 trials. American College of Emergency Physicians Annual Meeting, San Francisco, 2007.
27. Taenzer A, Bosenberg A, Cravero J, Krane E, Martin L, Polaner DM, Suresh S: Regional Anesthesia in Children – Imaging Techniques. PRAN data from 1/2007 to 10/2008. Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, Jacksonville, FL, 2009.
28. Taenzer A, Bosenberg A, Cravero J, Krane E, Martin L, Polaner DM, Suresh S: Regional Anesthesia in Children – Imaging Techniques. PRAN data from 1/2007 to 10/2008. Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, Jacksonville, FL, 2009.
29. Taenzer A, Cravero J, Krane E, Martin L, Polaner DM, Suresh S: Localizing Techniques: Pediatric Regional Anesthesia Network (PRAN) data from 1/2007 to 10/2008. Society for Pediatric Anesthesia Annual Meeting, Jacksonville, FL, 2009.

30. Krane E, Larkin K, Golianu B, Gamble J: Pediatric complex regional pain syndrome associated with avascular necrosis of bone. The 8<sup>th</sup> International Symposium on Pediatric Pain, Acapulco, Mexico, 2009.
31. Krane E, Larkin K, Golianu B, Gamble J: Pediatric complex regional pain syndrome associated with avascular necrosis of bone. The Society for Pediatric Anesthesia Annual Meeting, Jacksonville, FL, 2009.
32. Krane E, Malviya S, DelPizzo K, Finkel J, Royal M: Pediatric Safety of Repeated Doses of Intravenous Acetaminophen. American Society of Regional Anesthesia and Pain Medicine Annual Meeting, Phoenix, AZ, 2009.
33. Krane, E, Golianu B, Larkin K, Almgren C, Sentivany-Collins S, Leon Guerrero A, Bhandari R: Inpatient interventional management of complex regional pain syndromes in children and adolescents. The 8<sup>th</sup> International Symposium on Pediatric Pain, Acapulco, Mexico, 2009.
34. Lee HH, Bosenberg A, Flack, S, Cravero J, Krane E, Martin L, Polaner DM, Suresh S, Taenzer A: Caudal block revisited: what are the risks? Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, Jacksonville, FL, 2009 .
35. Lee HH, Bosenberg A, Flack, S, Cravero J, Krane E, Martin L, Polaner DM, Suresh S, Taenzer A: Caudal block revisited: what are the risks? Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, Jacksonville, FL, 2009.
36. Lee HH, Bosenberg AT, Flack S, Martin L, Polaner DM, Cravero J, Krane E, Suresh S, Taenzer A: Caudal block revisited: What are the risks? Society for Pediatric Anesthesia Annual Meeting, Jacksonville, FL, 2009.
37. Polaner DM, Bosenberg A, Cravero J, Krane E, Martin L, Suresh S, Taenzer A: Preliminary data from the Pediatric Regional Anesthesia Network (PRAN): demographics, practice patterns and complications. Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, Jacksonville, FL, 2009.
38. Polaner DM, Cravero J, Krane E, Martin L, Suresh S, Taenzer A: Preliminary Data From The Pediatric Regional Anesthesia Network (PRAN): Demographics, Practice Patterns and Complications. Society for Pediatric Anesthesia Annual Meeting, Jacksonville, FL, 2009.
39. Hammer GB, Drover DR, Krane EJ, Cohane CA, Tingle M, Gallinkin J: Comparative opioid pharmacology after cardiac surgery—a multi-site, NIH-funded study. SPA/AAP Pediatric Anesthesiology 2010 Winter Meeting, San Antonio, Texas, 2010.
40. Polaner DM, Bosenberg A, Krane EJ, Martin L, Suresh S, Taenzer A, Wolf C, and the PRAN investigators: The incidence of positive test doses in pediatric regional blockade: Data from the Pediatric Regional Anesthesia Network (PRAN). International Congress of the Israel Society of Anesthesiologists, Tel Aviv, Israel, 2011.

41. Robinson TE, Newman B, Krane E, Goris M. Safety and feasibility of controlled ventilation infant CT scanning using recruitment & scan acquisition techniques. National Association for Cystic Fibrosis Conference, Long Beach, CA, 2011.
42. Taenzer A, Bosenberg AT, Krane EJ, Martin L, Polaner DM, Suresh S, and the investigators of the Pediatric Regional Anesthesia Network: Asleep vs. sedated vs. awake: Regional anesthetic complications by patient state at the time of blockade: A report from the Pediatric Regional Anesthesia Network (PRAN). Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, San Diego, CA, 2011.
43. Walker BJ, Bosenberg AT, Polaner DM, Krane E, Suresh S, Taenzer A, Lock C, Martin L and investigators of the Pediatric Regional Anesthesia Network: Neuraxial Blockade in Children: analysis of complications recorded over the first two years of the Pediatric Regional Anesthesia Network. Joint meeting of the Society for Pediatric Anesthesia and American Academy of Pediatrics Section on Anesthesiology and Pain Management, San Diego, CA, 2011.
44. Polaner DM, Bosenberg AT, Krane EJ, Martin L, Suresh S, Taenzer AH, Wolf C. The incidence of positive test doses in pediatric regional blockade: data from the Pediatric Regional Anesthesia Network (PRAN). Society for Pediatric Anesthesia, Tampa, 2012.
45. Robinson TE, Prais D, Yilma M, Goris ML, Krane E, Newman B. Early increased bronchial wall thickness (BWT) and bronchiectasis (B) CT scores are strongly associated with increased quantitative regional air trapping in young CF children. American Thoracic Society, San Francisco, 2012.
46. Edwards JF, Caruso TJ, Wall J, Bruzoni M, Krane E. A fortuitous diagnosis of a rare double tracheoesophageal fistula. Society for Pediatric Anesthesia, San Francisco, 2013.
47. Thomas J, Collier J, Gershon T, Krane E. Reestablishing school functioning in children with chronic pain: Multifaceted intervention in a pediatric pain rehabilitation program. 9<sup>th</sup> International Symposium on Pediatric Pain, Stockholm, Sweden, 2013.
48. Abstracts of the Society for Pediatric Radiology 56th Annual Meeting & Postgraduate Course. May 14-18, 2013. San Antonio, Texas, USA. *Pediatr Radiol.* 2013 May;43 Suppl 2:S209-S458. PMID: 23620887
49. Won AS, Tataru CA, Cojocar CA, Krane EJ, Bailenson JN, Niswonger S., Golianu B. A pilot study of virtual reality for the treatment of pediatric CRPS. Paper presentation at the International Communication Association's 65th Annual Conference, May 21-25, 2015, San Juan, Puerto Rico.
50. D'souza G, Seidel F, Krane E. Case report on management of a ventral CSF leak in the lumbar region in a pediatric patient resistant to standard management algorithms. 16th World Congress on Pain, Sep 26-30, 2016, Yokohama, Japan.
51. Griffin, A., Webb, W., Feinstein, A., Sokol, O., Parvathinathan, G., Mohan, K., Wagner, J., O'Day, M., Krane, E. (2022, March). Pain rehabilitation in the time of COVID-19: Use of telehealth for pediatric intensive interdisciplinary pain treatment. The International Symposium on Pediatric Pain, Auckland, New Zealand.

### Special Materials (11 total)

1. Krane EJ, Dalens BJ, Murat I, Murrell D. The safety of epidurals placed under general anesthesia. *Reg Anes Pain Med* 23:433-438, 1998.
2. Krane EJ: Spinal epidermoid tumors: Will a forgotten complication rise again? [editorial]. *Reg Anes Pain Med* 24:494-495, 1999.
3. Krane EJ: Cerebral edema, bicarbonate, and diabetic ketoacidosis. *AAP Grand Rounds* 5:34-35, 2001.
4. Krane EJ: Outcome in patients with diabetic ketoacidosis and cerebral edema. *AAP Grand Rounds* 9:63a-64a, 2003.
5. Krane EJ. Patient-Controlled Analgesia: proxy-controlled analgesia?. *Anesth Analg.* 2008 Jul;107(1):15-17. PMID: 18635462, <https://doi.org/10.1213/ane.0b013e31817532ae>
6. Walco GA, Krane EJ, Berde CB: Analgesic trials in children: safety, efficacy, and innovation. *Clinical Investigation* 2:547-549, 2012.
7. Krane EJ, Polaner D. The Safety and Effectiveness of Continuous Peripheral Nerve Blockade in Children. *Anesth Analg.* 2014 Mar;118(3):499-500. PMID: 24557094, <https://doi.org/10.1213/ANE.0000000000000110>
8. Krane EJ. Editorial Comment: Thoracic Paravertebral Blockade for the Management of Pain Associated with Cystic Fibrosis. *A A Case Rep.* 2015 Feb 1;4(3):33. PMID: 25642955, <https://doi.org/10.1213/XAA.0000000000000127>
9. Friedrichsdorf SJ, Sidman J, Krane EJ. Prevention and Treatment of Pain in Children: Toward a Paradigm Shift. *Otolaryngol Head Neck Surg.* 2016 May;154(5):804-805. PMID: 27130944, <https://doi.org/10.1177/0194599816636100>
10. Krane EJ, Weisman SJ, Walco GA. The National Opioid Epidemic and the Risk of Outpatient Opioids in Children. *Pediatrics.* 2018 Aug;142(2). PMID: 30012558, <https://doi.org/e20181623>
11. Dinh A, Berger A, Krane E. Analgesic Drug Development for Children: A History of Shortcomings Until Now. *J Pain Res.* 2021;14:867-870. PMID: 33833564, PMCID: PMC8020136, <https://doi.org/10.2147/JPR.S291594>

### Special Materials in French (2 total)

1. Krane EJ, Dalens BJ, Murat I, Murrell D: La sécurité de l'anesthésie péridurale réalisée sous anesthésie générale *Cahiers d'Anesthésiologie* 48:277-280, 1998.
2. Krane EJ, Dalens BJ, Murat I, Murrell D: La sécurité de l'anesthésie péridurale réalisée sous anesthésie générale *Annales Françaises d'Anesthésie et de Réanimation* 17:750-754, 1998.

Invited Presentations (233 presentations)

Local presentations (9 presentations)

- 2/1990 "Acute Pain - Biology, " "Pharmacology of Pain Management, " "Epidural Narcotics." Pediatric Pain, University of Washington CME Course, Seattle
- 10/1991 "Diabetic Ketoacidosis, " Grand Rounds, Children's Hospital and Medical Center, Seattle
- 4/1995 "Addiction, Tolerance, and Weaning from Opiates and Sedatives," Pediatric Pain Symposium, Lucile Salter Packard Children's Hospital at Stanford, Stanford University
- 4/1995 "Local Anesthesia, Regional Anesthesia, and Neuraxial Opiates in the Management of Pain in Children," Pediatric Pain Symposium, Lucile Salter Packard Children's Hospital at Stanford, Stanford University
- 5/1995 "Pain Management in Children," Alexian Brothers Hospital Grand Rounds, San Jose, California
- 5/2004 "Management of Acute Pain in Children", Pediatric Pain Management for the Pediatrician and Family Physician, Palo Alto, CA
- 6/2007 "Ambulatory Management of Childhood Pain", Lucile Packard Children's Hospital 15th Annual Pediatric Update, Stanford
- 11/2011 "Pain in the U.S.", Los Altos Morning Forum, Los Altos, CA, November 1, 2011
- 2/2018 "The Opioid Epidemic - What You Need to Know," Los Altos Rotary Club, Los Altos, CA

Regional presentations (35 presentations)

- 1/1985 Case Discussant. "Diabetic Ketoacidosis and Cerebral Edema.", Children's Orthopedic Hospital Grand Rounds
- 1/1985 "Diabetic Ketoacidosis and Brain Swelling", Northwest Pediatric Intensive Care Cooperative Annual Meeting, Seattle.
- 7/1985 "Invasive Monitoring in Pediatric Anesthesia" (workshop)., Washington State Society of Anesthesiologists Annual Meeting, Seattle
- 1/1986 "ECMO for ARDS.", Northwest Pediatric Critical Care Cooperative Annual Meeting, Seattle
- 4/1986 Case Discussant. "Reye's Syndrome.", Children's Hospital and Medical Center Grand Rounds
- 5/1986 "Pediatric Diabetic Ketoacidosis.", American Association of Critical Care Nurses (Northwest Washington Chapter), Seattle

- 1/1987 "Limb-ischemia Associated with Septicemia.", Washington Pediatric Critical Care Cooperative, Annual Meeting, Seattle
- 2/1987 Case Discussant. "Sepsis and Purpura Fulminans.", Children's Hospital and Medical Center Grand Rounds
- 7/1987 "Transplantation in Children - Impact on Society and the Individual.", Washington State Society of Anesthesiologists Annual Meeting, Seattle
- 12/1987 "Outpatient Pediatric Anesthesia.", Washington State Society of Anesthesiologists, Seattle
- 2/1988 Co-Chairman, Northwest Pediatric Critical Care Cooperative, Tenth Educational Symposia
- 7/1988 "Epidural Narcotics in Children", Washington State Society of Anesthesiologist Annual Meeting, Seattle, Washington
- 2/1992 "Early Management of Diabetic Ketoacidosis,", North Pacific Pediatric Society Annual Meeting, Seattle
- 8/1992 "Regional Anesthesia,", Washington State Society of Anesthesiologists, Annual Seafair Meeting, Seattle
- 4/1996 "Blocks, Epidurals, and Other High Tech Methods", Pediatric Pain: Children and Their Special Needs," Lucile Salter Packard Children's Hospital at Stanford, Stanford University
- 5/1997 "Clinical Update" (Panel Moderator), California Society of Anesthesiologists Annual Meeting, Monterey, California
- 5/1997 "Controversies in Pediatric Anesthesia-Case Discussions", California Society of Anesthesiologists Annual Meeting, Monterey, California
- 9/2000 "Unscrambling the Scrambled Heart: Anesthesia for Children with Congenital Heart Disease", Kaiser Permanente Department of Anesthesiology Annual Meeting, San Francisco
- 3/2002 "Pediatric Pain Management", University of California, Davis Department of Anesthesiology
- 6/2002 "Paradoxical Analgesia using Ultra-low Dose Opioid Antagonists", City of Hope Medical Center, Los Angeles
- 9/2002 "Paradoxical Analgesia using Ultra-low Dose Opioid Antagonists,", Stanford University School of Medicine, Otorhinolaryngology Department Grand Rounds
- 2/2006 Program Director, Pediatric and Adult Pain Management, Whistler, British Columbia, Canada
- 3/2006 "Sedation of the Pediatric Patient," Grand Rounds, St. Joseph's Hospital, Stockton, CA

- 9/2006 "Pain Management of the Child," Grand Rounds, Kaiser Permanente
- 1/2008 "Pain Management in Children", Salinas Valley Memorial Healthcare System
- 8/2010 "Pediatric Pain Management," , Department of Anesthesia Grand Rounds, Stanford University, Stanford, CA, August 30, 2010.
- 1/2012 "Chronic Pain in Children," John Muir Medical Center Department of Pediatrics Grand Rounds, Walnut Creek, CA, January 5, 2012
- 3/2012 "Pain Management in Pediatrics," Community Hospital Department of Pediatrics Grand Rounds, Monterey, CA, March 12, 2012.
- 4/2012 "Pain Management in Pediatrics," Dominican Hospital Department of Pediatrics Grand Rounds, Santa Cruz, CA, April 10, 2012
- 7/2014 "Pediatric Chronic Pain," Grand Rounds, Department of Emergency Medicine, Stanford University School of Medicine, Stanford, CA, July, 2014
- 8/2014 "Pain Management in Children and Adolescents," The Northern California Kaiser Permanente Medical Group, "Permanente Medicine: Pediatrics" Kaiser TV videoconference, August, 2014
- 12/2015 "CRPS," Department of Orthopaedic Surgery Grand Rounds, Stanford University School of Medicine, December, 2015
- 10/2017 "The Use of Opioids in Children: A Pro - Con Debate," Stanford University Department of Anesthesiology Grand Rounds, Stanford, CA, October, 2017
- 9/2021 "Pain Chronification," Grand Rounds, California Pacific Medical Center Department of Pediatrics, September, 2021
- 2/2022 "The Opioid Epidemic and Pediatrics," California Pacific Medical Center Department of Pediatrics, February, 2022

National presentations (108 presentations)

- 10/1986 Panel Discussant. "Safety Issues in Pediatric Anesthesia.", American Society of Anesthesiologist Annual Meeting, Las Vegas
- 10/1987 "Pain Therapy in Children: Consultant's Corner.", American Society of Anesthesiologists Annual Meeting, Seattle
- 4/1988 "Preoperative Evaluation of the Child.", Anesthesiology Review Course, San Francisco
- 12/1988 "Perioperative Management of the Type I Diabetic Child; DKA and the Surgical Emergency.", Forty-second Postgraduate Assembly, New York Society of Anesthesiologists, New York

- 4/1989 "Pediatric Regional Techniques.", Society for Ambulatory Anesthesia Fourth Annual Scientific Meeting, San Antonio, Texas
- 5/1989 "Epidural Opioids for Treatment of Pediatric Pain.", Texas Pediatric Anesthesia Study Group, Fort Worth, Texas
- 6/1989 "Neurologic Crisis in Diabetic Ketoacidosis.", American Association of Critical Care Nurses, Seattle, Washington
- 10/1989 "Caudal Anesthesia for Infants and Children.", Society for Pediatric Anesthesia Annual Meeting, New Orleans
- 10/1989 "Techniques for measurement and treatment of pain in children.", American Pain Society Eighth Annual Meeting, Phoenix
- 1990 "Pain in Children", American Society of Regional Anesthesia Panel, American Society of Anesthesiologists Annual Meeting, Las Vegas
- 10/1990 "Acute Pain Management - Current Practice of Epidural Analgesia", American Pain Society Ninth Annual Meeting, St.Louis
- 10/1990 "Consultant's Corner", American Society Anesthesiologists Annual Meeting, Las Vegas
- 5/1991 "Pain Management During and After Pediatric Ambulatory Surgery,", California Society of Anesthesiologists Annual Meeting, Anaheim, California
- 10/1991 "Regional Anesthesia for Pediatric Ambulatory Surgery", American Society of Regional Anesthesia Panel, American Society of Anesthesiologists Annual Meeting, San Francisco
- 10/1991 "Standards of Practice of Pediatric Regional Anesthesia", Society of Pediatric Anesthesia Annual Meeting, San Francisco
- 10/1992 "Patient Safety in Pediatric Pain Management", Symposium Chairman, American Pain Society Annual Meeting, San Diego
- 10/1992 "Sedation and Analgesia", Symposium, American Academy of Pediatrics Annual Meeting, San Francisco
- 5/1993 Anesthesia Annual Meeting, Seattle
- 11/1993 "Pediatric Pain Management", UCD Annual Pain Review Course, Napa, California
- 1994 "Recent Advances in the Pain Clinic--What's New in Pediatrics.", American Society of Regional
- 6/1994 "Neuropathic Pain", Third International Symposium of Pediatric Pain, Philadelphia

- 6/1994 "Practical Post-operative Analgesia: Controversies for 1994 and Beyond", Third International Symposium on Pediatric Pain, Philadelphia
- 10/1994 "Pediatric Clinical Forum", American Society of Anesthesiologists, San Francisco
- 10/1994 "Presentation of Cases in the Real World", Society for Ambulatory Anesthesia Panel, American Society of Anesthesiologists, San Francisco
- 10/1995 "Medical Care in the States of the Former Soviet Union", The Association for the International Development of Anesthesia, Annual Meeting, Atlanta
- 10/1995 "Regional Anesthesia for Children", ASA Refresher Course Lecture, American Society of Anesthesiologists, Atlanta
- 9/1996 "Combined Regional and General Anesthesia in Children: Effects on Outcome", Washington University Department of Anesthesiology, St. Louis, MO
- 10/1996 "Ambulatory Anesthesia and the Pediatric Patient", ASA Refresher Course Lecture, American Society of Anesthesiologists, New Orleans
- 10/1996 "Clinical Forum on Pediatric Anesthesia", Organizer and Moderator, American Society of Anesthesiologists, New Orleans
- 1/1997 "Problems and Pitfalls: Pediatric Regional Anesthesia", UCSD Anesthesia Update, San Diego
- 2/1997 "Caring for the Child with Complex Disease", California Society of Anesthesiologists 14<sup>th</sup> Annual Winter Seminar, Breckenridge, Colorado
- 2/1997 "Combined Regional/General Anesthesia in Children-Rationale, Patient Selection, and Techniques to Succeed", California Society of Anesthesiologists 14<sup>th</sup> Annual Winter Seminar, Breckenridge, Colorado
- 2/1997 "Diabetic Ketoacidosis and Osmolar Disorders", Society of Critical Care Medicine Annual Meeting, San Diego
- 2/1997 "Practicing Outside the OR-New Roles for the Pediatric Anesthesiologist", California Society of Anesthesiologists 14<sup>th</sup> Annual Winter Seminar, Breckenridge, Colorado
- 2/1997 "The Ambulatory Pediatric Case - Problems, Pitfalls and Solutions", California Society of Anesthesiologists 14<sup>th</sup> Annual Winter Seminar, Breckenridge, Colorado

- 1/1998 “Pain Control Routines for Neonates, Infants and Children”, 36<sup>th</sup> Clinical Conference in Pediatric Anesthesiology, Children’s Hospital Los Angeles
- 1/1998 “Pediatric Regional Analgesia-Tutorial and Hands-on Demonstration with Models”, 36<sup>th</sup> Clinical Conference in Pediatric Anesthesiology, Children’s Hospital Los Angeles
- 1/1998 “Staying Out of Trouble with Regional Nerve Blocks”, 36<sup>th</sup> Clinical Conference in Pediatric Anesthesiology, Children’s Hospital Los Angeles
- 2/1998 “Pediatric Pain Management: Opioids-IV, Oral, Rectal, Epidural, NSAIDS, pain assessment”, Annual Meeting, Idaho State Society of Anesthesiologists, Sun Valley, ID
- 2/1998 “Techniques and Complications for Regional Anesthesia in Pediatrics”, Annual Meeting, Idaho State Society of Anesthesiologists, Sun Valley, ID
- 10/1998 “Congenital Heart Disease in Children” , California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii
- 10/1998 “Control of Breathing, Apnea, Prematurity, and Anesthesia,” 7<sup>th</sup> Annual Meeting of the Japanese Society “Pain Management after Pediatric Trauma,” AAP Breakfast Panel, ASA Annual Meeting, Orlando, FL.
- 10/1998 “Pain Management Techniques for Children That Work” , California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii.
- 10/1998 “Problems and Pitfalls of Regional Anesthesia in Children” , California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii.
- 10/1998 “Sedation and Anesthesia of Children Outside the OR” , California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii.
- 11/1998 “Control of Breathing, Apnea, Prematurity, and Anesthesia”, Massachusetts General Hospital, Boston.
- 1/1999 “Management of a Child with Epidermolysis Bullosa”, 37<sup>th</sup> Clinical Conference in Pediatric Anesthesiology, Anesthesiology, Children’s Hospital Los Angeles.
- 1/1999 “Simple Regional Nerve Blocks in the Management of Childhood Fractures”, 37<sup>th</sup> Clinical Conference in Pediatric Anesthesiology, Anesthesiology, Children’s Hospital Los Angeles.

- 1/1999 “Workshop on Regional Anesthesia Techniques”, 37th Clinical Conference in Pediatric Anesthesiology, Anesthesiology, Children’s Hospital Los Angeles.
- 3/1999 “Caring for the Child with Complex Disease”, University of Wisconsin-Madison Medical School.
- 3/1999 “Pain Management Strategies for Children”, University of Wisconsin-Madison Medical School.
- 4/1999 “Inhalation and Total Intravenous Anesthesia in Children”, Bay Area Pediatric Anesthesia Consortium Annual Meeting, Stanford, California.
- 4/1999 “Managing the Child with Diabetes”, University of Pittsburgh-Children’s Hospital of Pittsburgh.
- 4/1999 “Pain Management Strategies for Children”, University of Pittsburgh-Children’s Hospital of Pittsburgh.
- 11/1999 “Managing the Child with Diabetes”, UC San Diego Department of Anesthesia
- 11/1999 “Pain Management Strategies for Children”, San Diego Society of Anesthesiologists
- 5/2000 “Managing the Child with Diabetes”, Loyola University Department of Anesthesiology
- 5/2000 “Pediatric Pain Management”, Loyola University Department of Anesthesiology
- 7/2000 “Anesthetic Management of the Diabetic Patient”, California State Society of Anesthesiologists Hawaiian Seminar, Honolulu
- 7/2000 “Congenital Heart Disease in Children”, California State Society of Anesthesiologists Hawaiian Seminar, Honolulu
- 7/2000 “Do’s and Don’ts of Regional Anesthesia in Children”, California State Society of Anesthesiologists Hawaiian Seminar, Honolulu.
- 7/2000 “Pain Management Techniques that Work for Children”, California State Society of Anesthesiologists Hawaiian Seminar, Honolulu
- 5/2001 “Perioperative Management of IDDM in Children”, Medical College of Wisconsin Department of Anesthesiology
- 5/2001 “Risks and Benefits of Pain Management Techniques”, Children’s Hospital of Wisconsin, Milwaukee
- 4/2002 “Regional Anesthesia in the Anesthetized Child”, 27<sup>th</sup> Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Chicago

- 3/2003 “Novel Analgesics and Drug Delivery for Childhood Pain”, Annual Meeting, American Pain Society, Chicago
- 11/2003 “Pediatric Pain Management”, Annual Meeting, American Society of Regional Anesthesia and Pain Management, San Diego
- 1/2004 “Non-cardiac Anesthesia for the Child with Congenital Heart Disease”, Department of Anesthesiology, University of New Mexico, Albuquerque, NM
- 1/2004 “Pain Management in Children”, Department of Anesthesiology Grand Rounds, University of New Mexico, Albuquerque, NM
- 8/2004 “Anesthesia for Children with Heart Disease” , Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii
- 8/2004 “Garden Variety Pediatric Anesthesia (T&A, M&T, Hernias): Best practices”, Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii
- 8/2004 “Practical Regional Anesthesia Techniques in Pediatric Patients”, Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii
- 8/2004 “The Preoperative Assessment of Children”, Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii
- 12/2004 “Do Infants Hurt? The Ontogeny of Nociception”, Pediatric and Adult Pain Management, Big Island, Hawaii
- 12/2004 Program Director, Pediatric and Adult Pain Management, Big Island, Hawaii
- 12/2004 “The Medical, Legal, and Economic Costs of Untreated Pain: An Interactive Audience—Panel Discussion”, Pediatric and Adult Pain Management, Big Island, Hawaii
- 12/2004 “What’s on the Horizon? Analgesic Drug Development”, Pediatric and Adult Pain Management, Big Island, Hawaii
- 4/2006 “Common Pediatric Regional Blocks” (Workshop), ASRA 2006 Annual Spring Meeting, Rancho\_Mirage, CA
- 4/2006 “ENT Blocks in Pediatrics” (Master Class), ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA
- 4/2006 “Pediatric Regional Anesthesia Techniques” (Workshop), ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA
- 4/2006 “Pediatric Regional Anesthesia Update” (Refresher Course), ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA, April, 2006.
- 9/2006 Management of Acute Pain in Children” , Kapiolani Children’s Hospital, Honolulu, HI

- 9/2006 Management of Chronic Pain in Children” , Kapiolani Children’s Hospital, Honolulu, HI
- 9/2006 “Overview of Pain in Children: Types, Assessment, Pharmacotherapy, Nonpharm Management” , Kapiolani Children’s Hospital, Honolulu, HI
- 10/2006 Moderator, Plenary Session, Society for Pediatric Anesthesia 2006 Annual Fall Meeting, Chicago, IL
- 10/2007 Panelist, Regional Analgesia versus Intravenous Analgesia for Pediatric Pain, American Society of Anesthesiologists 2007 Annual Meeting, San Francisco
- 5/2009 “Common Pediatric Anesthetic Cases: Best Practices,” NWAS Pediatric Anesthesia Review Course, San Francisco
- 5/2009 “Endocrine Abnormalities and Their Perioperative Management,” NWAS Pediatric Anesthesia Review Course, San Francisco
- 5/2009 “Pain Management for Infants and Children,” NWAS Pediatric Anesthesia Review Course, San Francisco
- 5/2009 “Regional Anesthesia for Infants and Children,” Northwest Anesthesia Seminars (NWAS) Pediatric Anesthesia Review Course, San Francisco
- 5/2009 “Use of Adjunct Drugs (sedatives, NSAIDs, alpha-1 blockers),” NWAS Pediatric Anesthesia Review Course, San Francisco
- 11/2009 “Neuropathic Pain in Children and Adolescents” , 12th International Conference on the Mechanisms and Treatment of Neuropathic Pain (The University of Rochester School of Medicine & Dentistry and The International Association for the Study of Pain (IASP) Neuropathic Pain Special Interest Group), San Francisco, CA
- 10/2010 “Epidural Anesthesia: Awake or Asleep?” , Panel on Pediatric Anesthesia, American Society of Anesthesiologists Annual Meeting, San Diego, CA
- 11/2012 “Biomedical Ethics in Pediatric Research” , Purdue Pharmaceuticals Investigators’ Meeting, Atlanta, GA
- 1/2013 “Models for Analgesic Trials in Children”, ACTION Pediatric Pain Research Consortium Meeting, Clinical Trials for Analgesic Medications for Acute Pain in Infants, Children, and Adolescents.
- 5/2013 “Pediatric Regional Anesthesia, the Good, the Bad, and the Ugly” , 2<sup>nd</sup> Annual Robert M. Smith Memorial Lecture, Pittsburgh Children’s Hospital

- 10/2013 “Complications of Spinal Anesthesia in a Newborn” , Panel on Pediatric Regional Anesthesia, American Society of Anesthesiology Annual Meeting, San Francisco, CA
- 10/2014 “Headache Management in Children: Is it Evidence or Bias?” , American Society of Anesthesiology Annual Meeting, LA
- 5/2015 “Pharmacotherapy and Clinical Trials in Pediatrics” , 10th International Symposium on Pediatric Pain Education Day, Seattle, WA
- 6/2015 “Pain Registries: Developing Pediatric Chronic Pain Clinical Research Infrastructure” , 10th International Symposium on Pediatric Pain Education Day, Seattle, WA
- 3/2017 “The Opioid Epidemic, a View from the Inside” , Keynote Speech, APhA (American Pharmacists Association) Annual Meeting & Exposition, San Francisco
- 5/2017 “ADE Deep Dive - Webinar on Opioid Use” , (<http://tinyurl.com/kusoj24>). US Department Health and Human Services, CMS Partnership for Patients
- 7/2017 “Adverse Drug Events: Understanding Misconceptions About Opioid Abuse and Key Strategies to Adopt for Opioid Safety,”, Washington State Hospital Association and Alaska State Hospital and Nursing Home Association Webinar
- 11/2017 “The Science of Chronic Pain” , Keynote Address, Navy SEAL Foundation Impact Forum 2017, San Diego.
- 3/2018 “Medical Marijuana: The Pro Argument” , American Pain Society Annual Scientific Meeting, Anaheim, CA.
- 12/2018 “Opioids, Children and the National Opioid Crisis” , The 1st Dan And Mary Tarcea Guest Lecturer, Seattle Children’s Hospital and the University of Washington.
- 2/2019 “Applying Clinical Practice Guidelines to Prescribing Opioids for Acute Pain:A Workshop” , Panelist for the Committee on Evidence-based Clinical Practice Guidelines for Prescribing Opioids for Acute Pain, The National Academies of Sciences, Engineering, Medicine.
- 2/2020 “The Treatment of Chronic Pain in Childhood Cancer and Survivorship” , Invited talk to National Academies of Science, Engineering and Medicine Committee on Childhood Cancers and Disability, Washington DC.

International presentations (81 presentations)

1988, 1991 Department of Anesthesia, University of Oregon Health Sciences, Portland, Oregon

7/1988 "Caudal Morphine in Children: A comparison of three doses." First International Symposium on Pediatric Pain, Seattle, Washington

6/1989 "Malignant Hyperthermia," Congress on Clinical Specialties and Related Basic Sciences, Bogota, Columbia

6/1989 "Neurologic Complications of Ketoacidosis," Congress on Clinical Specialties and Related Basic Sciences, Bogota, Columbia

6/1989 "Pain Therapy for Children," Congress on Clinical Specialties and Related Basic Sciences, Bogota, Columbia

6/1989 "Status Epilepticus," "Pathophysiology of Intracranial Emergencies," Congress on Clinical Specialties and Related Basic Sciences, Bogota, Columbia

1991 Department of Anesthesiology, University of South Alabama, Mobile, Alabama

1993 Department of Anesthesia, University of Maryland, Baltimore, Maryland

1996 Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO

1997 Department of Anesthesiology, Pontificia Universidad Catolica de Chile, Santiago, Chile

11/1997 "Future Perspectives in Pediatric Pain Management", Pontificia Universidad Catolica de Chile, Santiago, Chile

11/1997 "Neuropathic Pain", Pontificia Universidad Catolica de Chile, Santiago, Chile

11/1997 "PCA and Nurse Controlled Analgesia in Children", Pontificia Universidad Catolica de Chile, Santiago, Chile

11/1997 "Regional Anesthesia and Analgesia in Children", Pontificia Universidad Catolica de Chile, Santiago, Chile

11/1997 "The Organization of a Pediatric Pain Service", Pontificia Universidad Catolica de Chile, Santiago, Chile

1998 Department of Anaesthesia, Harvard Medical School, Massachusetts General Hospital, Boston, MA

1998 Department of Anesthesiology, Hirosaki University, Hirosaki, Japan

9/1998 "Anesthesia Outside the Operating Room: New Roles for the Pediatric Anesthesiologist", National Children's Hospital, Tokyo, Japan.

9/1998 "The FDA Approval Process," Terumo Corporation, Tokyo, Japan.

9/1998 of Pediatric Anesthesia, Sendai, Japan.

1999 Department of Anesthesia, University of Wisconsin, Madison, Wisconsin

1999 Department of Anesthesiology, University of California at San Diego

1999 Departments of Pediatrics & Anesthesiology, University of Pittsburgh and the Pittsburgh Children's Hospital, Pittsburgh, Pennsylvania

2000 Department of Anesthesiology, Stritch School of Medicine, Loyola University, Chicago

5/2000 "Advances in the Treatment of Pain", CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000.

5/2000 "Organizing a Pain Treatment Program", CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil

5/2000 "Physiopathology and Treatment of Pain in Infants", CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000

5/2000 "Regional Anesthesia in Children", CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000.

2001 Department of Anesthesiology, Medical College of Wisconsin, Milwaukee

2001 Department of Anesthesiology, Children's Hospital of Wisconsin, Milwaukee

4/2001 "Clinical Cases in Pediatrics", South Brazil Society of Anesthesiologists, Londrina, Brazil

4/2001 "Pediatric Ambulatory Anesthesia", South Brazil Society of Anesthesiologists, Londrina, Brazil

4/2001 "Regional Anesthesia in Children", South Brazil Society of Anesthesiologists, Londrina, Brazil

4/2001 "The Pediatric Pain Clinic", Japanese Society of Anesthesiologists 48<sup>th</sup> Annual Meeting, Kobe, Japan

5/2001 "Ethics and Risks of Regional Anesthesia in the Pediatric Patient under General Anesthesia", 26<sup>th</sup> Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Vancouver, B.C., Canada

5/2001 "Problem Based Learning Session", 26<sup>th</sup> Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Vancouver, B.C., Canada

2002 Department of Anesthesiology, University of California, Davis

- 2003 Visiting Professor, University of Ottawa and the Children’s Hospital of Eastern Ontario (CHEOP)
- 2004 University of New Mexico, Albuquerque, N.M.
- 11/2004 “Non-steroidal Anti-inflammatory Drugs in Children”, Sociedade Brasileira de Anestesiologia (Brazilian Society of Anesthesiologists) Annual Congress, Curitiba, Brazil
- 11/2004 “Pediatric Neuropathic Pain and Its Treatment”, Sociedade Brasileira de Anestesiologia (Brazilian Society of Anesthesiologists) Annual Congress, Curitiba, Brazil
- 2/2005 “Do Infants Hurt? The Ontogeny of Nociception”, Pediatric and Adult Pain Management, Whistler, British Columbia, Canada
- 2/2005 “The Medical, Legal, and Economic Costs of Untreated Pain: An Interactive Audience—Panel Discussion”, Whistler, British Columbia, Canada
- 2/2005 “What’s on the Horizon? Analgesic Drug Development”, Pediatric and Adult Pain Management, Whistler, British Columbia, Canada
- 10/2005 “Chronic Pain Management in Children”, SIMBIDOR 2005, São Paulo, Brazil, October, 2005.
- 10/2005 “Neuraxial Blocks in Children: Indications and Contraindications”, SIMBIDOR 2005, São Paulo, Brazil
- 10/2005 “Neurolytic and Sympathetic Blocks in Children: Myths and Facts”, SIMBIDOR 2005, São Paulo, Brazil
- 10/2005 “Specificity in Acute Pain Management in Children”, Simpósio Brasileiro e Encontro Internacional sobre Dor Centro de Convenções Rebouças (SIMBIDOR 2005), São Paulo, Brazil
- 2006 Pfizer Visiting Professor, Pain Management, Departments of Anesthesiology and Pediatrics, University of Hawaii, and the Kapiolani Children’s Hospital, Honolulu
- 2007 Department of Anesthesiology, Erasmus Hospital, Brussels, Belgium
- 10/2007 “Ultrasound Guided Pediatric Regional Anesthesia”, Erasmus Hospital, Brussels, Belgium
- 2009 Department of Anaesthesia, Intensive Care Medicine and Pain Therapy, Medical University of Vienna, Austria
- 9/2009 “Pediatric Pain Management in the New Millenium”, Plenary Address to the AIC Austrian Society of Anesthesiologists (ÖGARI), Vienna, Austria

- 9/2009 “The Management of Chronic Pain in Children”, Medical University of Vienna, Department of Anaesthesia, Intensive Care Medicine and Pain Therapy Grand Rounds, Vienna, Austria
- 10/2009 “The Management of Chronic Pain in Children”, Pediatric Anesthesia Meeting in Honor of Dr. Avishag Kadari, Hadassah Hospital, Jerusalem, Israel.
- 8/2010 “Anestesia Regional en Pediatría”, Anestesia en el Bicentenario, Departamento de Anestesiología, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile, August 6, 2010.
- 8/2010 “Dolor Pediátrico,” “Anestesia Regional en Pediatría”, Anestesia en el Bicentenario, Departamento de Anestesiología, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile, August 6, 2010.
- 8/2010 “Sedación para Pprocedimientos Diagnósticos en Niños. “Anestesia Regional en Pediatría”, Anestesia en el Bicentenario, Departamento de Anestesiología, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile, August 7, 2010.
- 2011 Montreal Children’s Hospital and McGill University, Montreal, Quebec, Canada (the 4th Annual Peter & Arthur Sheridan Memorial Lecture)
- 3/2011 “Biomedical Ethics in Pediatric Research”, Purdue Pharmaceuticals International Investigators’ Meeting, Prague, Czech Republic, March 31, 2011
- 3/2011 “Pain Is a Disease” , TED 2011, Long Beach, CA, March 1, 2011  
[http://www.ted.com/talks/elliott\\_krane\\_the\\_mystery\\_of\\_chronic\\_pain.html](http://www.ted.com/talks/elliott_krane_the_mystery_of_chronic_pain.html).
- 4/2011 “Oxycodone: Clinical Experience in Children”, Purdue Pharmaceuticals International Investigators’ Meeting, Prague, Czech Republic, April 1, 2011.
- 9/2011 “The Mysteries and Challenges of Chronic Pain in Children”, the 4th Annual Peter & Arthur Sheridan Memorial Lecture, McGill University, Montreal, Quebec, September 22, 2011
- 9/2011 “The Mysteries and Challenges of Chronic Pain in Children”, the 4th Annual Peter & Arthur Sheridan Memorial Lecture, McGill University, Montreal, Quebec, September 22, 2011.
- 2012 Royal Children’s Hospital, University of Melbourne, Melbourne, Australia
- 11/2012 “Consequences of Untreated Pain in Neonates”, Society of Paediatric Anaesthesia in New Zealand and Australia (SPANZA) Annual Meeting, Melbourne, Australia, November 22, 2012.

- 11/2012 “Multimodal Analgesia”, Royal Children's Hospital, Melbourne, Australia, November 22, 2012.
- 11/2012 “Opioid Induced Hyperalgesia”, Society of Paediatric Anaesthesia in New Zealand and Australia (SPANZA) Annual Meeting, Melbourne, Australia, November 23, 2012.
- 2013 2nd Annual Robert M. Smith Memorial Lecturer, Children’s Hospital of Pittsburgh, University of Pittsburgh
- 6/2013 “How to Build a Bridge: Communicating from Bench to Bedside”, 9<sup>th</sup> International Symposium on Pediatric Pain, Stockholm, Sweden, June 20, 2013.
- 6/2013 “Public - private partnerships: Structuring PRN-Pain to Fulfill Multiple Functions”, 9<sup>th</sup> International Symposium on Pediatric Pain, Stockholm, Sweden, June 19, 2013.
- 11/2016 “Challenging Pain Syndromes”, 3rd Congress on Paediatric Palliative Care - a Global Gathering, Rome, Italy
- 2018 The 1st Dan and Mary Tarcea Visiting Professor, Seattle Children’s Hospital, University of Washington
- 6/2019 “Opioids – a balance between pain treatment and misuse and diversion”, Keynote Plenary Lecture: 12th International Symposium on Pediatric Pain, Basel, Switzerland
- 2020 Department of A, Calgary Children’s Hospital and the University of Alberta
- 2/2020 “The Intersection of Psychology and Pain: Conversion Disorder, Fictitious Pain, and Pain Amplification,” Annual Pediatric Pain Conference, Alberta Children’s Hospital, Calgary, Alberta, Canada
- 2/2020 “The Opioid Crisis: Its Roots and Its Future,” Grand Rounds / Visiting Professor, Alberta Children’s Hospital, Calgary, Alberta, Canada
- 2/2020 “When Pain is a Disease”, Annual Pediatric Pain Conference, Alberta Children’s Hospital, Calgary, Alberta, Canada
- 1/2023 Rachael Waugh Memorial Lecture, the Children’s Hospital of Eastern Ontario (CHEOP)
- 10/2023 Plenary Lecture, International Symposium on Pediatric Pain, 2023 meeting, Halifax, Nova Scotia, Canada.