

Elliot J. Krane, M.D.
Curriculum Vitae

Date of Birth May 1, 1953
Birthplace Philadelphia, Pennsylvania
Office Department of Anesthesiology, Perioperative and Pain Medicine
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Education

1974 B.A., Reed College, Portland, Oregon
1977 M.D., University of Arizona School of Medicine, Tucson, Arizona
1976-1977 Research Associate in Endocrinology, Cambridge University, Cambridge, United Kingdom
1978-1980 Resident in Pediatrics, Massachusetts General Hospital, Boston, Massachusetts
1980-1982 Resident in Anesthesia, Massachusetts General Hospital, Boston, Massachusetts
1982-1983 Fellow in Anesthesia and Intensive Care, Children's Hospital and Medical Center, Boston, Massachusetts

Academic Appointments

1994-present Professor of Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine, Stanford, California
1994-present Professor of Pediatrics, Stanford University School of Medicine, Stanford, California
1989-1994 Associate Professor, Department of Anesthesia, University of Washington School of Medicine, Seattle, Washington
1989-1994 Adjunct Associate Professor, Department of Pediatrics, University of Washington School of Medicine, Seattle, Washington
1984-1989 Assistant Professor, Department of Anesthesiology, University of Washington School of Medicine, Seattle, Washington
1984-1989 Adjunct Assistant Professor, Department of Pediatrics, University of Washington School of Medicine, Seattle, Washington

Board Certification

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

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Professional Societies

American Academy of Pain Medicine (AAPM)
American Society of Anesthesiologists (ASA)
Association of University Anesthesiologists (AUP)
California Society of Anesthesiologists (CSA)
Fellow, American Academy of Pediatrics (FAAP)
International Anesthesia Research Society (IARS)
International Association for the Study of Pain (IASP)
 Special Interest Groups: Childhood Pain, Neuropathic Pain
Pediatric Research Network for Pain (PRN-Pain))
Society for Pediatric Anesthesiology (SPA)
American Pain Society (until 2019) (APS)
Society of Critical Care Medicine (until 1998) (SCCM)
King County Medical Society (until 1994) (KCMS)
Society of Neurological Anesthesia and Neurological Supportive Care (until 1994) (SNANSC)
Washington State Medical Association (until 1994) (WSMA)
Washington State Society of Anesthesiologists (until 1994) (WSSA)

Honors and Awards

2019	Stanford Children's Hospital Recognition for Exemplary Care
2019	CRPS Forum: Career Achievement Award
2019	Society for Pediatric Anesthesiology: Nominated, Lifetime Achievement Award
2016	Mayday Fund: Development of a consensus statement for the ethical management of pain in pediatric research subjects (Co-Investigator with Stefan Friedrichsdorf, MD, University of Minnesota)
2015	Stanford Department of Anesthesiology, Perioperative and Pain Medicine: Ellis N. Cohen Achievement Award
2013	Mayday Fund: Development of a database for regional anesthesia provided to children with chronic pain
2012	American Pain Society: Jeffrey Lawson Award for Advocacy in Children's Pain Relief
2011	Endo Pharmaceuticals, Inc.: An Open-Label, Non-randomized, Multicenter, Ascending Dose by Age, Single- and Multiple-Dose Evaluation of the Effectiveness, Safety, and Tolerability of Oral Liquid Oxymorphone HCl Immediate-Release Oral Liquid for Acute Postoperative Pain in Pediatric Subjects
2011	Lucile Packard Children's Hospital: Recognition of Service Excellence (R.O.S.E.) Award

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- 2011 Purdue Pharmaceuticals, Inc.:
An Open-label, Multicenter Study of the Safety of Twice Daily Oxycodone Hydrochloride Controlled-release Tablets in Opioid Experienced Children from Ages 6 to 16 Years Old, Inclusive, with Moderate to Severe Malignant and/or Nonmalignant Pain Requiring Opioid Analgesics
- 2010 Mayday Pain & Society Fellowship:
A Media and Policy Initiative
- 2008 Endo Pharmaceuticals, Inc.:
An Open-Label, Ascending, Two-Part, Single- and Multiple-Dose Evaluation of the Safety, Pharmacokinetics, and Effectiveness of Oxymorphone for Acute Postoperative Pain in Pediatric Subjects"
- 2008 Endo Pharmaceuticals, Inc.:
An Open-Label Safety and Tolerability Study of Immediate-Release and Extended-Release Oxymorphone in Opioid-Tolerant Pediatric Subjects With Chronic Pain
- 2008 Cadence Pharmaceuticals, Inc.:
A Phase III Multi-Center, Open-Label, Prospective, Repeated Dose, Multi-Day Study of the Safety and Efficacy of Intravenous Acetaminophen in Pediatric Inpatients
- 2007 Mayday Fund:
Initiation of a Juvenile CRPS National Consensus Group
- 2006 SkyePharma, Inc.:
A Phase 2/3, Multicenter, Randomized, Double-Blind, Dose-Finding and Dose-Confirmation Study to Evaluate the Safety and Efficacy of a Single Epidural Dose of SKY0401 (Morphine Sulfate Extended-Release Liposome Injection) in the Management of Post-Operative Pain in Pediatric Subjects Undergoing Lower Abdominal (Below the Umbilicus), Genitourinary, or Lower Extremity Orthopedic Surgery
- 2005 Corgentech Corporation:
A Phase III, Randomized, Double-Blind, Placebo-Controlled Study to Confirm the Effectiveness and Safety of ALGRX 3268 In Pediatric Subjects
- 2005 Cephalon, Inc.:
A Double-Blind, Placebo-Comparison Study to Evaluate the Efficacy and Safety of ACTIQ® (Oral Transmucosal Fentanyl Citrate [OTFC®]) Treatment for Opioid-Tolerant Children and Adolescents With Breakthrough Pain
- 1998 Poster Award, Vienna International Congress 1998 on Anesthesiology and Perioperative Care
- 1998 Neurex Corporation:
An Evaluation of Corlopam® for the Induction of Deliberate Hypotension in Pediatric and Adult Patients Undergoing Craniofacial Surgery, and Major Orthopedic Surgery
- 1997 American Medical Association:
Physician's Recognition Award, Pediatric Critical Care Medicine
- 1997 American Medical Association:
Physician's Recognition Award, Anesthesiology
- 1997 Glaxo Wellcome Pharmaceuticals:
A Randomized Study of Ultiva versus Halothane in Neonates Undergoing Surgery for Pyloric Stenosis
- 1996 Roche Pharmaceuticals:
The Efficacy and Safety of Three Single Oral Doses of Midazolam Syrup in Pediatric Patients
- 1991 Janssen Pharmaceuticals:
Dose Response of Epidural Sufentanil in Children

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1991	NIH Biomedical Research Grant: Epidural Sufentanil in Children
1989	Washington State Society of Anesthesiologists: Spinal anesthesia in ex-premature infants
1989	NIH Biomedical Research Grant: Continuous epidural sufentanil in children
1987	Diabetes Research and Education Foundation Grant: Prevention of brain swelling during diabetes ketoacidosis
1986	NIH Biomedical Research Grant: Comparison of caudal morphine caudal bupivacaine, and intravenous morphine for postoperative pain relief in children
1984	American Society of Anesthesiologists: Cerebral blood flow in an infant animal model
1977	Alpha Omega Alpha: Honorary Society
1976	Arizona Medical Association Award
1974	Phi Beta Kappa Honorary Society
1972	Dana Scholarship: Excellence in Humanities

Special International Responsibilities

2018-present	International Association for the Study of Pain (IASP) Presidential Task Force on Cannabis and Cannabinoids
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
2005-present	Membership Committee, Society for Pediatric Anesthesia
2001-2004	Operation Rainbow Surgical Team, Esteli, Nicaragua
1999-2000	Medical Advisor, Project Hope and the Shanghai Children's Hospital
1996-2000	Medical Advisor, Project Hope and National Taiwan University Children's Hospital.
1992	Consultant for Program Evaluation, Project Hope Foundation, Humanitarian Assistance Program
1992	Medical Advisor, Health Care Assessment Team, Republics of Russia and Ukraine, Project Hope Foundation, Humanitarian Assistance Program
1991	Medical Advisor, Health Care Assessment Team, Republic of Russia, USSR, Project Hope Foundation, Humanitarian Assistance Program
1990-1991	Secretary, Special Interest Group on Childhood Pain, International Association for the Study of Pain
1988-1991	Chairman, Scientific Committee, 2nd International Symposium on Pediatric Pain, Montreal, Quebec, 1991
1988-1991	Steering Committee, 2nd International Symposium on Pediatric Pain, Montreal, Quebec, 1991
1986-1988	Founder and Co-Chairman, 1st International Symposium on Pediatric Pain, Seattle, Washington, 1988.

Special National Responsibilities

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
2016	Forum for Advancing Science Education, Reed College, Portland, Oregon

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2016	Ad Hoc Committee of Evaluators Considering the Appointment of a Professorship, Harvard Medical School
2013-present	Steering Committee, ACTTION - American Pain Society (APS) Comprehensive and Evidence-Based Pain Taxonomy Development Project
2012-present	Co-Chair, Pediatric Pain Research Consortium (PPRC), Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTTION)
2012-present	Executive Committee, Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTTION), A Public-Private Partnership with the U.S. Food and Drug Administration
2012-2014	Awards Committee, American Pain Society
2011-present	Co-founder and President-Elect, Pediatric Research Network for Pain (PRN-Pain)
2011	Peer reviewer, Oregon Evidence-based Practice Center and American Pain Society: APS-CPDD Clinical Guidelines: Methadone Safety
2009-present	Steering Committee, Pediatric Regional Anesthesia Network (PRAN)
2009	U.S. Food and Drug Administration Pediatric Analgesic Clinical Trials Workshop
2007	Founder and Director, Juvenile CRPS National Consensus Group Meeting
2007-2010	American Society of Anesthesiologists Task Force to Update Practice Guidelines for Cancer Pain
2006-2010	American Society of Anesthesiologists Task Force to Update Practice Guidelines for Chronic Pain
2000	Program Director, California Society of Anesthesiologists Annual Hawaiian Seminar
1998	Program Director, California Society of Anesthesiologists Annual Hawaiian Seminar
1996-2003	Society for Pediatric Anesthesia, Education Committee
1994-1995	American Society of Anesthesiologists Taskforce on the Management of Cancer Pain
1992-1994	Committee on Pediatric Anesthesia, American Society of Anesthesiologists
1992-2006	Editor, American Board of Anesthesiology—American Society of Anesthesiologists Joint Council On In-Training Examinations
1992-2006	Associate Board Examiner, American Board of Anesthesiology
1990-1992	Question writer, American Board of Anesthesiology-American Society of Anesthesiologists Joint Council on In-Training Examinations
1987	Scientific Committee, San Diego Pediatric Critical Care Colloquium

Editorial Boards and Regular Journal Peer Review

2011-present	Editorial Board, Clinical Journal of Pain
1994-1995	Editor, Educational Synopses in Anesthesiology and Critical Care Medicine, The Online Journal of Anesthesiology
Ad Hoc Reviewer	Anesthesia and Analgesia, Anesthesiology, New England Journal of Medicine, Pediatrics, Pain, Journal of Pain, and others.

Special Local Responsibilities

2012-present	Packard Children's Hospital, EPIC Ambulatory Physician Leadership Group
2011-present	Packard Children's Hospital, Analgesia Quality Committee (chair)

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2011-2017	Packard Children's Hospital, Quality Improvement Committee
2009-present	Packard Children's Hospital, Anesthesia Steering Committee
2009-2018	Packard Children's Hospital, Anesthesia Safety Committee
2009-present	Packard Children's Hospital, Anesthesia Peer Review Committee
2004-2016	Packard Children's Hospital, P&T Committee
2001-present	Packard Children's Hospital Physician Hospital Integration Project, Steering Committee
2000-2003	Packard Children's Hospital Facility Steering Committee
2000-2003	Packard Children's Hospital Budget Oversight Committee
1999-2000	UCSF-Stanford Risk Management Latex Task Force
1998-2003	LPCH Operations and Program Development Committee
1998-2000	UC-Stanford Health Care Risk Management Committee
1998-2000	Chair, Sedation Committee, Stanford University Medical Center
1998-2003	Faculty member, Stanford Brain Research Center
1997-2003	Peer Review Committee, Lucile Salter Packard Children's Hospital
1997-2000	UCSF/Stanford University Clinical Design Effort: Incentive Structure Committee
1997-2000	Children Services Physician Practice Management Committee
1996-1998	Packard Children's Hospital Physician-Hospital Integration Project: QA Committee
1996-1998	Packard Children's Hospital Physician-Hospital Integration Project: Steering Committee
1996-2003	Stanford University Department of Anesthesia Governance Committee
1996-2000	Packard Children's Hospital Child Health Research Fund Advisory Committee
1995-2000	Educational Programs Committee, California Society of Anesthesiologists
1995-2003	Chair, Packard Children's Hospital Sedation Committee
1994-2003	Stanford University Hospital Operating Room Committee
1994-2003	Chair, Packard Children's Hospital Post Anesthesia Care Committee
1994-2003	Packard Children's Hospital Medical Board of Directors
1994-2001	Packard Children's Hospital Credentials Committee
1994-2000	Packard Children's Hospital Ambulatory Care Committee
1994-1999	Packard Children's Hospital Critical Care Committee
1994-1996	Packard Children's Hospital Pharmacy and Therapeutics Committee
1990-1994	Chair, Ad Hoc Medication System Review Committee, Children's Hospital and Medical Center, Seattle, Washington
1990-1994	Faculty Advisor, University of Washington School of Medicine
1990-1994	Accident Poison Prevention Committee, Washington State Society of Pediatrics
1988-1994	Steering Committee, Northwest Pediatric Critical Care Cooperative
1987-1994	Financial Oversight Committee, Department of Anesthesiology, University of Washington School of Medicine
1987-1993	Chair, Pharmacy and Therapeutics Committee, Children's Hospital and Medical Center, Seattle, Washington
1987-1988	Institutional Review Board, Children's Hospital and Medical Center
1986-1994	Clinical Competence Committee, Department of Anesthesiology, University of Washington School of Medicine

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1985-1994 Consultant, Children's Hospital and Medical Center Housestaff Manual, Seattle, Washington
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
1983-1994 Chairman, Resident Education Committee, Department of Anesthesiology, Children's Hospital and Medical Center

Hospital Positions Held

1994-present Director, Pediatric Pain Management, Stanford Children's Health and the Lucile Packard Children's Hospital
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
1988-1994 Founder and Co-Director, Multidisciplinary Pain Program, Children's Hospital and Medical Center, Seattle, Washington
1990-1991 Acting Director, Multidisciplinary Pain Program, Children's Hospital and Medical Center, Seattle, Washington
1985-1994 Staff Anesthesiologist, Harborview Medical Center, Seattle, Washington
1983-1994 Staff Anesthesiologist, Children's Hospital and Medical Center, Seattle, Washington
1980-1981 Staff Pediatrician, Cambridge Hospital, Cambridge, Massachusetts

Visiting Professorships

2020 Calgary Children's Hospital and the University of Alberta Department of A
2018 The 1st Dan and Mary Tarcea Visiting Professor, Seattle Children's Hospital, University of Washington
2013 2nd Annual Robert M. Smith Memorial Lecturer, Children's Hospital of Pittsburgh, University of Pittsburgh
2012 Royal Children's Hospital, University of Melbourne, Melbourne, Australia
2011 Montreal Children's Hospital and McGill University, Montreal, Quebec, Canada (the 4th Annual Peter & Arthur Sheridan Memorial Lecture)
2009 Department of Anaesthesia, Intensive Care Medicine and Pain Therapy, Medical University of Vienna, Austria
2007 Department of Anesthesiology, Erasmus Hospital, Brussels, Belgium
2006 Pfizer Visiting Professor in Pain Management, Departments of Anesthesiology and Pediatrics, University of Hawaii, and the Kapiolani Children's Hospital, Honolulu
2004 University of New Mexico, Albuquerque, N.M.
2002 Department of Anesthesiology, University of California, Davis
2001 Department of Anesthesiology, Medical College of Wisconsin, Milwaukee
2001 Department of Anesthesiology, Children's Hospital of Wisconsin, Milwaukee
2000 Department of Anesthesiology, Stritch School of Medicine, Loyola University, Chicago
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
1999 Department of Anesthesia, University of Wisconsin, Madison, Wisconsin

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1998	Department of Anaesthesia, Harvard Medical School, Massachusetts General Hospital, Boston, MA
1998	Department of Anesthesiology, Hirosaki University, Hirosaki, Japan
1997	Department of Anesthesiology, Pontificia Universidad Catolica de Chile, Santiago, Chile
1996	Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO
1993	Department of Anesthesia, University of Maryland, Baltimore, Maryland
1991	Department of Anesthesia, University of Oregon Health Sciences, Portland, Oregon
1991	Department of Anesthesiology, University of South Alabama, Mobile, Alabama
1988	Department of Anesthesia, University of Oregon Health Sciences, Portland, Oregon

Medical Licensure and Certification

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

Patents

13/041,387	Indwelling Nerve Block Catheters
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Industry Experience

2003-2012	Scientific Advisory Board, Pain Therapeutics, Inc. (unreimbursed)
2015-present	Scientific and Clinical Advisory Boards, Expanesthetics, Inc. (unreimbursed)

Industry and Government Consulting

Abbott Pharmaceuticals	Janssen Pharmaceuticals
Acclarent, Inc.	Johnson & Johnson, Inc.
Alza Corporation	King Pharmaceuticals
Artificial Muscle, Inc.	Mallinckrodt, Inc.
Astra Zeneca	Medical Board of California
Boehringer Ingelheim GmbH	Pfizer Pharmaceuticals
Bristol-Myers Squibb	Purdue Pharmaceuticals
Cadence Pharmaceuticals	Stanford Research Institute (SRI)
Cephalon, Inc.	The Medicines Company
Cipher Pharmaceuticals	Triple Ring Technology
Depomed	U.S. Food & Drug Administration
Edison Pharmaceuticals	Vibrynt, Inc.
Endo Pharmaceuticals	Westface, Inc.

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Expanesthetics, Inc.
Grünenthal-GmgH

Wex Pharmaceuticals

Journal Articles

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. Nathanielsz PW, Abel MH, Bass F, [Krane EJ](#), Thomas AL, Liggins, GC: Pituitary stalk-section, some of its effects on endocrine function in the fetal lamb. *QJExpPhysiology* 63:211-219, 1978.
3. Steven DH, Bass F, Jansen CJM, [Krane EJ](#), Mallon K, Samuel CA, Thomas AL, Nathanielsz, PW: Ultrastructural changes in the placenta of the ewe after fetal pituitary stalk section. *QJExpPhysiology* 63:221- 229, 1978.
4. Jansen CJM, [Krane EJ](#), Thomas AL, Beck NFG, Lowe KC, Joyce P, Parr M, Nathanielsz PW: Continuous variability of fetal PO₂ in the chronically catheterized fetal sheep. *AmJObstetGynecol* 134:776-783, 1979.
5. Mathur H, Brown BL, [Krane EJ](#), Thomas AL, Nathanielsz PW: Thyroid hormone relationships in the fetal, newborn lamb. *BiolNeonate* 37:138-144, 1980.
6. [Krane EJ](#), Rockoff MA: Pediatric neuroanesthesia. *Seminars in Anesthesia* 3:117-126 1984.
7. [Krane EJ](#), Rockoff MA, Wallman JK, Wolfsdorf, JI: Subclinical brain swelling in children during treatment of diabetic ketoacidosis. *N Eng J Med* 312:1147-1151, 1985. (*Accompanying editorial.*)
8. [Krane EJ](#), Jacobson LE, Lynn AM, Parrot C, Tyler DC: Caudal morphine for postoperative analgesia in children: A comparison with caudal bupivacaine, intravenous morphine. *Anesth Analg*. 66:647-653, 1987.
9. [Krane EJ](#): Diabetic ketoacidosis: Biochemistry, physiology, treatment, prevention. *Pediatr Clin No Am* 34:935-960, 1987.
10. [Krane EJ](#), Su JY: Comparison of the effects of halothane on newborn, adult rabbit myocardium. *Anesth Analg* 66:1240-1244, 1987.
11. [Krane EJ](#): Delayed respiratory depression in a child after caudal epidural morphine. *Anesth Analg* 67:79-82, 1988.
12. [Krane EJ](#), Tyler DC: Regional anesthesia in children. *West J Med* 149:74-75, 1988.
13. [Krane EJ](#), Su JY: Comparison of the effects of halothane on skinned myocardial fibers from newborn, adult rabbit: I. Effects on contractile proteins. *Anesthesiology* 70:76-81, 1989.
14. Tyler DC, [Krane EJ](#): Postoperative pain management in children. *Anesth CI No Am* 7:155-170, 1989.
15. Tyler DC, [Krane EJ](#): Epidural opioids in children. *J Pediatr Surg* 24:469-473, 1989.
16. [Krane EJ](#), Tyler DC, Jacobson LE: Dose response of caudal morphine in children. *Anesthesiology* 71:48-52, 1989.
17. [Krane EJ](#), Su JY: Comparison of the effects of halothane on skinned myocardial fibers from newborn, adult rabbit: II. Effects on sarcoplasmic reticulum. *Anesthesiology* 71:103-109, 1989.
18. Haberkern CM, Tyler DC, [Krane EJ](#): Postoperative pain management in children. *Mt Sinai J Med* 58:247-256, 1991.
19. [Krane EJ](#), Bratton S: Diabetic ketoacidosis. *J Inten Care Med*, 7: 199-211, 1992.

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20. Bratton SL, Krane EJ, Park JR, Burchette S: Clostridium Septicum infections in children. *Pediatr Infect Dis* 11:569-575, 1992.
21. Krane EJ: Postoperative pain treatment. *Current Opinion in Anesthesiology* 5:398-400, 1992.
22. Mauch TJ, Bratton SL, Myers T, Krane EJ, Gentry SR, Kashtan CE: Influenza B virus infection in pediatric solid organ transplant recipients. *Pediatrics* 94: 225-229, 1994.
23. Krane EJ, Haberkern CH, Jacobson LE: Postoperative apnea, bradycardia, oxygen desaturation in formerly premature infants: Prospective comparison of spinal, general anesthesia. *Anesth Analg* 80: 7-14, 1995.
24. Heller LB, Krane EJ: The prevalence of phantom sensation, pain in pediatric amputees. *J Pain Symptom Management* 10: 21-29, 1995.
25. Sectish TC, Krane EJ: Sedation for pediatric procedures. *Western J Medicine* 162:357-8, 1995.
26. Ferrante F Michael, Bedder MD, Caplan RA, Chang H, Connis RT, Harrison P, Jamison RN, Krane EJ, Nedeljkovic S, Patt R, Portnoy RK: Practice guidelines for cancer pain management: A report by the American Society of Anesthesiologists Task Force on Pain Management, Cancer Pain Section. *Anesthesiology* 84:1243-57, 1996.
27. 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 Surg* 31:826-8, 1996.
28. Lin Y, Krane EJ: Regional anesthesia for the pediatric outpatient. *ASA Refresher Courses in Anesthesia* 24: 163-175, 1996.
29. Karl HW, Tyler DC, Krane EJ: Respiratory depression after low-dose caudal morphine. *Can J Anaesth* 43: 1065-7, 1996.
30. Krane E: Diabetic ketoacidosis, cerebral edema *PedsCCM: The Pediatric Critical Care Website*, <http://pedscm.wustl.edu/FILE-CABINET/Metab/DKA-CEdema.html>, 1996.
31. Lin Y, Krane EJ: Regional anesthesia, pain management in ambulatory pediatric patients. *Anes Clin NA* 14:803-816, 1996.
32. 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.
33. 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.
34. Boltz MG, Krane EJ: Combined regional, light general anesthesia: are the risks increased or minimized?. *Current Opinions in Anaesthesiology* 12: 321-323, 1999.
35. Lin Y-C, 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, children undergoing patent ductus arteriosus ligation. *Paed Anaes* 9:139-143, 1999.
36. Golianu B, Krane EJ, Galloway KS, Yaster M. Pediatric acute pain management. *Ped Clin NA* 47: 559-588, 2000.
37. Hammer GB, Krane EJ: Anaesthesia for liver transplantation in children. *Paed Anaes* 11:3-18, 2001.
38. Aram L, Krane EJ, Kozloski LJ, Yaster M: Tunneled epidural catheters for prolonged analgesia in pediatric patients. *Anesth Analg* 92:1432-1438, 2001.

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39. 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, infants undergoing pyloromyotomy I Emergence, recovery profiles. *Anesth Analg* 93: 1370-2, 2001.
40. Galinikin J, Davis PJ, McGowan FX, Lynn AM, Rabb RF, Yaster M, Henson LG, 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* 93 1387-92, 2001.
41. Hammer GB, Harrison TK, Vricella LA, Black MD, [Krane EJ](#). Single lung ventilation in children using a new paediatric bronchial blocker. *Paediatric Anaesthesia* 12:69-72, 2002.
42. [Krane EJ](#). The ethics of regional anesthesia in anesthetized children. *Techniques in Regional Anesthesia and Pain Management* 6:90-4, 2002.
43. Golianu B, Krane E, Seybold J, Almgren C, Anand KJS. Non-pharmacologic techniques for pain management in neonates. *Seminars in Perinatology* 31:318-22, 2007.
44. 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.
45. Voepel-Lewis T, Malviya S, Tait AR, Merkel S, Foster R, [Krane EJ](#): Comparison of the Clinical Utility of Pain Assessment Tools for Children with Cognitive Impairment. *Anesth Analg* 106:72-78, 2008.
46. Dworkin RH, O'Connor AB, Audette J, Baron R, Gourlay G, Haanpää ML, Kent JL, [Krane EJ](#), LeBel AA, Levy RM, Mackey SC, Mayer J, Miaskowski C, Raja SN, Rice ASC, Schmader KE, Stacey B, Stanos S, Treede RD, Turk DC, Walco GA, Wells CD. Recommendations for the pharmacologic management of neuropathic pain: an overview and literature update. *Mayo Clinic Proc* 85:S3-S14, 2010.
47. Walco G, Dworkin RH, [Krane EJ](#), LeBel AA, Treede RD. Neuropathic pain in children: special considerations. *Mayo Clinic Proc* 85:S33-S41, 2010.
48. Berde CB, Walco G, [Krane EJ](#), Anand KJS, 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* 129:1–11, 2012.
49. Polaner D, Bosenberg A, [Krane E](#), Suresh S, Taenzer A, Wolf C, Martin L. Pediatric Regional Anesthesia Network (PRAN): a multi-institutional study of the use and incidence of complications of pediatric regional anesthesia. *Anesthesia & Analgesia* 115:1353-1364, 2012.
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22. Galinkin JL, Kurth CD, Alexis RA, Davis PJ, McGowan FX, Yaster M, Krane EJ, Lynn A, Rabb M Henson, LG: The effect of remifentanyl, halothane on postoperative breathing in neonates, infants undergoing pyloric stenosis repair. *Anesthesiology* 95: A1279 2000.

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23. Wellis VG, Krane EJ, Lopez JR, Saleh MM: Effects of isoflurane, propofol on somatosensory evoked potentials during remifentanyl 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. Malviya S, Voepel-Lewis T, Tait AR, Foster R, Krane E: Comparison of the clinical utility of recently described tools for pain assessment in children with cognitive impairment. Society for Pediatric Anesthesia Annual Meeting, Tampa, FL, 2006.
26. 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.
27. Malviya S, Voepel-Lewis T, Tait AR, Foster R, Krane E: Comparison of the clinical utility of pain assessment for children with cognitive impairment. *Anesthesiology* 105: A1352, 2006.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. Krane E, Larkin K, Golianu B, Gamble J: Pediatric complex regional pain syndrome associated with avascular necrosis of bone. The 8th International Symposium on Pediatric Pain, Acapulco, Mexico, 2009.
35. 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 8th International Symposium on Pediatric Pain, Acapulco, Mexico, 2009.
36. 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.

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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. 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.
39. 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 .
40. 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.
41. 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.
42. 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.
43. 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.
44. 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.
45. 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.
46. Newman B, Krane E, Robinson TE: Chest CT in children, Anesthesia and Atelectasis. Society for Pediatric Radiology, San Francisco, 2012.
47. 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.
48. 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.
49. 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.

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50. Thomas J, Collier J, Gershon T, Krane E. Reestablishing school functioning in children with chronic pain: Multifaceted intervention in a pediatric pain rehabilitation program. 9th International Symposium on Pediatric Pain, Stockholm, Sweden, 2013.
51. Won AS, Tataru CA, Cojocaru 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.
52. 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.

INVITED PRESENTATIONS

1984

1. "Invasive Monitoring in Pediatric Anesthesia" (workshop). Washington State Society of Anesthesiologists Annual Meeting, Seattle, July 1985.

1985

2. "Diabetic Ketoacidosis and Brain Swelling." Northwest Pediatric Intensive Care Cooperative Annual Meeting, Seattle, January 1985.
3. Case Discussant. "Diabetic Ketoacidosis and Cerebral Edema." Children's Orthopedic Hospital Grand Rounds, January 1985.

1986

4. "ECMO for ARDS." Northwest Pediatric Critical Care Cooperative Annual Meeting, Seattle, January 1986.
5. Case Discussant. "Reye's Syndrome." Children's Hospital and Medical Center Grand Rounds, April 1986.
6. "Pediatric Diabetic Ketoacidosis." American Association of Critical Care Nurses (Northwest Washington Chapter), Seattle, May 1986.
7. Panel Discussant. "Safety Issues in Pediatric Anesthesia." American Society of Anesthesiologist Annual Meeting, Las Vegas, October 1986.

1987

8. Case Discussant. "Sepsis and Purpura Fulminans." Children's Hospital and Medical Center Grand Rounds, February 1987.
9. "Limb-ischemia Associated with Septicemia." Washington Pediatric Critical Care Cooperative, Annual Meeting, Seattle, January 1987.
10. "Transplantation in Children - Impact on Society and the Individual." Washington State Society of Anesthesiologists Annual Meeting, Seattle, July 1987.
11. "Pain Therapy in Children: Consultant's Corner." American Society of Anesthesiologists Annual Meeting, Seattle, October 1987.
12. "Outpatient Pediatric Anesthesia." Washington State Society of Anesthesiologists, Seattle, December 1987.

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1988

13. Co-Chairman, Northwest Pediatric Critical Care Cooperative, Tenth Educational Symposia, February 1988.
14. "Preoperative Evaluation of the Child." Anesthesiology Review Course, San Francisco, April 1988.
15. "Caudal Morphine in Children: A comparison of three doses." First International Symposium on Pediatric Pain, Seattle, Washington, July 1988.
16. "Epidural Narcotics in Children." Washington State Society of Anesthesiologist Annual Meeting, Seattle, Washington, July 1988.
17. "Perioperative Management of the Type I Diabetic Child; DKA and the Surgical Emergency." Forty-second Postgraduate Assembly, New York Society of Anesthesiologists, New York, December 1988.

1989

18. "Pediatric Regional Techniques." Society for Ambulatory Anesthesia Fourth Annual Scientific Meeting, San Antonio, Texas, April 1989.
19. "Epidural Opioids for Treatment of Pediatric Pain." Texas Pediatric Anesthesia Study Group, Fort Worth, Texas, May 1989.
20. "Malignant Hyperthermia, " "Pathophysiology of Intracranial Emergencies, " "Status Epilepticus, " "Neurologic Complications of Ketoacidosis, " and "Pain Therapy for Children." Congress on Clinical Specialties and Related Basic Sciences, Bogota, Columbia, June 1989.
21. "Neurologic Crisis in Diabetic Ketoacidosis." American Association of Critical Care Nurses, Seattle, Washington, June 1989.
22. "Caudal Anesthesia for Infants and Children." Society for Pediatric Anesthesia Annual Meeting, New Orleans, October 1989.
23. "Techniques for measurement and treatment of pain in children." American Pain Society Eighth Annual Meeting, Phoenix, October 1989.

1990

24. "Acute Pain - Biology, " "Pharmacology of Pain Management, " "Epidural Narcotics." Pediatric Pain, University of Washington CME Course, Seattle, February 1990.
25. "Pain in Children, " American Society of Regional Anesthesia Panel, American Society of Anesthesiologists Annual Meeting, Las Vegas, 1990.
26. "Consultant's Corner, " American Society Anesthesiologists Annual Meeting, Las Vegas, October 1990.
27. "Acute Pain Management - Current Practice of Epidural Analgesia, " American Pain Society Ninth Annual Meeting, St.Louis, October 1990.

1991

28. "Pain Management During and After Pediatric Ambulatory Surgery, " California Society of Anesthesiologists Annual Meeting, Anaheim, California, May 1991.
29. "Regional Anesthesia for Pediatric Ambulatory Surgery, " American Society of Regional Anesthesia Panel, American Society of Anesthesiologists Annual Meeting, San Francisco, October 1991.
30. "Diabetic Ketoacidosis, " Grand Rounds, Children's Hospital and Medical Center, Seattle, October 1991.
31. "Standards of Practice of Pediatric Regional Anesthesia, " Society of Pediatric Anesthesia Annual Meeting, San Francisco, October 1991.

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1992

32. "Early Management of Diabetic Ketoacidosis, " North Pacific Pediatric Society Annual Meeting, Seattle, February 1992.
33. "Regional Anesthesia, " Washington State Society of Anesthesiologists, Annual Seafair Meeting, Seattle, August 1992.
34. "Patient Safety in Pediatric Pain Management, " Symposium Chairman, American Pain Society Annual Meeting, San Diego, October 1992.
35. "Sedation and Analgesia, " Symposium, American Academy of Pediatrics Annual Meeting, San Francisco, October 1992.

1993

36. "Recent Advances in the Pain Clinic--What's New in Pediatrics." American Society of Regional Anesthesia Annual Meeting, Seattle, May 1993.
37. "Pediatric Pain Management." UCD Annual Pain Review Course, Napa, California, November 1993.

1994

38. "Practical Post-operative Analgesia: Controversies for 1994 and Beyond." Third International Symposium on Pediatric Pain, Philadelphia, June 1994.
39. "Neuropathic Pain." Third International Symposium of Pediatric Pain, Philadelphia, June 1994.
40. "Pediatric Clinical Forum," American Society of Anesthesiologists, San Francisco, October 1994.
41. "presentation of Cases in the Real World," Society for Ambulatory Anesthesia Panel, American Society of Anesthesiologists, San Francisco, October 1994.

1995

42. "Addiction, Tolerance, and Weaning from Opiates and Sedatives," Pediatric Pain Symposium, Lucile Salter Packard Children's Hospital at Stanford, Stanford University, April 1995.
43. "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, April 1995.
44. "Pain Management in Children," Alexian Brothers Hospital Grand Rounds, San Jose, California, May 1995.
45. "Regional Anesthesia for Children," ASA Refresher Course Lecture, American Society of Anesthesiologists, Atlanta, October 1995.
46. "Medical Care in the States of the Former Soviet Union," The Association for the International Development of Anesthesia, Annual Meeting, Atlanta, October 1995.

1996

47. "Blocks, Epidurals, and Other High Tech Methods," Pediatric Pain: Children and Their Special Needs," Lucile Salter Packard Children's Hospital at Stanford, Stanford University, April 1996.
48. "Combined Regional and General Anesthesia in Children: Effects on Outcome," Washington University Department of Anesthesiology, St. Louis, MO, September 1996.
49. "Ambulatory Anesthesia and the Pediatric Patient," ASA Refresher Course Lecture, American Society of Anesthesiologists, New Orleans, October 1996.
50. "Clinical Forum on Pediatric Anesthesia," Organizer and Moderator, American Society of Anesthesiologists, New Orleans, October 1996.

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1997

51. "Problems and Pitfalls: Pediatric Regional Anesthesia," UCSD Anesthesia Update, San Diego, January 1997.
52. "Diabetic Ketoacidosis and Osmolar Disorders," Society of Critical Care Medicine Annual Meeting, San Diego, February 1997.
53. "The Ambulatory Pediatric Case - Problems, Pitfalls and Solutions," California Society of Anesthesiologists 14th Annual Winter Seminar, Breckenridge, Colorado, February 1997.
54. "Practicing Outside the OR-New Roles for the Pediatric Anesthesiologist," California Society of Anesthesiologists 14th Annual Winter Seminar, Breckenridge, Colorado, February 1997.
55. "Combined Regional/General Anesthesia in Children-Rationale, Patient Selection, and Techniques to Succeed," California Society of Anesthesiologists 14th Annual Winter Seminar, Breckenridge, Colorado, February 1997.
56. "Caring for the Child with Complex Disease," California Society of Anesthesiologists 14th Annual Winter Seminar, Breckenridge, Colorado, February 1997.
57. "Controversies in Pediatric Anesthesia-Case Discussions," California Society of Anesthesiologists Annual Meeting, Monterey, California, May 1997.
58. "Clinical Update" (Panel Moderator), California Society of Anesthesiologists Annual Meeting, Monterey, California, May 1997.
59. "The Organization of a Pediatric Pain Service," Pontificia Universidad Catolica de Chile, Santiago, Chile, November 1997.
60. "Neuropathic Pain," Pontificia Universidad Catolica de Chile, Santiago, Chile, November 1997.
61. "PCA and Nurse Controlled Analgesia in Children," Pontificia Universidad Catolica de Chile, Santiago, Chile, November 1997.
62. "Regional Anesthesia and Analgesia in Children," Pontificia Universidad Catolica de Chile, Santiago, Chile, November 1997.
63. "Future Perspectives in Pediatric Pain Management," Pontificia Universidad Catolica de Chile, Santiago, Chile, November 1997.

1998

64. "Staying Out of Trouble with Regional Nerve Blocks," 36th Clinical Conference in Pediatric Anesthesiology, Children's Hospital Los Angeles, January 1998.
65. "Pain Control Routines for Neonates, Infants and Children," 36th Clinical Conference in Pediatric Anesthesiology, Children's Hospital Los Angeles, January 1998.
66. "Pediatric Regional Analgesia-Tutorial and Hands-on Demonstration with Models," 36th Clinical Conference in Pediatric Anesthesiology, Children's Hospital Los Angeles, January 1998.
67. "Pediatric Pain Management: Opioids-IV, Oral, Rectal, Epidural, NSAIDS, pain assessment," Annual Meeting, Idaho State Society of Anesthesiologists, Sun Valley, ID, February 1998.
68. "Techniques and Complications for Regional Anesthesia in Pediatrics," Annual Meeting, Idaho State Society of Anesthesiologists, Sun Valley, ID, February 1998.
69. "Control of Breathing, Apnea, Prematurity, and Anesthesia," 7th Annual Meeting of the Japanese Society of Pediatric Anesthesia, September 1998, Sendai, Japan.
70. "Anesthesia Outside the Operating Room: New Roles for the Pediatric Anesthesiologist," National Children's Hospital, September, 1998, Tokyo, Japan.

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71. "The FDA Approval Process," Terumo Corporation, September, 1998, Tokyo, Japan.
72. "Pain Management after Pediatric Trauma," AAP Breakfast Panel, ASA Annual Meeting, October, 1998, Orlando, FL.
73. "Pain Management Techniques for Children That Work," California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii, October 1998.
74. "Sedation and Anesthesia of Children Outside the OR," California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii, October 1998.
75. "Problems and Pitfalls of Regional Anesthesia in Children," California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii, October 1998.
76. "Congenital Heart Disease in Children," California Society of Anesthesiologists Hawaiian Seminar, Kohala Coast, Hawaii, October 1998.
77. "Control of Breathing, Apnea, Prematurity, and Anesthesia," Massachusetts General Hospital, November 1998, Boston.

1999

78. "Simple Regional Nerve Blocks in the Management of Childhood Fractures," 37th Clinical Conference in Pediatric Anesthesiology, Anesthesiology, Children's Hospital Los Angeles, January 1999.
79. "Management of a Child with Epidermolysis Bullosa," 37th Clinical Conference in Pediatric Anesthesiology, Anesthesiology, Children's Hospital Los Angeles, January 1999.
80. "Workshop on Regional Anesthesia Techniques," 37th Clinical Conference in Pediatric Anesthesiology, Anesthesiology, Children's Hospital Los Angeles, January 1999.
81. "Pain Management Strategies for Children," University of Wisconsin-Madison Medical School, March 1999.
82. "Caring for the Child with Complex Disease," University of Wisconsin-Madison Medical School, March 1999.
83. "Inhalation and Total Intravenous Anesthesia in Children," Bay Area Pediatric Anesthesia Consortium Annual Meeting, Stanford, California, April 1999.
84. "Pain Management Strategies for Children," University of Pittsburgh-Children's Hospital of Pittsburgh, April 1999.
85. "Managing the Child with Diabetes," University of Pittsburgh-Children's Hospital of Pittsburgh, April 1999.
86. "Managing the Child with Diabetes," UC San Diego Department of Anesthesia, November 1999
87. "Pain Management Strategies for Children," San Diego Society of Anesthesiologists, November, 1999.

2000

88. "Managing the Child with Diabetes," Loyola University Department of Anesthesiology, May 2000.
89. "Pediatric Pain Management," Loyola University Department of Anesthesiology, May 2000.
90. "Physiopathology and Treatment of Pain in Infants," CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000.
91. "Organizing a Pain Treatment Program," CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000.
92. "Advances in the Treatment of Pain," CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000.

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93. "Regional Anesthesia in Children," CRIANÇA 2000 International Conference of Pediatric Specialties, Curitiba, Brazil, May 2000.
94. "Congenital Heart Disease in Children," California State Society of Anesthesiologists Hawaiian Seminar, Honolulu, July 2000.
95. "Do's and Don'ts of Regional Anesthesia in Children," California State Society of Anesthesiologists Hawaiian Seminar, Honolulu, July 2000.
96. "Pain Management Techniques that Work for Children," California State Society of Anesthesiologists Hawaiian Seminar, Honolulu, July 2000.
97. "Anesthetic Management of the Diabetic Patient," California State Society of Anesthesiologists Hawaiian Seminar, Honolulu, July 2000.
98. "Unscrambling the Scrambled Heart: Anesthesia for Children with Congenital Heart Disease," Kaiser Permanente Department of Anesthesiology Annual Meeting, San Francisco, September 2000.

2001

99. "Regional Anesthesia in Children," South Brazil Society of Anesthesiologists, Londrina, Brazil, April 2001.
100. "Pediatric Ambulatory Anesthesia," South Brazil Society of Anesthesiologists, Londrina, Brazil, April 2001.
101. "Clinical Cases in Pediatrics," South Brazil Society of Anesthesiologists, Londrina, Brazil, April 2001.
102. "The Pediatric Pain Clinic," Japanese Society of Anesthesiologists 48th Annual Meeting, Kobe, Japan, April 2001.
103. "Problem Based Learning Session," 26th Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Vancouver, B.C., Canada, May 2001.
104. "Ethics and Risks of Regional Anesthesia in the Pediatric Patient under General Anesthesia," 26th Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Vancouver, B.C., Canada, May 2001.
105. "Risks and Benefits of Pain Management Techniques," Children's Hospital of Wisconsin, Milwaukee, May 2001.
106. "Perioperative Management of IDDM in Children," Medical College of Wisconsin Department of Anesthesiology, May 2001.

2002

107. "Pediatric Pain Management," University of California, Davis Department of Anesthesiology, March 2002.
108. "Regional Anesthesia in the Anesthetized Child," 27th Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Chicago, April 2002.
109. "Paradoxical Analgesia using Ultra-low Dose Opioid Antagonists," City of Hope Medical Center, Los Angeles, June, 2002.
110. "Paradoxical Analgesia using Ultra-low Dose Opioid Antagonists," Stanford University School of Medicine, Otorhinolaryngology Department Grand Rounds, September, 2002.

2003

111. "Novel Analgesics and Drug Delivery for Childhood Pain," Annual Meeting, American Pain Society, Chicago, March 2003.

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112. "Pediatric Pain Management," Annual Meeting, American Society of Regional Anesthesia and Pain Management, San Diego, November 2003.

2004

113. "Non-cardiac Anesthesia for the Child with Congenital Heart Disease," Department of Anesthesiology, University of New Mexico, Albuquerque, NM, January, 2004.
114. "Pain Management in Children," Department of Anesthesiology Grand Rounds, University of New Mexico, Albuquerque, NM, January, 2004
115. "Management of Acute Pain in Children," Pediatric Pain Management for the Pediatrician and Family Physician, Palo Alto, CA, May, 2004.
116. "The Preoperative Assessment of Children," Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii, August 2004.
117. "Anesthesia for Children with Heart Disease," "Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii, August 2004.
118. "Practical Regional Anesthesia Techniques in Pediatric Patients," Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii, August 2004.
119. "Garden Variety Pediatric Anesthesia (T&A, M&T, Hernias): Best practices," Dannemiller Hawaii Anesthesia Update 2004, Kauai, Hawaii, August 2004.
120. "Pediatric Neuropathic Pain and Its Treatment," Sociedade Brasileira de Anestesiologia (Brazilian Society of Anesthesiologists) Annual Congress, Curitiba, Brazil, November 2004.
121. "Non-steroidal Anti-inflammatory Drugs in Children," Sociedade Brasileira de Anestesiologia (Brazilian Society of Anesthesiologists) Annual Congress, Curitiba, Brazil, November 2004.
122. Program Director, Pediatric and Adult Pain Management, Big Island, Hawaii, December 2004.
123. "Do Infants Hurt? The Ontogeny of Nociception," Pediatric and Adult Pain Management, Big Island, Hawaii, December 2004.
124. "The Medical, Legal, and Economic Costs of Untreated Pain: An Interactive Audience—Panel Discussion," Pediatric and Adult Pain Management, Big Island, Hawaii, December 2004.
125. "What's on the Horizon? Analgesic Drug Development," Pediatric and Adult Pain Management, Big Island, Hawaii, December 2004.

2005

126. Program Director, Pediatric and Adult Pain Management, Whistler, British Columbia, Canada, February, 2005.
127. "Do Infants Hurt? The Ontogeny of Nociception," Pediatric and Adult Pain Management, Whistler, British Columbia, Canada, February, 2005.
128. "The Medical, Legal, and Economic Costs of Untreated Pain: An Interactive Audience—Panel Discussion," Whistler, British Columbia, Canada, February, 2005.
129. "What's on the Horizon? Analgesic Drug Development," Pediatric and Adult Pain Management, Whistler, British Columbia, Canada, February, 2005.
130. "Specificity in Acute Pain Management in Children," Simpósio Brasileiro e Encontro Internacional sobre Dor Centro de Convenções Rebouças (SIMBIDOR 2005), São Paulo, Brazil, October, 2005.
131. 132. "Neuraxial Blocks in Children: Indications and Contraindications," SIMBIDOR 2005, São Paulo, Brazil, October, 2005.

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132. "Neurolytic and Sympathetic Blocks in Children: Myths and Facts," SIMBIDOR 2005, São Paulo, Brazil, October, 2005.

133. "Chronic Pain Management in Children," SIMBIDOR 2005, São Paulo, Brazil, October, 2005.

2006

134. "Sedation of the Pediatric Patient," Grand Rounds, St. Joseph's Hospital, Stockton, CA, March, 2006.

135. "Pediatric Regional Anesthesia Update" (Refresher Course), ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA, April, 2006.

136. "Pediatric Regional Anesthesia Techniques" (Workshop) , ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA, April, 2006.

137. "ENT Blocks in Pediatrics" (Master Class) , ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA, April, 2006.

138. "Common Pediatric Regional Blocks" (Workshop) , ASRA 2006 Annual Spring Meeting, Rancho Mirage, CA, April, 2006.

139. "Pain Management of the Child," Grand Rounds, Kaiser Permanente, September, 2006.

140. "Overview of Pain in Children: Types, Assessment, Pharmacotherapy, Nonpharm Management," Kapiolani Children's Hospital, Honolulu, HI, September, 2006.

141. Management of Acute Pain in Children," Kapiolani Children's Hospital, Honolulu, HI, September, 2006.

142. Management of Chronic Pain in Children," Kapiolani Children's Hospital, Honolulu, HI, September, 2006.

143. Moderator, Plenary Session, Society for Pediatric Anesthesia 2006 Annual Fall Meeting, Chicago, IL, October, 2006.

2007

144. "Ambulatory Management of Childhood Pain," Lucile Packard Children's Hospital 15th Annual Pediatric Update, Stanford, June, 20 07.

145. Panelist, Regional Analgesia versus Intravenous Analgesia for Pediatric Pain, American Society of Anesthesiologists 2007 Annual Meeting, San Francisco, October, 2007.

146. "Ultrasound Guided Pediatric Regional Anesthesia," Erasmus Hospital, Brussels, Belgium, October, 2007.

2008

147. "Pain Management in Children," Salinas Valley Memorial Healthcare System, January, 2008.

2009

147. "Regional Anesthesia for Infants and Children," Northwest Anesthesia Seminars (NWAS) Pediatric Anesthesia Review Course, San Francisco, May, 2009.

148. "Pain Management for Infants and Children," NWAS Pediatric Anesthesia Review Course, San Francisco, May, 2009.

149. "Endocrine Abnormalities and Their Perioperative Management," NWAS Pediatric Anesthesia Review Course, San Francisco, May, 2009.

150. "Use of Adjunct Drugs (sedatives, NSAIDs, alpha-1 blockers)," NWAS Pediatric Anesthesia Review Course, San Francisco, May, 2009.

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151. "Common Pediatric Anesthetic Cases: Best Practices," NWAS Pediatric Anesthesia Review Course, San Francisco, May, 2009.
152. "The Management of Chronic Pain in Children," Medical University of Vienna, Department of Anaesthesia, Intensive Care Medicine and Pain Therapy Grand Rounds, Vienna, Austria, September, 2009.
153. "Pediatric Pain Management in the New Millenium," Plenary Address to the AIC Austrian Society of Anesthesiologists (ÖGARI), Vienna, Austria, September, 2009.
154. "The Management of Chronic Pain in Children," Pediatric Anesthesia Meeting in Honor of Dr. Avishag Kadari, Hadassah Hospital, Jerusalem, Israel, October, 2009.
155. "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, November, 2009.

2010

156. "Anestesia Regional en Pediatría," Anestesia en el Bicentenario, Departamento de Anestesiología, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile, August 6, 2010.
157. "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.
158. "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.
159. "Pediatric Pain Management," Department of Anesthesia Grand Rounds, Stanford University, Stanford, CA, August 30, 2010.
160. "Epidural Anesthesia: Awake or Asleep?," Panel on Pediatric Anesthesia, American Society of Anesthesiologists Annual Meeting, San Diego, CA, October 17, 2010.

2011

161. "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.
162. "Biomedical Ethics in Pediatric Research," Purdue Pharmaceuticals International Investigators' Meeting, Prague, Czech Republic, March 31, 2011.
163. "Oxycodone: Clinical Experience in Children," Purdue Pharmaceuticals International Investigators' Meeting, Prague, Czech Republic, April 1, 2011.
164. "The Mysteries and Challenges of Chronic Pain in Children," the 4th Annual Peter & Arthur Sheridan Memorial Lecture, McGill University, Montreal, Quebec, September 22, 2011.
165. "The Mysteries and Challenges of Chronic Pain in Children," the 4th Annual Peter & Arthur Sheridan Memorial Lecture, McGill University, Montreal, Quebec, September 22, 2011.
166. "Pain in the U.S.," Los Altos Morning Forum, Los Altos, CA, November 1, 2011.

2012

167. "Chronic Pain in Children," John Muir Medical Center Department of Pediatrics Grand Rounds, Walnut Creek, CA, January 5, 2012.

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168. "Pain Management in Pediatrics," Community Hospital Department of Pediatrics Grand Rounds, Monterey, CA, March 12, 2012.
169. "Pain Management in Pediatrics," Dominican Hospital Department of Pediatrics Grand Rounds, Santa Cruz, CA, April 10, 2012.
170. "Biomedical Ethics in Pediatric Research," Purdue Pharmaceuticals Investigators' Meeting, Atlanta, GA, November 8, 2012.
171. "Multimodal Analgesia," Royal Children's Hospital, Melbourne, Australia, November 22, 2012.
172. "Opioid Induced Hyperalgesia," Society of Paediatric Anaesthesia in New Zealand and Australia (SPANZA) Annual Meeting, Melbourne, Australia, November 23, 2012.
173. "Consequences of Untreated Pain in Neonates," Society of Paediatric Anaesthesia in New Zealand and Australia (SPANZA) Annual Meeting, Melbourne, Australia, November 23, 2012.

2013

- 173.174. "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, , January 24, 2013.
174. "Pediatric Regional Anesthesia, the Good, the Bad, and the Ugly," 2nd Annual Robert M. Smith Memorial Lecture, Pittsburgh Children's Hospital, May 15, 2013.
175. "Public - private partnerships: Structuring PRN-Pain to Fulfill Multiple Functions," 9th International Symposium on Pediatric Pain, Stockholm, Sweden, June 19, 2013.
176. "How to Build a Bridge: Communicating from Bench to Bedside," 9th International Symposium on Pediatric Pain, Stockholm, Sweden, June 20, 2013.
177. "Complications of Spinal Anesthesia in a Newborn," Panel on Pediatric Regional Anesthesia, American Society of Anesthesiology Annual Meeting, San Francisco, CA, October, 2013.

2014

178. "Pediatric Chronic Pain," Grand Rounds, Department of Emergency Medicine, Stanford University School of Medicine, Stanford, CA, July, 2014.
179. "Pain Management in Children and Adolescents," The Northern California Kaiser Permanente Medical Group, "Permanente Medicine: Pediatrics" Kaiser TV videoconference, August, 2014.
180. "Headache Management in Children: Is it Evidence or Bias?," American Society of Anesthesiology Annual Meeting, , LA, October, 2014.

2015

181. "Pharmacotherapy and Clinical Trials in Pediatrics," 10th International Symposium on Pediatric Pain Education Day, Seattle, WA, May, 2015.
182. "Pain Registries: Developing Pediatric Chronic Pain Clinical Research Infrastructure," 10th International Symposium on Pediatric Pain Education Day, Seattle, WA, June, 2015.
183. "CRPS," Department of Orthopaedic Surgery Grand Rounds, Stanford University School of Medicine, December, 2015.

2016

184. "Challenging Pain Syndromes," 3rd Congress on Paediatric Palliative Care - a Global Gathering, Rome, Italy, November, 2016.

2017

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185. "The Opioid Epidemic, a View from the Inside," Keynote Speech, APhA (American Pharmacists Association) Annual Meeting & Exposition, San Francisco, March, 2017.
186. "ADE Deep Dive - Webinar on Opioid Use," US Department Health and Human Services, CMS Partnership for Patients, May, 2017 (<http://tinyurl.com/kusoj24>).
187. "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, July, 2017. (<http://bit.ly/2vjT59U>).
188. "The Use of Opioids in Children: A Pro - Con Debate," Stanford University Department of Anesthesiology Grand Rounds, Stanford, CA, October, 2017.
189. "The Science of Chronic Pain," Keynote Address, Navy SEAL Foundation Impact Forum 2017, San Diego, November, 2017.

2018

190. "The Opioid Epidemic - What You Need to Know," Los Altos Rotary Club, Los Altos, CA, February, 2018.
191. "Medical Marijuana: The Pro Argument," American Pain Society Annual Scientific Meeting, Anaheim, CA, March, 2018.
192. "The Opioid Epidemic - What You Need to Know," Los Gatos Rotary Club, Los Gatos, CA, August, 2018.
193. "Opioids, Children and the National Opioid Crisis," The 1st Dan And Mary Tarcea Guest Lecturer, Seattle Children's Hospital and the University of Washington, December, 2018.

2019

194. "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, February, 2019.
195. "Opioids – a balance between pain treatment and misuse and diversion," Keynote Plenary Lecture: 12th International Symposium on Pediatric Pain, Basel, Switzerland, June, 2019.

2020

196. "The Opioid Crisis: Its Roots and Its Future," Grand Rounds / Visiting Professor, Alberta Children's Hospital, Calgary, Alberta, Canada, February, 2020.
197. "When Pain is a Disease," Annual Pediatric Pain Conference, Alberta Children's Hospital, Calgary, Alberta, Canada, February, 2020.
198. "The Intersection of Psychology and Pain: Conversion Disorder, Fictitious Pain, and Pain Amplification," Annual Pediatric Pain Conference, Alberta Children's Hospital, Calgary, Alberta, Canada, February, 2020.
199. "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, February, 2020.