



**CURRICULUM VITAE**  
**Paul J. Christo, M.D., M.B.A.**  
Host, Aches and Gains on Sirius XM

**Current Appointment**

Associate Professor  
Department of Anesthesiology and Critical Care Medicine  
Division of Pain Medicine  
The Johns Hopkins University School of Medicine  
Baltimore, Maryland

**Joint Appointment**

Associate Professor  
The Johns Hopkins School of Nursing  
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**Contact Information**

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Division of Pain Medicine  
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**Education and Training**

1986-1990 B.S. University of Notre Dame  
1991-1995 M.D. University of Louisville School of Medicine  
1995-1996 The Johns Hopkins University School of Medicine (Internship)  
1996 Diploma in French, Institut Francais D'Annecy, Annecy, France  
1997-2000 Harvard Medical School, Massachusetts General Hospital (Anesthesiology/Critical Care Residency)  
2000-2001 The Johns Hopkins University School of Medicine (Fellowship in Pain Medicine)  
2003 Business of Medicine Graduate Certificate, The Johns Hopkins University  
2004-2006 M.B.A. The Johns Hopkins University Carey Business School, Health Care Management

**Professional Experience**

1992 National Institutes of Health Research Fellow, Clinical Brain Disorders Branch, National Institute of Mental Health  
1995-1996 Internship, The Johns Hopkins Bayview Medical Center, Department of Internal Medicine, Baltimore, Maryland  
1997-2000 Residency, Harvard Medical School, Massachusetts General Hospital, Department of Anesthesia and Critical Care, Boston, Massachusetts  
2000-2001 Fellowship in Pain Medicine, The Johns Hopkins University School of Medicine, Department of Anesthesiology and Critical Care Medicine, Division of Pain Medicine  
2001-2011 Assistant Professor, Department of Anesthesiology and Critical Care Medicine, Division of Pain Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD  
2001-2003 Director of Pain Education, Department of Anesthesiology and Critical Care Medicine, Division of Pain Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD  
2002-2003 Director of Quality Assurance, Division of Pain Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD.

2003-2011	Director, Multidisciplinary Pain Fellowship, Department of Anesthesiology and Critical Care Medicine, Division of Pain Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD.
2003-2008	Director, Blaustein Pain Treatment Center, The Johns Hopkins Hospital, Baltimore, MD.
2011-	Associate Professor, Department of Anesthesiology and Critical Care Medicine, Division of Pain Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD

## RESEARCH ACTIVITIES

### Publications:

1. **Christo PJ**, El-Mallakh RS: Possible role of endogenous Oubain-like compounds in the pathophysiology of bipolar illness. *Medical Hypotheses* 1993; 41:378-383.
2. Panlilio LM, **Christo PJ**, Raja SN: Current management of postherpetic neuralgia. *The Neurologist* 2002; 8:339-350.
3. Block BM, **Christo PJ**: Ketamine analgesia for the opioid-tolerant cancer patient. *The International Journal of Pain Medicine and Palliative Care* 2003; 2:71-74.
4. Cohen SP, **Christo PJ**, Moroz L: Pain management in trauma patients. *American Journal of Physical Medicine and Rehabilitation* 2004;83:142-161.
5. Wu CL, **Christo PJ**, Richman JM, Hsu W: Postdural Puncture Headaches: An Overview. *The International Journal of Pain Medicine and Palliative Care* 2004;3(2):53-59.
6. Brown AK, **Christo PJ**, Wu CL: Strategies for postoperative pain management. *Best Practice and Research Clinical Anaesthesiology* 2004;18:703-717.
7. **Christo PJ**, Hobelmann G, Sharma A: Aging and the Neurobiology of Addiction. *Geriatrics and Aging* 2005; 8 (10): 48-52.
8. **Christo PJ**, Hobelmann G, Maine D: Post Herpetic Neuralgia in Older Adults: Evidence-Based Approaches to Clinical Management. *Drugs and Aging* 2007: 24 (1):1-19.
9. Cohen SP, Hurley RW, **Christo PJ**, Winkley J, Mohiuddin MM, Stojanovic MP: Clinical Predictors of Success and Failure for Lumbar Facet Radiofrequency Denervation. *The Clinical Journal of Pain* 2007;23(1):45-52.
10. **Christo PJ**: Interventional Approaches to Neuropathic Pain. *Journal of The Transverse Myelitis Association* 2007; April, (2):41-49.
11. Cohen SP, **Christo PJ**, Wang S, Chen L, Stojanovic MP, Shields CH, Brummett C, Mao J. The Effect of Opioid Dose and Treatment Duration on the Perception of a Painful Standardized Clinical Stimulus. *Regional Anesthesia and Pain Medicine* 2008: May-June; 33(3):199-206.
12. Gupta A, **Christo PJ**. Expert Opinion in Opioid Abuse and Addiction. *The Journal for Nurse Practitioners*: February 2009; 5 (2): 132-134.
13. Williams BS, **Christo PJ**. Obstructed Catheter Connection Pin discovered During Intrathecal Baclofen Pump Exchange. *Clinical Journal of Pain* 2009: March-April; 25 (3):256-259.
14. Friedewald VE, Bennett JS, **Christo PJ**, Pool JL, Scheiman JM, Simon LS, Strand V, White WB, Williams GW, Roberts WC. American Journal of Cardiology Editor's Consensus: Selective and Nonselective Nonsteroidal Anti-inflammatory Drugs (NSAIDs) and Cardiovascular Risk. *American Journal of Cardiology* 2010;106:873-884.
15. Wang J, **Christo PJ**: The Influence of Prescription Monitoring Programs on Chronic Pain Management. *Pain Physician* 2009; 12: 507-515.
16. Carinci AJ, **Christo PJ**: Physician Impairment: Is Recovery Feasible? *Pain Physician* 2009; 12:487-491.

17. Ky P, Hameed H, **Christo PJ**: Independent Medical Examination: Facts and Fallacies. *Pain Physician* 2009; 12:811-818.
18. Brand, ES, Ky P, **Christo PJ**, Standaert C: Point-Counterpoint: Debating “Interventions” for Chronic Axial Low Back Pain. *PM&R* 2009; 1 (10): 964-972.
19. Le EN, Freischlag JA, **Christo PJ**, Chhabra A, Wigley FM. Thoracic outlet syndrome secondary to localized scleroderma treated with botulinum toxin injection. *Arthritis Care & Research* 2010; 62 (3): 430-433.
20. Cohen SP, Hayek SM, Datta S, Bajwa ZH, Larkin TM, Griffith S, Hobelmann G, **Christo PJ**, White R: Incidence and Root-Cause Analysis of Wrong Site Pain Management Procedures. *Anesthesiology* 2010; 112:711-8.
21. **Christo PJ**, Christo DK, Carinci AJ, Freischlag JA: Single CT-Guided Chemodenervation of the Anterior Scalene Muscle with Botulinum Toxin for Neurogenic Thoracic Outlet Syndrome. *Pain Medicine* 2010;11:504-511.
22. Zan E, Kurt KN, Yousem, DM, **Christo PJ**: Spinal Cord Stimulators: Typical Positioning and Postsurgical Complications. *American Journal of Roentgenology* 2011; 196(2):437-45
23. Gupta A, Martindale T, **Christo PJ**: Intrathecal Catheter Granuloma associated with Continuous Sufentanil Infusion. *Pain Medicine* 2010 Jun;11(6):847-52.
24. Mashayekh A, **Christo PJ**, Yousem DM, Pillai JJ: CT-guided Injection of the Anterior and Middle Scalene Muscles: Technique and Complications. *American Journal of Neuroradiology* 2011 Mar;32:495-500.
25. Bottros M, **Christo PJ**: Use of Urine Drug Screens. *Journal of Family Practice, Pain Management Today eNewsletter Series* 2011; 1(7).
26. Manchikanti L, Vallejo R, Manchikanti KN, Benyamin RM, Datta S, **Christo PJ**: Effectiveness of Long-Term Opioid Therapy for Chronic Non-Cancer Pain. *Pain Physician* 2011; 14:E133-E156.
27. **Christo PJ**, Manchikanti LM, Ruan X, Hansen H, Solanki DR, Jordan AE, Colson J: Urine Drug Testing in Chronic Pain. *Pain Physician* 2011; 14:123-143.
28. Manchikanti L, Ailani H, Koyyalagunta K, Datta S, Singh V, Eriator I, Sehgal N, Shah R, Benyamin R, Vallejo R, Fellows B, **Christo PJ**: A Systematic Review of Randomized Trials of Long-Term Opioid Management for Chronic Non-Cancer Pain. *Pain Physician* 2011; 14:91-121.
29. Cohen SP, Gupta A, Strassels SA, **Christo PJ**, Erdek MA, Griffith SR, Kurihara C, Buckenmaier CC, Cornblath D, Vu TN: Effect of MRI on Treatment Results or Decision Making in Patients with Lumbosacral Radiculopathy Referred for Epidural Steroid Injections. *Archives of Internal Medicine* 2012; Jan 23;172(2):134-42
30. McGreevy K, Williams KA, **Christo PJ**: Cephalad Lead Migration Following Spinal Cord Stimulation Implantation. *Pain Physician* 2012; 15:E79-E87.
31. Lum YW, Brooke BS, Likes K, Modi M, Grunebach H, **Christo PJ**, Freischlag JA: Impact of anterior scalene lidocaine blocks on predicting surgical success in older patients with neurogenic thoracic outlet syndrome. *Journal of Vascular Surgery* 2012;55 (5):1370-1375
32. Hansen H, Manchikanti L, Simopoulos TT, **Christo PJ**, Gupta S, Smith HS, Hameed H, Cohen SP: A Systematic Evaluation of the Therapeutic Effectiveness of Sacroiliac Joint Interventions. *Pain Physician* 2012;15: E247-E278
33. Manchikanti L, Buenaventura RM, Manchikanti KN, Ruan L, Gupta S, Smith HS, **Christo PJ**, Ward SP: Effectiveness of Therapeutic Lumbar Transforaminal Epidural Steroid Injections in Managing Lumbar Spinal Pain. *Pain Physician* 2012; 15:E199-E245
34. Rochlin DH, Likes KC, Gilson MM, **Christo PJ**, Freischlag JA: Management of unresolved, recurrent, and /or contralateral neurogenic symptoms in patients following first rib resection and scalenectomy. *Journal of Vascular Surgery* 2012 Oct; 56(4):1061-7.

35. Peppin JF, Passik SD, Couto JE, Fine PG, **Christo PJ**, Argoff D, Aronoff GM, Bennett D, Cheatle MD, Slevin KA, Goldfarb NI: Recommendations for Urine Drug Monitoring as a Component of Opioid Therapy in the Treatment of Chronic Pain. *Pain Medicine* 2012 Jul;13(7):886-96.
36. Neufeld NJ, Gonzalez-Fernandez M, **Christo PJ**, Williams KA: Positive Recognition Program Increases Compliance with Medication Reconciliation by Resident Physicians in an Outpatient Clinic. *American Journal of Medical Quality* 2013 Jan-Feb;28 (1):40-5.
37. Manchikanki L, Abdi S, Atluri S, Balog CC, Benyamin RM, Boswell MV, Brown KR, Bruel BM, Bryce DLA, Burks PA, Burton AW, Calodney AK, Caraway DL, Cash KA, **Christo PJ**, et al: American Society of Interventional Pain Physicians (ASIPP) Guidelines for Responsible Opioid Prescribing in Chronic Non-Cancer Pain: Part 1 – Evidence Assessment. *Pain Physician* 2012;15:S1-S66
38. Manchikanki L, Abdi S, Atluri S, Balog CC, Benyamin RM, Boswell MV, Brown KR, Bruel BM, Bryce DLA, Burks PA, Burton AW, Calodney AK, Caraway DL, Cash KA, **Christo PJ**, et al: American Society of Interventional Pain Physicians (ASIPP) Guidelines for Responsible Opioid Prescribing in Chronic Non-Cancer Pain: Part 2 – Guidance. *Pain Physician* 2012;15:S67-S116
39. Cohen SP, Mao J, Vu TN, Strassels SA, Gupta A, Erdek MA, **Christo PJ**, Kurihara C, Griffith SR, Buckenmaier CC, III, Chen L. Does pain score in response to a standardized subcutaneous local anesthetic injection predict epidural steroid injection outcomes in patients with lumbosacral radiculopathy? A prospective correlational study. *Pain Med* 2013 Mar;14(3):327-35.
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41. Carinci AJ, Pathak R, Young M, **Christo PJ**. Complementary and alternative treatments for chronic pelvic pain. *Current Pain and Headache Reports* 2013 Feb;17(2):316
42. Manchikanti L, Abdi S, Atluri S, Benyamin RM, Boswell MV, Buenaventura RM, Bryce DA, Burks PA, Caraway DL, Calodney AK, Cash KA, **Christo PJ**, et al: An Update of Comprehensive Evidence-Based Guidelines for Interventional Techniques in Chronic Spinal Pain. Part II: Guidance and Recommendations. *Pain Physician* 2013 Apr;16 (2 Suppl): S49-S283.
43. Pritzlaff S, Carinci AJ, **Christo PJ**. Neurogenic Thoracic Outlet Syndrome: An often overlooked but treatable condition. *Journal of Family Practice* 2013 Sept;62 (9 Suppl 1):S16-21
44. Chakravarthy K, Chaudhry H, Williams K, **Christo PJ**. Review of the Uses of Vagal Nerve Stimulation in Chronic Pain Management. *Current Pain and Headache Reports* (2015); 19 (12):54.
45. Williams KA, Chambers CG, Dada M, **Christo PJ**, et al. Applying JIT principles to resident education to reduce patient delays: a pilot study in an academic medical center pain clinic. *Pain Medicine* 2015. Feb;16(2):312-8
46. Campbell CM, Buenaver LF, Raja SN, Kiley KB, Swedberg LJ, Wacnik PW, Cohen SP, Erdek MA, Williams KA, **Christo PJ**. Dynamic Pain Phenotypes are Associated with Spinal Cord Stimulation-Induced Reduction in Pain: A Repeated Measures Observational Pilot Study. *Pain Medicine* 2015 Jul;16(7):1349-60
47. Grider JS, Manchikanti L, Carayannopoulos A, Sharma ML, Balog CC, Harned ME, Grami V, Justiz R, Nouri KH, Hayek SM, Vallejo R, **Christo PJ**. Effectiveness of Spinal Cord Stimulation in Chronic Spinal Pain: A Systematic Review. *Pain Physician* (2016); 19 (1): E33-54.
48. Chakravarthy K, Nava A, **Christo PJ**, Williams K: Review of Recent Advances in Peripheral Nerve Stimulation (PNS). *Current Pain and Headache Reports* (2016) 20:60.

49. Deer TR, Hayek S, Pope JE, Lamer T, Hamza M, Grider JS, Rosen SM, Narouze S, Perruchoud C, Thomson S, Russo M, Grigsby E, Doleys DM, Jacobs MS, Saulino M, **Christo P**, Kim P, Huntoon EM, Krames E, Mekhail N (2017). The Polyanalgesic Consensus Conference (PACC): Recommendations for Trialing of Intrathecal Drug Delivery Infusion Therapy. *Neuromodulation: Technology at the Neural Interface*
50. Chakravarthy K, Chen Y, He C, **Christo PJ**. Stem Cell Therapy for Chronic Pain Management: Review of Uses, Advances, and Adverse Effects. *Pain Physician* (2017); 20:293-305
51. Chakravarthy KV, Boehm FJ, **Christo PJ**. Nanotechnology: A Promising New Paradigm for the Control of Pain. *Pain Medicine* (2017); 0: 1-12
52. Chakravarthy K, Richter H, **Christo PJ**, Williams K, Guan Y. Spinal Cord Stimulation for Treating Chronic Pain: Reviewing Preclinical and Clinical Data on Paresthesia-free High Frequency Therapy. *Neuromodulation* (2018) Jan;21(1):10-18
53. Chakravarthy K, Manchikanti L, Kaye AD, **Christo PJ**. Reframing the Role of Neuromodulation Therapy in the Chronic Pain Treatment Paradigm. *Pain Physician* (2018); 21:507-513
54. Deer TR, Pope JE, Lamer TJ, Grider JS, Provenzano D, Lubenow TR, FitzGerald JJ, Hunter C, Falowski S, Sayed D, Baranidharan G, Patel NK, Davis T, Green A, Pajuelo A, Epstein LJ, Harned M, Liem L, **Christo PJ**, Chakravarthy K, Gilmore C, Huygen F, Lee E, Metha P, Nijhuis H, Patterson DG, Petersen E, Pilitsis JG, Rowe JJ, Rupert MP, Skaribas I, Sweet J, Verrills P, Wilson D, Levy RM, Mekhail N. The Neuromodulation Appropriateness Consensus Committee on Best Practices for Dorsal Root Ganglion Stimulation. *Neuromodulation* 2019 Jan;22(1):1-35.
55. Chakravarthy KV, Kinfe TM, **Christo PJ**. Progress in noninvasive, abortive neuromodulation therapy for treating acute pain in primary headache disorders. *Pain Management* (2019) 9(1), 9-11
56. Yeh CH, Li C, Glick R, Schlenk RG, Albers K, Suen LKP, Lukkahatai N, Salen N, Pandiri S, Ma Wiexia, Perrin N, Morone NE, **Christo PJ**. A prospective randomized controlled study of auricular point acupressure to manage chronic low back pain in older adults: study protocol. *Trials* (2020) 21:99
57. Pergolizzi JV, **Christo PJ**, LeQuang JA, Magnusson P. The Use of Peripheral mu-Opioid Receptor Antagonists (PAMORA) in the Management of Opioid-Induced Constipation: An Update on Their Efficacy and Safety. *Drug Design, Development and Therapy* (2020):14 1009-1025
58. **Christo PJ**, Kamson DO, Smith TJ. Treatment of Déjerine-Roussy syndrome pain with scrambler therapy. *Pain Manag.* 2020 May;10(3):141-14
59. Pergolizzi JV Jr, Varrassi G, Magnusson P, LeQuang JA, Paladini A, Taylor R, Wollmuth C, Breve F, **Christo P**. COVID-19 and NSAIDs: A Narrative Review of Knowns and Unknowns. *Pain Ther.* 2020 May 24:1-6
60. Manchikanti L, Kaye AD, Soim A, Albers SL, Beall D, Shah RS, Atluri S, Abd-Elseyed A, Abdi S, Aydin S, Buenaventura SB, Cabaret J, Calodney AK, Candido KD, **Christo PJ**, Gharibo LC, Grider J, Gupta M, Haney B, Harned ME, Jha LS, Kaye AM, Knezevic NN, Kosanovic R, Navani M, Racz G, Pampati V, Pasupuleti R, Philip C, Rajput K, Wargo BW, Hirsch JA. Comprehensive Evidence-Based Guidelines for Facet Joint Interventions in the Management of Chronic Spinal Pain: American Society of Interventional Pain Physicians (ASIPP) Guidelines Facet Joint Interventions 2020 Guidelines. *Pain Physician* 2020; 23 (3S):S1-S127.
61. **Christo PJ**. Opioids May be Appropriate for Chronic Pain. *J Law Med Ethics.* 2020 Jun;48(2):241-248.

62. Joseph V. Pergolizzi Jr , Robert B. Raffa , Giustino Varrassi , Peter Magnusson , Jo Ann LeQuang , Antonella Paladini , Robert Taylor , Charles Wollmuth , Frank Breve , Maninder Chopra , Rohit Nalamasu & **Paul J. Christo** (2020): Potential Neurological Manifestations of COVID-19: A Narrative Review, *Postgraduate Medicine*
63. Pergolizzi JV, LeQuang JA, Taylor R, Wollmuth C, Nalamachu M, Varrassi G, **Christo P**, Breve F, Magnusson P. Four Pandemics: lessons learned, lessons lost. *Signa Vitae* 2020
64. El-Tallawy SN, Nalamasu R, Salem GI, LeQuang JAK, Pergolizzi JV, **Christo PJ**. Management of Musculoskeletal Pain: An Update with Emphasis on Chronic Musculoskeletal Pain. *Pain Ther* 2021; Jun;10(1):181-209. doi: 10.1007/s40122-021-00235-2
65. Chakravarthy K, Goel A, Jeha GM, Kaye AD, **Christo PJ**. Review of the Current State of Urine Drug Testing in Chronic Pain: Still Effective as a Clinical Tool and Curbing Abuse, or an Arcane Test? *Current Pain and Headache Reports* (2021) 25:12
66. Kawi J, Yeh CH, Li M, Caswell K, Mazraani M, Lukkanahatai N, Mensah S, Taylor J, Budhathoki C, **Christo P**. Auricular Acupressure Smartphone Application to Manage Chronic Musculoskeletal Pain: A Longitudinal, One-Group, Open Pilot Trial. *Glob Adv Health Med* 2021;10
67. Xu J, Sun Z, Wu J, Garza J, Rana M, Zhu AC, Chakravarthy KV, Abd-Elsayed A, Rosenquist E, Basi H, **Christo PJ**, Cheng J. Peripheral nerve stimulation in pain management: a systematic review. *Pain Physician* 2021; 24(2):E131-E152.
68. Pergolizzi JV, Varrassi G, Magnusson P, Breve F, Raffa RB, **Christo PJ**, Chopra M, Paladini A, LeQuang JA, Mitchell K, Coluzzi F. Pharmacologic Agents Directed at the Treatment of Pain Associated with Maladaptive Neuronal Plasticity. *Expert Opinion on Pharmacotherapy* 2021; Aug 30:1-12. DOI: 10.1080/14656566.2021.1970135
69. Lim C, Kavousi Y, Lum YW, **Christo PJ**. Evaluation and Management of Neurogenic Thoracic Outlet Syndrome with an Overview of Surgical Approaches: A Comprehensive Review. *Journal of Pain Research* 2021 (14): 3085-3095
70. Pergolizzi JV, Magnusson P, **Christo PJ**, LeQuang JA, Breve F, Mitchell K, Varrassi G. Opioid Therapy in Cancer Patients and Survivors at Risk of Addiction, Misuse or Complex Dependency. *Frontiers in Pain Research* 2021 (2): 1-10.

#### Letters to the Editor

1. Hameed H, **Christo PJ**: Response to Dr. Spencer. *Pain Physician* 2010; 13:91-99

#### EDUCATIONAL ACTIVITIES

##### Book Chapters, Monographs

1. Dubois BW, **Christo PJ**: The placebo effect. In: J. Ballantyne, ed. *The Massachusetts General Hospital Handbook of Pain Management*, Philadelphia: Lippincott Williams & Wilkins, 2002.
2. **Christo PJ**, Staats PS: Patient evaluation and criteria for procedure selection. In: Johnson BA, Staats PS, Wetzel FR, Mathis J, eds. *Image-Guided Spine Interventions*. New York, NY: McGraw-Hill, 2004.
3. **Christo PJ**: Opioid effectiveness and side effects in chronic pain. In: Staats PS, ed. *Anesthesiology Clinics of North America: Interventional Pain Management*. Philadelphia, PA: Elsevier/W.B.Saunders, 2004, pp 699-713.
4. **Christo PJ**, Raja SN: Complex regional pain syndrome. In: Wallace M, Staats PS, eds. *Pain Medicine and Management: Just the Facts*. New York, NY: McGraw-Hill, 2004.

5. **Christo PJ**, Grabow TS, Raja SN: Opioid effectiveness, addiction, and depression in chronic pain. In: Clark MR, Treisman GJ (eds.): *Pain and Depression. Advances in Psychosomatic Medicine*, 2004;25:123-137.
6. Grabow TS, **Christo PJ**, Raja SN: Complex regional pain syndrome: Diagnostic controversies, psychological dysfunction, and emerging concepts. In: Clark MR, Treisman GJ (eds.): *Pain and Depression. Advances in Psychosomatic Medicine*, 2004;25:89-101.
7. **Christo PJ**, Hobelmann G: Migraine Headaches, Chronic Pancreatitis, Constipation/Obstipation in Pain Management. In: Kirsch JR, Sibell D (eds.): *The 5 Minute Consult for Pain Management*. Lippincott series, 2006.
8. **Christo PJ**, Hobelmann G: Pelvic Pain. In: Smith HS (ed.): *Current Therapy in Pain*. Philadelphia, PA: WB Saunders, 2009.
9. **Christo PJ**, Jones C: Complex Regional Pain Syndrome. In: Smith HS (ed.): *Current Therapy in Pain*. Philadelphia, PA: WB Saunders, 2009.
10. **Christo PJ**, Cauley B: Post Herpetic Neuralgia. In: Smith HS (ed.): *Current Therapy in Pain*. Philadelphia, PA: WB Saunders, 2009.
11. **Christo PJ**, Mazloomdoost D: Interventional Treatments for Cancer Pain. *Annals of the New York Academy of Sciences*, New York Academy of Sciences, 1138: 299-328 (2008).
12. **Christo PJ**, Mazloomdoost D: Cancer Pain and Analgesia. *Annals of the New York Academy of Sciences*, New York Academy of Sciences, 1138: 278-298 (2008).
13. Williams BS, **Christo PJ**: Pharmacologic and Interventional Treatments for Neuropathic Pain. In: Dobretsov M and Zhang JM (eds.): *Mechanisms of Pain in Peripheral Neuropathy*. Kerala (India): Research Signpost, 2009.
14. Brown C, **Christo PJ**: Importance of Placebo Effect in Pain Management. In: Vadivelu N, Urman RD, Hines RL (eds.): *Essentials of Pain Management*. New York: Springer, 2011: 189-199.
15. Carinci AJ, **Christo PJ**: All I had was a knee bursectomy, now do I have RSD (CRPS)? In: Gallagher CJ, Lewis MC, Schwengel D (eds.): *Core Clinical Competencies in Anesthesiology: A Case-Based Approach*. Cambridge University Press, 2010: 318-323.
16. **Christo PJ** (Section Editor); Harrison D, Yamada J, Stevens B: Strategies for the Prevention and Management of Neonatal and Infant Pain. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed.): *Current Pain and Headache Reports*, Philadelphia, PA., 14 (1): 113-123; DOI 10.1007/s11916-009-0091-0 (2010).
17. **Christo PJ** (Section Editor); Buckenmaier CC, Brandon-Edwards H, Borden D, Wright J: Treating Pain on the Battlefield: A Warrior's Perspective. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed.): *Current Pain and Headache Reports*, Philadelphia, PA., 14(1): 1-7; DOI 10.1007/s11916-009-0090-1 (2010).
18. **Christo PJ** (Section Editor); Carinci AJ, Mao J: Pain and Opioid Addiction: What is the Connection? Anesthetic Techniques in Pain Management. In: Silberstein SD (ed.): *Current Pain and Headache Reports*, Philadelphia, PA., 14 (1): 17-21; DOI 10.1007/s11916-009-0086-x (2010).
19. **Christo PJ** (Section Editor); Lawson ER, Wallace MS: Current Developments in Intraspinal Agents for Cancer and Non-cancer Pain. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed.): *Current Pain and Headache Reports*, Philadelphia, PA., 14 (1): 8-16; DOI 10.1007/s11916-009-0092-z (2010).
20. **Christo PJ** (Section Editor); Green IC, Cohen SL, Finkenzeller D, **Christo PJ**: Interventional therapies for controlling pelvic pain: what is the evidence? Anesthetic Techniques in Pain Management. In: Silberstein SD (ed.): *Current Pain and Headache Reports*, Philadelphia, PA., 14(1):22-32; DOI 10.1007/s11916-009-0089-7 (2010).
21. **Christo PJ** (Section Editor); Lee MC, Tracey I: Unraveling the mystery of pain, suffering and relief with brain imaging. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed.): *Current Pain and Headache Reports*,

- Philadelphia, PA., 14 (2): 124-131; DOI 10.1007/s11916-010-0103-0 (2010).
22. Carinci AJ, Mehta P, **Christo PJ**: Chronic Pain in Torture Victims. Psychiatric Management of Pain. In: Silberstein SD (ed.): *Current Pain and Headache Reports*, Philadelphia, PA., 14 (2):73-79; DOI 10.1007/s11916-010-0101-2 (2010).
  23. Hameed H, Hameed M, **Christo PJ**: The Effect of Morphine on Glial Cells as a Potential Therapeutic Target for Pharmacological Development of Analgesic Drugs.. In: Silberstein SD (ed.): Psychiatric Management of Pain. *Current Pain and Headache Reports*, Philadelphia, PA., 14 (2):96-104; DOI 10.1007/s11916-010-0101-2 (2010).
  24. **Christo PJ**: Opioid Use in Cancer Pain Management, book review. For: Davis MP, Glare P, Quigley C, Hardy JR, (eds). Opioids in Cancer Pain, 2<sup>nd</sup> edition. *Journal of Pain and Symptom Management* 2010; 40 (4):627-629.
  25. **Christo PJ** (Section Editor); Williams KA, Harden N: Managing the Placebo Effect: Enhancing the Signal-to-Noise Ratio. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed): *Current Pain and Headache Reports*, Philadelphia, PA., 15 (1):35-38; DOI 10.1007/s11916-010-0162-2 (2011).
  26. **Christo PJ** (Section Editor); Stadler JA, Ellens DJ, Rosenow JM: Deep Brain Stimulation and Motor Cortical Stimulation for Neuropathic Pain. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed): *Current Pain and Headache Reports*, Philadelphia, PA., 15 (1): 8-13; DOI 10.1007/s11916-010-0161-3 (2011).
  27. **Christo PJ** (Section Editor); Dhanani NM, Caruso TJ, Carinci AJ: Complimentary and Alternative Medicine for Pain: An Evidence-based Review. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed): *Current Pain and Headache Reports*, Philadelphia, PA., 15 (1): 39-46; DOI 10.1007/s11916-010-0158-y (2011).
  28. **Christo PJ** (Section Editor); **Christo PJ**, McGreevy K: Updated Perspectives on Neurogenic Thoracic Outlet Syndrome. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed): *Current Pain and Headache Reports*, Philadelphia, PA., 15 (1):14-21; DOI 10.1007/s11916-010-0163-1 (2011).
  29. **Christo PJ** (Section Editor);**Christo PJ**, Li S, Gibson SJ, Fine P, Hameed H: Effective Treatments for Pain in the Older Patient. Anesthetic Techniques in Pain Management. In: Silberstein SD (ed): *Current Pain and Headache Reports*, Philadelphia, PA., 15 (1): 22-34; DOI 10.1007/s11916-010-0164-0 (2011).
  30. Hameed H, Hameed M, **Christo PJ**: Cancer Pain. In: Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Clinical Aspects of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
  31. Hameed H, Hameed M, **Christo PJ**: Neuropathic Pain. In: Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Clinical Aspects of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
  32. Hameed H, Hameed M, **Christo PJ**: Complex Regional Pain Syndrome. In: Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Clinical Aspects of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
  33. Williams BS, **Christo PJ**: Pain Relief in Substance Abusers. In: Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Clinical Aspects of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
  34. **Christo PJ**, Manchikanti L, Ruan X: Urine Drug Testing in Chronic Pain. In: Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Foundations of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
  35. Williams BS, **Christo PJ**: Antipyretic Analgesics: Nonsteroidals, Acetaminophen, and Phenazone Derivatives. In: Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Foundations of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011



36. Wilhelmi B, **Christo PJ**. Cancer pain assessment and consensus guidelines. In: *Analgesics for Cancer Pain*. Porreca F, King T (eds). Future Medicine, London, UK, pages 6–17 (2012).
37. Heaton S, McArthur JC, **Christo PJ**. Entrapment Syndromes (Thoracic Outlet, Carpal Tunnel, Ulnar Nerve, Radial Nerve, Lateral Femoral Cutaneous Nerve, Ilioinguinal Nerve, Peroneal Nerve, Tarsal Tunnel). In: *Neuropathic Pain: Mechanisms, Diagnosis, and Treatment*. Simpson DM, McArthur JC, Dworkin RH (eds). New York: Oxford University Press, 2012 (281-305).
38. **Christo PJ**. Management of Postherpetic Neuralgia (Shingles) in Older Adults. *The Pain Practitioner*. Pages 24-28 (Spring 2013).
39. Neufeld NJ, **Christo PJ**. Combating Cancer Pain: A look at Interventional Treatments. *Coping with Cancer*. Pg 8, July/Aug 2013.

#### Book

1. *Aches and Gains: A Comprehensive Guide to Overcoming Your Pain*. Traditional, Integrative, and Innovative Approaches By One of The Nation's Top Pain Specialists. **Paul J. Christo, MD**. Boulder, Colorado: Bull Publishing Company (2017)

#### Books, Textbooks

1. **Christo PJ** (Section Editor), Lenox B: Definitions of Chronic Pain, Evaluation of the Pain Patient, Diagnostic Imaging for the Pain Patient, Pharmacologic Approaches to Chronic Pain Treatment (non-opioid), Low Back Pain, Cervical Pain. In: Heitmiller ES, Schwengel DA (eds.): *Johns Hopkins Anesthesiology Handbook*. Philadelphia, PA: Elsevier, 2010.
2. **Christo PJ** (Section Editor), Crooks M: Substance Use Disorders and Chronic Opioid Use, Complex Regional Pain Syndrome (CRPS), Headache, Opioids in Chronic Non-Malignant Pain, Postdural Puncture Headache (PDPH). In: Heitmiller ES, Schwengel DA (eds.): *Johns Hopkins Anesthesiology Handbook*. Philadelphia, PA: Elsevier, 2010.
3. **Christo PJ** (Section Editor), Mazloomdoost D: Interventional Pain Treatments for Cancer Pain. In: Heitmiller ES, Schwengel DA (eds.): *Johns Hopkins Anesthesiology Handbook*. Philadelphia, PA: Elsevier, 2010.
4. **Christo PJ** (Section Editor), Carinci AJ: Cancer Pain and Pharmacotherapies. In: Heitmiller ES, Schwengel DA (eds.): *Johns Hopkins Anesthesiology Handbook*. Philadelphia, PA: Elsevier, 2010.
5. Bartels K, **Christo PJ**: Non-Opioid Analgesic Medications. In: Urman RD, Vadivelu N (eds.): *Pocket Pain Medicine*. Philadelphia, PA: Lippincott, Williams & Wilkins, 2011.
6. Bartels K, **Christo PJ**: Opioids. In: Urman RD, Vadivelu N (eds.): *Pocket Pain Medicine*. Philadelphia, PA: Lippincott, Williams & Wilkins, 2011.
7. Bartels K, **Christo PJ**: Implantable Devices: Spinal Cord Stimulation and Intrathecal Drug Delivery. In: Urman RD, Vadivelu N (eds.): *Pocket Pain Medicine*. Philadelphia, PA: Lippincott, Williams & Wilkins, 2011.
8. Bicket MC, **Christo PJ**. fMRI and Pain. In: *Pain – The person, the science, the clinical interface*. Armati P, Chow R (eds). IP Communications, Victoria, Australia, pages 99-106 (2015)
9. **Christo PJ**, Wilhelmi BG, Amasha RR, Raja SN: Complex Regional Pain Syndrome. In: Staats PS, Wallace MS, eds. *Pain Medicine and Management: Just the Facts*. New York, NY: McGraw-Hill, (2015)
10. Hobelmann G, **Christo PJ**: Neuropathy and Thoracic Outlet Syndrome. In: *Integrative Pain Management*. Bonakdar RA, Sukiennik AW, (eds). New York, NY: Oxford University Press, pages 109-118), (2016)

#### Book Editor

1. Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Foundations of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
2. Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Clinical Aspects of Pain Medicine and Interventional Pain Management: A Comprehensive Review*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
3. Manchikanti L, **Christo PJ**, Trescot A, Falco FJE (eds): *Pain Medicine and Interventional Pain Management: Board Review Self-Assessment*, Paducah, KY: American Society of Interventional Pain Physicians, 2011
4. **Christo PJ**, Fudin J, Gudín J (eds): *Opioid Prescribing and Monitoring: How to Combat Opioid Abuse and Misuse Responsibly*, Montclair, NJ: Vertical Health, 2016
5. **Christo PJ**, Fudin J, Gudín J (eds): *Opioid Prescribing and Monitoring: Primary Care Models for Pain Management*, Montclair, NJ: Vertical Health, 2017
6. **Christo PJ**, Cordts GA (eds): *Effective Treatments for Pain in the Older Adult*, New York, New York: Springer, 2019

#### Continuing Medical Education (CME) Reviewer

1. Clinical Content Review and Validation, Online Monograph: *Optimizing Chronic Pain Management in Elderly Persons: Integrating Pharmacokinetics and Pharmacodynamics*, Dannemiller Foundation, 3/2010.
2. Faculty Reviewer, *Pain Management at the End of Life*, InforMed, July 2012
3. Faculty Reviewer, *Pain: Current Understanding of Assessment, Management, and Risk Reduction*, InforMed, August 2013
4. Faculty Reviewer, *Caring for Patients at the End of Life*, InforMed, September 2016
5. Faculty Reviewer, *Extended Release/Long Acting Opioid Risk Evaluation & Mitigation Strategy (REMS) Education*, InforMed, July 2016
6. Faculty Reviewer, *Prescriber Education for Opioid Analgesics (REMS) Education*, InforMed, June 2018
7. Faculty Reviewer, *Caring for Patients at the End of Life*, InforMed, March 2020
8. Faculty Reviewer, *Alternatives to Opioids for Pain Management*, InforMed, April 2020
9. Faculty Reviewer, *Effective Management of Acute and Chronic Pain in Primary Care*, InforMed CME, July 2021
10. Faculty Review, *Alternative to Opioids for Pain Management*, InforMed CME, August 2021

#### OTHER MEDIA

*Pain Assessment and Management Course, 2007, Johns Hopkins Medicine Interactive*  
Development of online course and questions for physicians and nurses  
Development of online course and questions for allied healthcare professional

#### Teaching

March 2006, *Multidisciplinary Approaches to Pain Care*, Pain Curriculum Workshop, Second Year Medical Students, **Presenter/Facilitator**, Johns Hopkins University School of Medicine

March 2007, *Multidisciplinary Approaches to Pain Care*, Pain Curriculum Workshop, Second Year Medical Students, **Presenter/Facilitator**, Johns Hopkins University School of Medicine

March 2008, *Multidisciplinary Approaches to Pain Care*, Pain Curriculum Workshop, Second Year Medical Students, **Presenter/Facilitator**, Johns Hopkins University School of Medicine

March 2009, *Multidisciplinary Approaches to Pain Care*, Pain Curriculum Workshop, Second Year Medical Students, **Presenter/Facilitator**, Johns Hopkins University School of Medicine

March 2010, *Multidisciplinary Approaches to Pain Care*, Pain Curriculum Workshop, Second Year Medical Students, **Presenter/Facilitator**, Johns Hopkins University School of Medicine

May 2010, Pain Intercession Course, First Year Medical Students, **Preceptor** for Pain Assessment, Pain and Impairment, Pain and Addiction Sessions, Johns Hopkins University School of Medicine

June 2020, *Topics in Interdisciplinary Medicine: Pain Course* (Genes to Society Curriculum), First-Year Medical Students, **Group Leader**, Johns Hopkins University School of Medicine

**Continuing Medical Education (CME) Course Director:**

1. Administrative Editor and Course Director, *Practical Reviews in Anesthesiology*, 2004-present
2. Program Director, *Exploring the Evolving Role of Botulinum Neurotoxin Type A in Pain Management*, Practice with the Experts (National Presentation Series), 2004
3. Program Director, *Practice with the Experts: Strategies for Pain Management with Botulinum Neurotoxin Therapy* (National Presentation Series), 2005
4. Course Director, *Multidrug Therapy for Chronic Pain, Scientific and Clinical Considerations*, Satellite Symposium, 27<sup>th</sup> Annual Scientific Meeting of the American Pain Society (APS), Tampa, FL, May 2008
5. Course Director, *Multidrug Therapy for Chronic Pain, Scientific and Clinical Considerations, Multimedia Activity*, 27<sup>th</sup> Annual Scientific Meeting of the American Pain Society (APS), September 2008
6. Course Director, *Clinical and Pharmacologic Perspectives on Opioid Use, Evidence-Based Strategies for Risk Assessment and Attenuation*, Satellite Symposium, 27<sup>th</sup> Annual Scientific Meeting of the American Pain Society (APS), Tampa, FL, May 2008
7. Course Director, *Pain and Aging*, Satellite Symposium, 25<sup>th</sup> Annual Meeting of the American Academy of Pain Medicine (AAPM), Honolulu, HI., January 2009
8. Program Director, *Case Continua in Fibromyalgia: Peer Insights in the Management of Fibromyalgia Syndrome*, National Internet CME activity incorporating a Virtual Grand Rounds Program, Johns Hopkins University School of Medicine, Nov. 2008 – Nov. 2010
9. Course Chair and Director, *Clinical Concepts in Pain and Aging*, Internet (*Medscape.com*) and *Epocrates* educational programs, Feb. 2009-Feb. 2010
10. Course Director, *Ameliorating Low Back Pain in the Primary Care Setting: A Case-based Approach to Proper Assessment and Treatment Selection*, Online Learning Tool, PeerView Institute for Medical Education Performance Improvement CME activity, September 2010-September 2011.

11. Course Director, *Treating Low Back Pain without Opioids*, Dannemiller Healthcare Education, June 2018 (<https://cme.dannemiller.com/videos/accreditation?id=642>)
12. Course Director, *OTC Analgesics: who, what, which and how much!* Dannemiller Healthcare Education, November 2018

**Continuing Medical Education (CME) Session Chair:**

1. "Regional Anesthesia," *The 6<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine and Regional Anesthesia Update*, Baltimore, MD, August 2000
2. "Spinal Cord Stimulation/Intrathecal Therapy," *The 7<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine Update in conjunction with the Southern Pain Society Annual Meeting*, Baltimore, MD, August 2001
3. "Neural Blockade," "Advanced Stimulation Techniques," "IDET, Discography and Vertebroplasty," *The 8<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine Update in conjunction with the 6<sup>th</sup> Annual American Neuromodulation Society Meeting*, Orlando, FL, May 2002
4. "Membrane-Stabilizing Agents to Treat Pain," "CRPS and Thalidomide: Do cytokines Play a Role in RSD," "Herbal Medicine," Headaches: The Role of the Interventionalist," "Topical Agents: From Lidocaine to Ketamine and Beyond," "Complications of Regional Anesthesia," *The 9<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine Update in conjunction with the 7<sup>th</sup> Annual American Neuromodulation Society Meeting*, Orlando, FL, May, 2003
5. "Chronic Pain and Opioid Use: Best Practices in the Current Environment", *American Academy of Pain Management 27<sup>th</sup> Annual Meeting*, San Antonio, TX, September 2016

**Continuing Medical Education (CME) Course Instructor and Lectures:**

1. "Opioid Therapy Efficacy and Side Effects," *8<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine Update in conjunction with the 6<sup>th</sup> Annual American Neuromodulation Society Meeting*, Orlando, FL, May 2002
2. "Side Effects of Opioids," *9<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine Update in conjunction with the 7<sup>th</sup> Annual American Neuromodulation Society Meeting*, Orlando, FL, May 2003
3. "Management of Acute Pain in the setting of Chronic Pain," *National Association of Orthopaedic Nurses, Baltimore Chapter Annual Meeting*, Baltimore, MD, March 2004
4. "Opioid Efficacy and Toxicity", *10<sup>th</sup> Annual Johns Hopkins Multidisciplinary Pain Medicine Update*, Baltimore, MD, August 2004
5. "Post-Operative Analgesia and Interventions", *The Johns Hopkins Department of Orthopedic Surgery Anesthesia Symposium*, Baltimore, MD, September 2004
6. "Interventional and Pharmacotherapeutic Management of Acute and Chronic Pain", *Pain and Symptom Management Conference for Curative, Palliative, and End of Life Care at Winchester Medical Center*, Winchester, VA. October 2004
7. "Procedural Pain Management", *Current Concepts in Cancer Pain Management: A Multidisciplinary Case-Based Symposium*, The Johns Hopkins Center for Cancer Pain Research, Baltimore, MD, October 2004
8. "Peripheral Nerve Blocks (Sympathetic Blocks) in the Treatment of Chronic Pain", *Workshop at the Annual Meeting of the American Society of Anesthesiologists*, Las Vegas, NV. October 2004
9. "Interventional and Pharmacotherapeutic Management of Pain", *General Internal Medicine/Primary Care Clinical Conference*, Johns Hopkins Bayview Medical Center, Baltimore, MD., April 2005
10. "Neurolytic Procedures", *Current Concepts in Cancer Pain Management Symposium*, The Center for Cancer Pain Research at The Johns Hopkins University School of Medicine, Baltimore, MD., November 2005

11. "How Do I Treat Neuropathic Pain and Complex Regional Pain Syndrome", Panel Discussant, *Annual Meeting of the American Society of Anesthesiologists*, Orlando, FL., 2008.
12. "Complex Regional Pain Syndrome: What It Is & How to Treat It", Dialogue With the Experts: An Exchange of Ideas. *25<sup>th</sup> Annual Meeting of the American Academy of Pain Medicine (AAPM)*, Honolulu, HI., January 2009.
13. "Intrathecal Pump Placement" Cadaver Course, *American Society of Anesthesiologists Annual Meeting*, New Orleans, LA., October 2009
14. "Cancer Pain", *Comprehensive Pain Medicine and Interventional Pain Management Board Review Course*, American Society of Interventional Pain Physicians, Chicago, IL., August 2010
15. "Geriatric Pain Management", *Comprehensive Pain Medicine and Interventional Pain Management Board Review Course*, American Society of Interventional Pain Physicians, Chicago, IL., August 2010
16. "Lumbar, Caudal, Cervical and Thoracic Epidural Injections, Adhesiolysis", *American Society of Anesthesiologists Annual Meeting*, San Diego, CA. October 2010.
17. "Visceral and Urogenital Pain", *Comprehensive Pain Medicine and Interventional Pain Management Board Review Course*, American Society of Interventional Pain Physicians, St. Louis, MO., August 2011
18. "Cancer Pain", *Comprehensive Pain Medicine and Interventional Pain Management Board Review Course*, American Society of Interventional Pain Physicians, St. Louis, MO., August 2011
19. "Expert Panelist for "The Addiction Performance Project", National Institute on Drug Abuse, Washington, D.C., August 2011
20. "Neurolysis: Chemical, Cryoanalgesia, and Radiofrequency in Pain Management", *Dannemiller Pain Review Course*, San Antonio, Texas, July 2012
21. "Opioid Pharmacology", *Dannemiller Pain Review Course*, San Antonio, Texas, July 2012
22. "NSAID (Non-Steroidal Anti-inflammatory Drugs) Pharmacology", *Dannemiller Pain Review Course*, San Antonio, Texas, July 2012
23. "Urine Drug Testing in Pain Management: Challenges in Assessment of Adherence", Department of Pathology Grand Rounds, *Johns Hopkins Medicine*, June 2016
24. "Fibromyalgia", *ReachMD*, March 2017

## CLINICAL ACTIVITIES

### Certifications

- 2001 Diplomat, American Board of Anesthesiology
- Recertified 7/2011
- 2002 Subspecialty Certification in Pain Medicine by the American Board of Anesthesiology
- Recertified 10/3/2009
- 2003 Diplomat, American Board of Pain Medicine

## ORGANIZATIONAL ACTIVITIES

### Institutional Administrative Appointments

- 2006-2008 *Joint Committee on Admissions*, The Johns Hopkins University School of Medicine
- 2002-2006 Johns Hopkins University School of Medicine, Department of Anesthesiology and Critical Care, *Education Committee*
- 2002-2006 Johns Hopkins University School of Medicine, Department of Anesthesiology and Critical Care Medicine, *Clinical Competence Committee*

2004-2006 Johns Hopkins University School of Medicine, Department of Anesthesiology and Critical Care Medicine, *Performance Improvement Committee*

2008-2010 *Institutional Task Force on Pain Management*, Johns Hopkins University School of Medicine

**Editorial Activities**

2004-2008 Editorial Advisory Board, *Pain Physician*

2009-present Associate Editor, *Pain Physician*

2010-present Editorial Board, *Pain Management*

2004-present Consultant Reviewer, *Regional Anesthesia and Pain Medicine*

2005-present Ad Hoc Reviewer, *The Clinical Journal of Pain*

2006-present Peer Reviewer, Maryland Society of Anesthesiologists (Maryland Board of Physician Quality Assurance)

2006-present Manuscript Reviewer, *Pain Medicine*

2007-present Referee Panel for the American Academy of Pain Medicine (AAPM) Journal, *Pain Medicine*

2007-2017 Editorial Board Member, *The Open Geriatric Medicine Journal*

2009-present Reviewer, *The Journal of Pain*

2012- Editorial Board, *PAINWeek Journal*

2012- Editorial Board Member, *Chronic Pain Perspectives*

**Advisory Committees, Review Groups/Study Sections**

2003-2010 Association of Pain Program Directors (*American Society of Regional Anesthesia & Pain Medicine*)

2006-2011 Coding and Reimbursement Committee, *American Academy of Pain Medicine*

2007-2008 Committee on Pain Medicine, *American Society of Anesthesiologists*

2007-2011 Liaison Representative for the External Affairs Committee, *American Academy of Pain Medicine*

2008 American Journal of Cardiology Editor's Consensus on Selective and Nonselective Nonsteroidal Anti-inflammatory Drugs and Cardiovascular Risk

2008-2009 Program Planning Committee, *American Academy of Pain Medicine Annual Meeting*, Honolulu, HI, January 2009

2008-2009 Commercially Supported Symposia Committee, *American Academy of Pain Medicine Annual Meeting*, Honolulu, HI, January 2009

2008-2010 Co-Chair, Subcommittee on Clinical Matters, Special Interest Group on Pain in Older Persons, *International Association for the Study of Pain (IASP)*.

2008-2010 Pain.com Advisory Board, *Dannemiller Memorial Educational Foundation*

2008-2010 Steering Committee for the Physician Clinical Support System-Methadone, *American Pain Society representative*

2009-2010 Program Planning Committee, *American Academy of Pain Medicine Annual Meeting*, San Antonio, TX, January 2010

2009-2011 Site Selection Committee, *American Academy of Pain Medicine*

2009 Academic Advisory Committee, *1<sup>st</sup> International Comprehensive Pain Management Conference*, Tawam Hospital, Al Ain, United Arab Emirates.

2010- Education Committee, *Dannemiller Memorial Educational Foundation*

2010- Expert Consensus Panel on Developing Guidelines and Recommendations for Monitoring Drug Utilization for Patients Prescribed Opioids, *Ameritox*

2010- Scientific Medical Advisory Board, *American Thoracic Outlet Syndrome*

2010-2012 Advisory Panel/Thought Leader for development of Patient Evaluation Resource For Opioid Risk Management (PERFORM), *Springer Healthcare and Purdue Pharma*

2011-2012 Regional Stakeholder, *PAINS* project, sponsored by the Center for Practical Bioethics

2011 Dannemiller Advisory Board

2011- Advisory Board, *Current Pain Perspectives (CHPP)*, Quadrant HealthCom, Inc

2011 *Archimedes Regional Advisory Board Webcast*, Faculty Presenter

2011-	<i>American Pain Society Opioid REMS Educational Initiative</i>
2013	<i>American Pain Society Educational Advisory Committee</i>
2014-2015	<i>Nominating Committee, American Pain Society</i>
2015	<i>Education Advisory Committee, American Academy of Pain Management</i>
2015	<i>Advisory Board, NeuroMetrix, Inc</i>
2015-	<i>Men's Health Magazine Medical Advisory Board</i>
2016	<i>Complex Regional Pain Syndrome Advisory Board Meeting, Grunenthal, Inc</i>
2016-	<i>Global Pain Faculty Member, GSK Consumer Healthcare</i>
2016-2017	<i>Public Education, Outreach, and Website Committee, International Neuromodulation Society</i>
2017	<i>Expert Advisory Panel to Transform Opioid Use &amp; Pain Management, OptumLabs, UnitedHealth Group</i>
2017	<i>PAINS Advisory Committee, Center for Practical Bioethics</i>
2017	<i>Optum Labs (UnitedHealth Group) Expert Advisory Panel</i>
2018-	<i>Steering Committee, Alliance for Balanced Pain Management</i>
2020	<i>Member, U.S. Tanezumab ANS Pain Advisory Board, Lilly USA</i>
2020	<i>Member, Clinical Development Strategy Advisory Board for Therapeutic siRNAs for Severe Chronic Pain, Lilly USA</i>
2020	<i>Member, Advil Covid-19 Pain Management Advisory Board, GSK Consumer Healthcare</i>
2020	<i>Member, Y-mAbs Advisory Board for Pain, Y-mAbs Therapeutics</i>
2021	<i>Member, Neurana Pharmaceuticals Advisory Board</i>
2021	<i>Member, Neumentum Advisory Board</i>

#### **Board of Directors**

2015-2019	<i>Academy of Integrative Pain Management</i>
2016-	<i>American Pain Association</i>
2018-	<i>Alliance for Patient Access</i>

#### **Professional Society Leadership:**

2015-2017	<i>Secretary, Board of Directors, Academy of Integrative Pain Management</i>
2017-2019	<i>Vice President, Board of Directors, Academy of Integrative Pain Management</i>

#### **Professional Societies:**

- International Spinal Injection Society*
- American Academy of Pain Medicine*
- American Society of Interventional Pain Physicians*
- American Pain Society*
- North American Neuromodulation Society*
- American Medical Association*
- American Society of Anesthesiologists*
- American Society of Regional Anesthesia and Pain Medicine*
- Maryland Society of Anesthesiologists*
- The Johns Hopkins Medical and Surgical Association*
- American Society of Addiction Medicine*

#### **Conference Organizer, Session Chair**

December 2005	<i>Co-Conference Chair, 11<sup>th</sup> Annual Pain Medicine Update for Pain Specialists and Primary Care Providers, The Johns Hopkins University School of Medicine, Department of Anesthesiology and Critical Care Medicine, Division of Pain Medicine, Baltimore, MD</i>
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- July 2014 Chair, *Pain Care for Primary Care*, American Pain Society and The Journal of Family Practice, Orlando, FL
- July 2015 Chair, *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, Orlando, FL
- July 2016 Chair, *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, Orlando, FL
- August 2017 Chair, *Pain Care for Primary Care Annual Meeting (East)*, American Pain Society and The Journal of Family Practice, Orlando, FL
- October 2017 Course Chair, "What's Appropriate and What's No? Safe Opioid Prescribing in a World of Ever-Changing Regulations", *Academy of Integrative Pain Management Annual Meeting*, San Diego, CA
- November 2017 Chair, *Pain Care for Primary Care Annual Meeting (West)*, American Pain Society and The Journal of Family Practice, San Francisco, CA
- January 2018 "Where are we in the Opioid Crisis? A Panel Discussion of Healthcare Provider's Perspectives", Blaustein Grand Rounds, Johns Hopkins University School of Medicine, Baltimore, MD
- November 2018 Chair, *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, San Diego, CA
- November 2018 Moderator for Panel Discussion, "Innovative Solutions: Medical Device Technology", *Balanced Pain Management National Summit*, Washington, D.C.
- November 2019 Chair, *Pain Care for Primary Care Annual Meeting*, Orlando, FL
- December 2019 Moderator for Panel Discussion, "Patient-Centered Care: Principles in Practice", *Balanced Pain Management National Summit*, Washington, D.C.

### **Consultantships**

- 2007-2008 Global mentorship for pain center development/expansion at Tawam Hospital, United Arab Emirates, United Arab Emirates University, Dr. Rabiah Noueihed, Department of Anaesthesia, United Arab Emirates University.

### **RECOGNITION**

#### **Visiting Professorships:**

- April 2007 *University of Notre Dame, Center for Health Sciences Advising, "Pain Medicine as a Career."*
- May 2011 *American Academy of Pain Medicine/Pfizer Visiting Professor in Pain Medicine ; University of Louisville School of Medicine. One of 8 national pain experts selected for 3 days of educational exchange.*
- September 2015 *University of Notre Dame, Center for Health Sciences Advising, College of Science, "Pain Medicine and Hopkins Medicine"*



## Awards, Honors:

### Professional Society Awards:

- 2008-2009 **Fellow, Mayday Pain and Society Fellowship Program: A Media and Policy Initiative**  
([www.maydayfellows.org](http://www.maydayfellows.org)).
- One of six pain experts selected from the U.S. and Canada to advocate for better pain care by raising the visibility of the global impact of pain with the media and policymakers
- 2014 **The Pain Community “Hero” (Patient Advocacy Association)**
- One practitioner selected each year by the leaders of the organization for demonstrated achievement in advancing the cause of patients in pain.
- 2016 **The John and Emma Bonica Public Service Award (American Pain Society)**
- One clinician selected each year by the leaders of the organization to honor outstanding contributions to the field of pain medicine through public education, dissemination of information, and public service.
- 2016 American Pain Society Awards Committee
- 2016 **Pain Educator of the Year (American Society of Pain Educators)**
- One practitioner selected each year by the leaders of the organization to recognize outstanding commitment to clinical pain practice and pain education.
- 2018 **Patient Advocacy Award (American Academy of Pain Medicine)**
- One healthcare professional selected each year by the leaders of the organization to honor advocacy efforts for the appropriate evaluation and treatment of patients suffering from pain.
- 2021 **Top Expert in the World on Chronic Pain (Expertscape Global Physician Directory)**
- Top 0.47% of experts in the world based on peer-reviewed publications in scientific journals

### Media Awards:

- 2003, 2006 America’s Top Physicians, Pain Medicine: *Guide to America’s Top Physicians*, Consumer’s Research Council of America.
- 2007 America’s Top Anesthesiologists: *Guide to America’s Top Anesthesiologists*
- 2007 Top Doctor in Pain Medicine/Anesthesiology: *Baltimore Magazine*, Top Doctors
- 2007-2008 *Best Doctors in America*, Best Doctor Physician
- 2008 America’s Top Physicians, Anesthesiology: *Guide to America’s Top Physicians*, Consumer’s Research Council of America.
- 2011-2012 American’s Top Doctors, Castle Connolly
- 2011-2012 70 Best Pain Management Physicians in America, *Becker’s ASC Review*
- 2011-2012 Super Doctor (Anesthesiology) for the Washington, DC-Baltimore-Northern Virginia area
- 2011-2012 Top Doctor for Pain Management, *US News & World Report*
- 2011-2012 Best Doctors in America
- 2012-2013 150 Pain Management Physicians to Know, *Becker’s Spine Review*
- 2012-2013 Super Doctor for the Washington, DC-Baltimore-Northern Virginia area
- 2012 Top Doctors in Pain Management: *Baltimore Magazine*, Top Doctors
- 2013 Association of University Anesthesiologists
- 2014 Best Doctors in America
- 2014 American’s Top Doctors, Castle Connolly
- 2014 America’s Top Physicians
- 2020 Top Pain Medicine Specialist (*Maryland Magazine* Top Doctors)
- 2020 America’s Top Doctors, Castle Connolly
- 2020 Best Doctors in America
- 2021 Top Pain Management Specialist (*Maryland Magazine* Top Doctors)

**KEYNOTE SPEAKER:**

1. “Interdisciplinary Care and Safe Opioid Prescribing”, *Montana Pain Initiative 5<sup>th</sup> Annual Conference, “Front Line Pain Management: Neuroplastic Transformation, Interdisciplinary Care, Safe Prescribing”*, Bozeman, MT., October, 2011.
2. “Diagnosis and Treatment of Chronic Pain-New Aspects”, *Masterclass on the Diagnosis and Treatment of Chronic Pain, Chronic Pain Ireland First Annual Conference at Croke Park*, Dublin, Ireland, December 2011
3. “Innovations in Pain Care for the 21<sup>st</sup> Century: From X-rays to Radio Waves”, *Healthcare, Leadership, and Innovation Executive Education Program*, The Anne Arundel Health System, Johns Hopkins Carey Business School, April 2012
4. “Innovations in Pain Care for the 21<sup>st</sup> Century: From X-Rays to Radio Waves”, *The Dr. Tom Dooley Society of The University of Notre Dame & Memorial Hospital & Health System*, South Bend, IN, October 2012
5. “Pain: The Human and Economic Crisis”, *The Dr. Tom Dooley Society of The University of Notre Dame, College of Science*, South Bend, IN, September 2015
6. “Pain Management: Clinical and Regulatory Considerations”, *Department of Health and Human Services (Centers for Medicare and Medicaid Services)/National Survey Executives Training Institute*, Baltimore, MD, April 2016
7. “Chronic and Post-Operative Pain”, *The Role of the Cardiothoracic Surgeon in Pain Management: Innovative Solutions for the Management of Post-Thoracotomy Pain, American Association for Thoracic Surgery Annual Meeting*, Baltimore, MD., May 2016
8. “Pain Care and Innovations for the 21<sup>st</sup> Century”, *World Academy of Pain Medicine Ultrasonography Annual Meeting and Review Workshop*, Coral Gables, Florida, February 16-18, 2018
9. “Pain Care and Innovations for the 21<sup>st</sup> Century”, *13th Annual Mediterranean Multidisciplinary Pain Forum*, Menorca, Spain, May 5, 2018
10. “Opioids May Be Appropriate for Treating Chronic Pain”, *25<sup>th</sup> Annual Thomas A. Pitts Memorial Lectureship In Medical Ethics*, Medical University of South Carolina Institute of Human Values in Health Care, Charleston, South Carolina, April 4, 2019

**CORPORATE SPEAKING:**

1. “Cure Your Common Productivity Killers”, *New York Life*, Timonium, Maryland, October 2013

**INVITED LECTURES:**

1. “Advanced Strategies for Pain Treatment”, *United Auto Workers-Ford On-Site Rehabilitation Center Program*, Educational and Program Development Conference, Detroit, MI., November 2005
2. “Understanding Pain and Current Therapies”, *11<sup>th</sup> Annual A Women’s Journey*, Johns Hopkins Medicine, Baltimore, MD., November 2005
3. “Interventional Approach to Neuropathic Pain”, *Second International Rare Neuroimmunologic Disorders Symposium*, Johns Hopkins Medicine, Baltimore, MD., July 2006

4. "Low Back Pain: A Clinical Perspective", *Emerging Technologies in Spine Meeting*, Abbott Spine, Las Vegas, NV., August 2006
5. "Neurolytic Procedures" for Cancer Pain, *Current Concepts in Cancer Pain Management: A Multidisciplinary Case-Based Symposium*, Johns Hopkins Medicine, Baltimore, MD., October 2006
6. "Chronic Pain and the Discovery of Relief", *Johns Hopkins Medicine Pain Informational Session*, Johns Hopkins Hospital, Baltimore, MD., February 2007
7. "Spinal Cord and Peripheral Nerve Stimulation: Indications and Outcomes", *American Academy of Pain Medicine 23<sup>rd</sup> Annual Meeting*, New Orleans, LA., February 2007
8. "The Bull's Eye: Intrathecal Infusion Therapies", *American Academy of Pain Medicine 23<sup>rd</sup> Annual Meeting*, New Orleans, LA., February 2007
9. "Pain Management in Cancer Patients: Nerve/Neurolytic Blocks and Implantable Therapies", *International Conference on Recent Advances in Clinical Oncology*, Al Ain, United Arab Emirates, United Arab Emirates University and Tawam Hospital, February 2007
10. "Pain Management in Malignant Disease", *International Conference on Recent Advances in Clinical Oncology, Pre-Conference Workshop*, Al Ain, United Arab Emirates, United Arab Emirates University and Tawam Hospital, February 2007
11. "Pain Management in Malignant Disease: Medical and Interventional Strategies", *Tawam Hospital Grand Rounds*, Al Ain, United Arab Emirates, February 2007
12. "Pain Management in Cancer Patients: Nerve/Neurolytic Blocks and Implantable Therapies", *Continuing Medical Education Seminar, Department of Anesthesiology, Critical Care Medicine and Pain Therapy*, Tawam Hospital, Al Ain, United Arab Emirates, February 2007
13. "Intrathecal Infusion Therapies & Implantable Drug Delivery Systems", *Multidisciplinary Blaustein Pain Conference*, Departments of Neurosurgery, Neurology, Psychiatry; Johns Hopkins Medicine, December 2007
14. "How Do I Treat Neuropathic Pain and Complex Regional Pain Syndrome", Panel Discussant, *American Society of Anesthesiologists Annual Meeting*, Orlando, FL, October 2008.
15. Christo, PJ: New procedural development for analyzing MRI brain images in schizophrenic twins. National Institutes of Health, Bethesda, MD, August, 1992.
16. Christo, PJ, Massey, D: Fluorescence in-situ hybridization (FISH). Southeast Regional Genetics Group, Pawleys Island, SC, June, 1994.
17. Chaudry V, Christo P, Raja S: Is small-fiber painful neuropathy sympathetically mediated? American Association of Electrodiagnostic Medicine, Toronto, Canada, November, 2002.
18. Brummett CM, Merritt S, Hurley RW, Klick BA, Christo PJ: Sexual function in chronic pain patients. A survey study. *American Society of Regional Anesthesia and Pain Medicine Annual Meeting and Workshops*, Playa del Carmen, Mexico, May 2008.
19. Christo PJ, Carinci AJ, Christo DK, Freischlag, JA: CT-guided Anterior Scalene Botulinum Toxin injection for Thoracic Outlet Syndrome. *American Society of Anesthesiologists Annual Meeting*, Orlando, FL, October 2008.
20. "Pain Management: Interventions and Risks", *Physician Insurers Association of America (PIAA) Underwriting Workshop*, Baltimore, MD, September 2008.
21. "Spinal Cord Stimulation", *Medtronic Neuromodulation Cadaver Lab*, Union Memorial Hospital, Baltimore, MD, October 2008

22. Christo PJ, Carinci AJ, Christo DK, Freischlag, JA: CT-guided Anterior Scalene Botulinum Toxin injection for Thoracic Outlet Syndrome. *25<sup>th</sup> Annual Meeting of the American Academy of Pain Medicine (AAPM), Honolulu, HI., January 2009.*
23. "Spinal Cord Stimulation: Indications and Evidence-Based Outcomes", *Fourth Mediterranean Conference Against Pain, Menorca, Spain, May 2009*
24. Goff B, Hameed H, Ky P, Christo PJ, Hurley R: Narcosis Following Catheter-tip Migration and Subsequent Pump Mechanism Failure: Experience with and Infusaid-400 Intrathecal Drug Delivery System. *17<sup>th</sup> Annual Meeting of the International Spine Intervention Society (ISIS), Toronto, Canada. July 2009.*
25. "A Case-Based Approach to Pain and Aging for Family Physicians", *American Academy of Family Practice Scientific Assembly, Boston, MA., October 2009*
26. "Opioid Therapy for Patients with Pain: Strategies for Risk Assessment and Management", *Best Practices in Primary Care Meeting, Rosemont, IL., November 2009.*
27. "Intrathecal Drug Delivery Systems: Advancing Opioid and Non-Opioid Therapies" (Moderator), *American Academy of Pain Medicine 26<sup>th</sup> Annual Meeting, San Antonio, TX., February 2010.*
28. "Intrathecal Drug Delivery Systems: History, Patient Selection, Evidence, and Complications" (Faculty), *American Academy of Pain Medicine 26<sup>th</sup> Annual Meeting, San Antonio, TX., February 2010.*
29. "Overview: Nerve Blocks, Implantations, Non-Operative Management of Neck & Low Back Pain", *Spinal Disorders: Updates in Diagnosis and Management for the Primary Care Physician, The Johns Hopkins University School of Medicine, Baltimore, MD., April 2010*
30. "An Overview of Nerve Blocks, Pain Pumps, and Other Interventions for Severe Pain", *The 55<sup>th</sup> Annual Tumulty Topics in Clinical Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD., May 2010.*
31. Case Study Mentor/Small Group Discussion Facilitator; *Fundamentals of Pain Management: A Primer for Residents and Fellows, American Pain Society Annual Meeting, Baltimore, MD., May 2010.*
32. "Common Pain Syndromes in Older Adults", *PAINWEEK, Las Vegas, NV., September 2010*
33. "Treatment Considerations in Relation to Concurrent Pharmacology for Older Adults", *PAINWEEK, Las Vegas, NV., September 2010*
34. "An Overview of Nerve Blocks, Pain Pumps, and Other Anesthesia Interventions for Severe Pain", *Current Clinical Issues in Primary Care, Pri-Med Mid Atlantic Conference and Exhibition, Baltimore Convention Center, 2010*
35. "Common Pain Syndromes in Older Adults", *American Academy of Pain Medicine 27<sup>th</sup> Annual Meeting (Essentials Course), National Harbor, MD (Washington, DC), March, 2011.*
36. "Complex Regional Pain Syndrome", *American Academy of Pain Medicine 27<sup>th</sup> Annual Meeting (Essentials Course), National Harbor, MD (Washington, DC), March, 2011.*
37. "Controlling Pain in the 21<sup>st</sup> Century: The Quest for Pain Relief", *University of Louisville School of Medicine, Department of Anesthesiology and Perioperative Medicine Grand Rounds, May 2011.*
38. "Complex Regional Pain Syndrome", *University of Louisville School of Medicine, Department of Anesthesiology and Perioperative Medicine Resident Conference, May 2011.*
39. "Pain Management for the Primary Care Physician", *Dannemiller Memorial Educational Foundation, Orlando, FL., June 2011.*
40. "Risk Assessment and Management of Pain Patients on Opioid Therapy", *American Academy of Family Practice Scientific Assembly, Orlando, FL, Sept., 2011*

41. "Spinal Cord Stimulation and Peripheral Nerve Stimulation: Indications and Outcomes", *International Pain and Palliative Care Meeting*, Department of Pain and Palliative Medicine at the National Health Institute of Medical Sciences and Nutrition, Mexico City, Mexico, Sept., 2011.
42. "Effective Pain Treatments for Older Adults", *International Pain and Palliative Care Meeting*, Department of Pain and Palliative Medicine at the National Health Institute of Medical Sciences and Nutrition, Mexico City, Mexico, Sept., 2011.
43. "Innovations in Pain Care for the 21<sup>st</sup> Century: From X-Rays to Radio Waves", *Department of Medicine Grand Rounds*, King Edward VII Memorial Hospital, Hamilton, Bermuda, June 2012
44. "Common Pain Syndromes in Older Adults", *PAINWEEK*, Las Vegas, NV., September 2012
45. "Treatment Considerations in Relation to Current Pharmacology in Older Adults", *PAINWEEK*, Las Vegas, NV., September 2012
46. "Urine Drug Testing", *PAINWEEK*, Las Vegas, NV., September 2012
47. "Recommendations for Urine Drug Monitoring as a Component of Opioid Therapy in the Treatment of Chronic Pain: A Panel Discussion", *PAINWEEK*, Las Vegas, NV., September 2012
48. "X-Rays to Radio Waves", *University of Notre Dame College of Science and Engineering: Engineering, Science, and Technology Entrepreneurship Graduate Program*, South Bend, IN., October 2013
49. "An Update on Complex Regional Pain Syndrome", *American Academy of Pain Management 24<sup>th</sup> Annual Clinical Meeting*, Orlando, FL., October 2013
50. "New Perspectives on Neurogenic Thoracic Outlet Syndrome", *American Academy of Pain Management 24<sup>th</sup> Annual Clinical Meeting*, Orlando, FL., October 2013
51. "Advanced Techniques in Pain Medicine: Spinal Cord Stimulation, Intrathecal Therapy, Botulinum Toxin for Thoracic Outlet Syndrome", *American Academy of Pain Medicine 30<sup>th</sup> Annual Meeting*, Phoenix, AZ., March 2014
52. "Managing Risk, Pain, and Addiction", *American Academy of Pain Medicine 30<sup>th</sup> Annual Meeting*, Phoenix, AZ., March 2014
53. "Interventional Approaches to Pain", *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, Orlando, FL, July 2015
54. "Visceral Pain", *PAINWEEK*, Las Vegas, NV., September 2015
55. "Neuromodulation", *American Academy of Pain Management Annual Meeting*, Washington, DC., September 2015
56. "Future Possibilities for Treatment of Complex Regional Pain Syndrome", *Complex Regional Pain Syndrome Advisory Board Meeting*, Grunenthal, Inc., April 2016
57. "Interventional Approaches for Pain: Traditional and Emerging", *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, Orlando, FL, July 2016
58. "Debate: Opioids for Chronic Pain? No", *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, Orlando, FL, July 2016
59. "The Medical Stasi: Is Risk Management for Controlled Substances Destroying the Provider-Patient Relationship?" *PAINWEEK*, Las Vegas, NV., September 2016
60. "Interventional Pain Management: Injections, Nerve Blocks, Pumps, and Spinal Cord Stimulation", *PAINWEEK*,

Las Vegas, NV., September 2016

61. "Opioids: Risks and Remedies", *American Academy of Pain Management 27<sup>th</sup> Annual Meeting*, San Antonio, TX., September 2016
62. "Update on Complex Regional Pain Syndrome", *American Academy of Pain Management 27<sup>th</sup> Annual Meeting*, San Antonio, TX., September 2016
63. "Overcoming Pain", *22<sup>nd</sup> annual A Women's Journey*, Johns Hopkins Medicine, Baltimore, MD. November 2016
64. "Complex Regional Pain Syndrome", *Pain Care for Primary Care Annual Meeting (East)*, American Pain Society and The Journal of Family Practice, Orlando, FL, August 2017
65. "Interventional Approaches for Pain: Traditional and Emerging", *Pain Care for Primary Care Annual Meeting (East)*, American Pain Society and The Journal of Family Practice, Orlando, FL, August 2017
66. "Debate: Should We Be Prescribing Opioids for Pain Management", *Pain Care for Primary Care Annual Meeting (East)*, American Pain Society and The Journal of Family Practice, Orlando, FL, August 2017
67. "Interventional Pain Management: Injections, Nerve Blocks, Pumps, and Spinal Cord Stimulation", *PAINWEEK*, Las Vegas, NV., September 2017
68. "The Medical Stasi: Is Urine Drug Testing Necessary?" *PAINWEEK*, Las Vegas, NV., September 2017
69. "Neurogenic Thoracic Outlet Syndrome," *PAINWEEK*, Las Vegas, NV., September 2017
70. "Complex Regional Pain Syndrome", *Pain Care for Primary Care Annual Meeting (West)*, American Pain Society and The Journal of Family Practice, San Francisco, CA., November 2017
71. "Interventional Approaches for Pain: Traditional and Emerging", *Pain Care for Primary Care Annual Meeting (West)*, American Pain Society and The Journal of Family Practice, San Francisco, CA., November 2017
72. "Debate: Should We Be Prescribing Opioids for Pain Management", *Pain Care for Primary Care Annual Meeting (West)*, American Pain Society and The Journal of Family Practice, San Francisco, CA., November 2017
73. "Chronic Pain and Opioid Use: Best Practices in the Current Environment", *Academy of Integrative Pain Management Annual Meeting*, San Diego, CA., October 2017
74. "Update on Complex Regional Pain Syndrome", *Academy of Integrative Pain Management Annual Meeting*, San Diego, CA., October 2017
75. Faculty Member (Hands-on intensive cadaver training), *Pain School International*, May 18-20, 2018, Budapest, Hungary
76. "Current Concepts on Complex Regional Pain Syndrome", *Pain School International*, May 18-20, 2018, Budapest, Hungary
77. "Injections, Nerve Blocks, Pumps, and Spinal Cord Stimulators", *PAINWEEK*, Las Vegas, NV., September 2018
78. "Neurogenic Thoracic Outlet Syndrome," *PAINWEEK*, Las Vegas, NV., September 2018
79. "The Medical Stasi: When the Best of Intentions Lead to Unexpected Outcomes (Opioids)", *PAINWEEK*, Las Vegas, NV., September 2018

80. "Interventional Approaches for Pain: Nerve Blocks, Injections, and Neuromodulation for Pain", *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, San Diego, CA., November 2018
81. "Debate: Should We Be Prescribing Opioids for Pain Management", *Pain Care for Primary Care Annual Meeting*, American Pain Society and The Journal of Family Practice, San Diego, CA., November 2018
82. Faculty Member (Hands-on intensive cadaver training), *Pain School International*, May 16-19, 2019, Budapest, Hungary
83. "Current Concepts on Complex Regional Pain Syndrome", *Pain School International*, May 16-19, 2019, Budapest, Hungary
84. "Injections, Nerve Blocks, Pumps, and Spinal Cord Stimulation", *PAINWEEK*, Las Vegas, NV., September 2019
85. "Neurogenic Thoracic Outlet Syndrome," *PAINWEEK*, Las Vegas, NV., September 2019
86. "The Medical Stasi: The Standardization Proclamation and its Consequences (Opioids, Benzodiazepines, and Medical Cannabis)", *PAINWEEK*, Las Vegas, NV., September 2019
87. "Interventional Approaches: Nerve Blocks, Injections, and Neuromodulation for Pain", *Pain Care for Primary Care Annual Meeting*, Orlando, FL., November 2019
88. "Visceral Pain (abdominal/pelvic)", *Pain Care for Primary Care Annual Meeting*, Orlando, FL., November 2019
89. "Debate: Opioids vs Medical Cannabis for Pain Management", *Pain Care for Primary Care Annual Meeting*, Orlando, FL., November 2019
90. "Injections, Nerve Blocks, Pumps, and Spinal Cord Stimulation", *PAINWEEK*, Las Vegas, NV., September 2020
91. "Neurogenic Thoracic Outlet Syndrome," *PAINWEEK*, Las Vegas, NV., September 2020
92. "Opioids vs Cannabis for treating Chronic Pain", *PAINWEEK*, Las Vegas, NV., September 2020
93. "Medical Cannabis and Pain Management", 65<sup>th</sup> Annual Philip A. Tumulty Topics in Clinical Medicine, The Johns Hopkins University School of Medicine, May 2021
94. "Acetaminophen use for Acute Pain in Older Individuals and Adults with Cardiovascular Disease", *International Association for the Study of Pain (IASP) Virtual World Congress on Pain*, June 2021
95. "Efficacy and Suitability of Acetaminophen: 2 Sides of the same Coin", Symposium Chair, *International Association for the Study of Pain (IASP) Virtual World Congress on Pain*, June 2021
96. "Peripheral Nerve Stimulation and Scrambler Therapy", 28<sup>th</sup> *Napa Pain Conference*, Napa CA, August 2021
97. "Neurogenic Thoracic Outlet Syndrome", *PAINWEEK 2021 Annual Conference*, Las Vegas, NV, September 2021
98. "Updates on Complex Regional Pain Syndrome, *PAINWEEK 2021 Annual Conference*, Las Vegas, NV, September 2021
99. "The Adenosine Type 3 Receptor as a Novel Target for the Development of Safe and Effective Non-Opioid Analgesics", *PAINWEEK 2021 Annual Conference*, Las Vegas, NV, September 2021
100. "Suitability of Acetaminophen Compared to other Over The Counter Analgesics", *Global Pain Day*, October 2021

#### **SPECIAL MEDIA**

1. Host, Creator, Executive Producer: ***Aches and Gains Radio Talk Show***
  - SIRIUS XM Radio –Family Talk 131, April 2013-Present

- WBAL Radio, 1090 AM, Baltimore, MD, January 2011-April 2013
  - First, nationally syndicated talk show on overcoming pain ([www.paulchristomd.com](http://www.paulchristomd.com))
  - 285,000 listeners per week
2. “Ask the Expert” for live **Web Chat Series on Pain Management, Tribune Newspapers** (Los Angeles Times, Chicago Tribune, Hartford Courant, Baltimore Sun), December 2010-Present (<http://www.baltimoresun.com/health/bs-hs-cancer-pain-chat,0,7265361.htmlstory>)

## MEDIA SCHOLARSHIP

### Broadcast media:

1. Expert on-camera video on “Pain Management Following Traumatic Injury”. Traumapedia. Online self-management program for traumatic injury, *American Trauma Society, Trauma Survivors Network, and the Centers for Disease Control*. March 2009
2. Consultant/Contributor for ABC Medical Website, Expert Patient Educational Videos: *ABC OnCall +Pain Management* December 2007
3. Medical Expert (Pain) and Top Responder for all *ABC News Medical Unit/ Web and On-Air programs*, February 2009
4. Educational video interview (40 min.) with a pain patient for *Multidrug Therapy for Chronic Pain, Scientific and Clinical Considerations*, Satellite Symposium, 27<sup>th</sup> Annual Scientific Meeting of the American Pain Society (APS), Tampa, FL, May 2008
5. Educational on-camera interview with Dr. Timothy Johnson on “The Pain Questionnaire: Tips for talking to your doctor about pain”, *Good Morning America Health, ABC News*, June 16, 2009.
6. “Botox Eliminates Pain Of Thoracic Outlet Syndrome Without Surgery”, WUSA9 Television, Washington, DC, July 2010.

### Electronic Media:

1. Consultant for creation of online pain questionnaire (Print Out Your Pain), *ABC News OnCall/Pain Management Section*
2. “Ask the Expert” for live *Web Chat Series on Pain Management, Tribune Newspapers* (Los Angeles Times, Chicago Tribune, Hartford Courant, *Baltimore Sun*). December 2010-Present (<http://www.baltimoresun.com/health/bal-health-chats,0,3625121.storygallery>)
3. *PainPathways Magazine* Facebook Chat – Guest Pain Expert, “Low Back Pain”, November 2013
4. *PainPathways Magazine* Facebook Chat – Guest Pain Expert, “Autoimmune Disease”, April 2016
5. *U.S. Pain Foundation* Facebook Chat – Guest Pain Expert, “The Next Generation of Neuromodulation for Pain Relief”, November 2020

### Print Media (consulted, interviewed, and quoted):

1. “Battling Chronic Pain”, *Baltimore Sun*, October 14, 2007, Chris Emery (Reporter)
2. “In Constant Pain, but in the Game”, *Washington Post*, November 1, 2008, Katie Carrera (Reporter)
3. “When Your Pain Has No Name”, *ABC News.Com, ABC News Medical Unit*, November 5, 2008, Dan Childs (Reporter)
4. “Finding Effective Treatment for Your Chronic Pain”, *US News and World Report*



- (<http://health.usnews.com/articles/health/pain/2009/02/10/finding-effective-treatment-for-your-chronic-pain.html>), February 11, 2009, January Payne (Associate Editor)
5. "Strassels, Christo & Stevens: Speak up about pain", *Austin American Statesman*, February 28, 2009, Opinion-Editorial
  6. "Pain Medications: What You Need to Know About Acetaminophen, Darvon, and Darvocet", *US News & World Report*, July 24, 2009, January Payne (Associate Editor)
  7. "Docs cringe at the thought of painkillers taken off the market", *Medill News Service-Washington ( Northwestern University Wire)*, August 20, 2009, Melissa Suran (Reporter)
  8. "Crossing The Line: Recent Celebrity Deaths Highlight a Tragic Outcome of Prescription Drug Abuse", *Pain Pathways Magazine*, Fall 2009, Cindy Hodnett (Contributing writer).
  9. "Managing Your Pain, Minus Addiction", *US News & World Report*, December 2009, January Payne (Associate Editor)
  10. "Botox offers a shot of pain relief", *Baltimore Sun* <http://www.baltimoresun.com/health/bs-hs-botox-for-pain-20100630,0,6674251.story>, June 2010, Meredith Cohn (contributing writer)
  11. "Boy Suffers Through Multiple Broken Bones to Rescue Kitten". 9-Year Old Fell From a Tree, but is Remarkably Able to Endure Pain from his Injuries. *ABC News.Com*, ABC News Medical Unit, July 2010, Kim Carollo (Reporter)
  12. "Ask the Expert" Web Chat Series on Pain Management Reprint, Health and Style Section, *Baltimore Sun*, December 2010-Present
  13. "Prepared Patient-Living with Chronic Pain", *Center for Advancing Health website*, 2011, Maia Szalvitz (Health Writer)
  14. "Colorado medical community tries to slow flood of painkiller misuse", *The Denver Post*, 2012, Michael Booth (Health Writer) [http://www.denverpost.com/news/ci\\_20199285/medical-community-tries-slow-flood-painkiller-misuse](http://www.denverpost.com/news/ci_20199285/medical-community-tries-slow-flood-painkiller-misuse)
  15. "The Dirt on Gardening", *Grandparents.com*, 2012, Deborah Long (Health Writer)
  16. "Aches and Gains", *PainPathways Magazine* (Physician Spotlight), 2012, Tammy Holoman (Health Writer)
  17. "Natural Pain Remedies", *Caring.com*, 2013, Paula Spencer Scott (Senior Editor)
  18. "Aches and Gains", Short Stories, *Notre Dame Magazine*. Pg 58 (Summer 2013).
  19. "Pain drug abuse fuels competition, legal battles for companies", *Baltimore Sun.com*, 2013, Scott Dance (The Baltimore Sun)
  20. "Addiction to Painkillers confronts Physicians with U.S. Administration (La adiccion a los analgesicos enfrenta a medicos y Administratacion de EE.UU)", *La Opinion*, 2013, Adria Calatayud (Writer)
  21. "6 Things More Painful Than Childbirth", *Men's Health*, April 2015
  22. "What Doctors Tell Their Friends About Pain", *Redbook*, April 2015
  23. "Pain. How to understand (and manage) your body's most important warning system-and what to do when it goes awry", *Real Simple*, July 2015
  24. "Things Only Someone With Chronic Pain Understands", *Prevention.com*, August 2015
  25. "Would You Pay Someone to Walk on You?", *Dr. Oz The Good Life*, August 2015
  26. "Rules I Live By. Dodging Mankillers" Top nutrition, fitness, and medical experts reveal how they shaped up their habits, *Men's Health*, February 2016

27. "What's Killing White Middle-Aged Men?", *Men's Health*, March 2016
28. "Caution: Opioid Addiction. What Dentists Should Know about America's Prescription Opioid Problem", *Academy of General Dentistry Impact Magazine*, June 2016
29. "Can Chronic Pain be Prevented?" *Boston Globe*, July 2016
30. "New (And Old) Ways to Battle Pain", *U.S. News & World Report Best Hospitals*, September 2016
31. "Erase Chronic Pain", *Men's Health*, January/February 2017
32. "The Rise of the Personal Diffuser Stick – Is Essential Oil Vaping Safe?", *Organic Life*, September 2017
33. "Overcoming Pain", *Chronic Pain Ireland Newsletter*, September 2017
34. "Me vs. Fibromyalgia: Chronic Pain Spotlight Series – Dr. Paul Christo", *Huffington Post*, September 2017
35. "I often get a nasty headache when I lift. How come?", *Ask The Advisor, Men's Health Magazine*, April 2018
36. "Pain and Groundbreaking Treatments", *Jewish Family Weekly*, March 2018
37. "The Good and The Bad of Opioid Use", *Hamlet Hub*, March 2020
38. "Too Early to Link Covid-19 to Spike in Opioid-Related Deaths, Health Officials Say", *Maryland Reporter.com*, June 2020
39. "Increased Deaths from Overdoses", *FORBES*, August 2020
40. "Overdose Deaths and Covid-19", *Detroit Free Press, USA Today*, October 2020
41. "Telemedicine as a Remedy for Opioid Addiction during the Covid-19 Pandemic", *TAPinto.net*, 2020
42. "Expert Perspective: The Opioid Crisis and Covid-19", *Psychiatry Advisor*, 2020
43. "Opioids and the Pandemic", *Statesman Journal*, 2021
44. "How the Opioid Crisis has impacted the Pandemic", *The Day Newspaper*, New London, CT, 2021
45. "The Opioid Crisis and the Latest CDC Overdose Data", *Sinclair Broadcast Group*, 2021
46. "Drug Overdose Deaths Soared to Record 93,000 amid Pandemic", *Carlsbad Current Argus Newspaper*, New Mexico, 2021
47. "Increase in Prescription Opioid Deaths in Maryland", *The Baltimore Sun*, Baltimore, MD., 2021
48. "A Sheriff's Office Posted a Warning about Fentanyl. It Spread Misinformation Instead, experts say". *The Washington Post*, Washington, DC., 2021
49. "Has COVID-19 Helped or Hindered the Opioid Crisis", *Healthcentral.com*, 2021

50. "Dr. Paul Christo Sounds the Alarm About Rising Opioid Deaths", *Woman Around Town*, 2021
51. "Drug Overdoses Surged Amid COVID Lockdowns; More Deaths in One Year Than Ever Before", *USA Today*, 2021
52. "Rising Opioid Overdoses in the Baltimore Region", *The Avenue News*, Baltimore, MD, 2021

**Invited Guest Appearances:**

1. "Pain Medicine", Dr. Mehmet Oz's *Oprah and Friends XM Satellite Radio Show*, Health and Medicine Segment, New York City, January 2007
2. "Pain Management", Retirement Living Television: *Healthline*, hosted by Dr. Kevin Soden, Baltimore, MD, June 2007
3. "Chronic Pain", *Voices in the Family Radio Program*, hosted by Dr. Dan Gottlieb, WHYY (NPR), Philadelphia, PA, November 2007
4. "Pain Expert", *ABC News On-Call Pain Project*, video footage for ABC news website, 2007
  - *Diagnosing Pain: Can Blood Tests Confirm My Pain? What are Nerve Conduction Studies? What is an EMG, When Do I Need One? Difference between an MRI, CAT scan? What is a Functional MRI?*
5. "Low Back Pain", Interview with Donna Hamilton, *WBAL News*, Baltimore, MD, April 2008
6. "Are Prescriptions Underprescribed or Overprescribed for the Treatment of Pain", Guest Interview with Neil Conan, *NPR's (WAMU) Talk of the Nation*, July 2009
7. "Celebrities, Prescription Drugs and the Candy Man", Guest Interview with Warren Olney, *NPR's (KCRW-Santa Monica) To the Point*, April 2010
8. "Pain", Guest interview with Tom Hall, *NPR's (WYPR-Baltimore) Maryland Morning with Sheilah Kast* (<http://mdmorn.wordpress.com/2010/06/28/629103-a-not-so-pain/>), June 2010
9. "Use and Abuse of Prescription Painkillers", *NPR's (WAMU-Washington, DC) The Diane Rehm Show*, April 2011 (<http://thedianerehmshow.org/shows/2011-04-21/use-and-abuse-prescription-painkillers>)
10. "Expert Panelist for *The Addiction Performance Project*", National Institute on Drug Abuse, Washington, D.C., Debra Winger, featured actress, August 2011
11. "Relieving your Aches and Pains", *Circles of Change, KQTH Radio, Tucson's News Talk Radio*, September 2011. (<http://www.thelarsengroup.com/2011season/guests2011julysep.html>)
12. "Diagnosis and Treatment of Chronic Pain", *Today with Pat Kenny, RTE Radio, Ireland*, December 2011
13. "Upping the Dose on Pain Meds", *NPR's (KPCC-Southern California) Airtalk with Larry Mantle*, December 2011
14. "Is it Pain or Dependency? A Doctor's Dilemma", *NPRs (WAMU) Talk of the Nation with Neil Conan*, January 2013 (<http://www.npr.org/2013/01/07/168806376/is-it-pain-or-dependency-a-doctors-dilemma>)
15. "Elvis Presley: Head Trauma, Autoimmunity, and Agonizing Pain", *SIRIUS XM Elvis Radio* with George Klein, January 2014

16. "Doctor found guilty of murder for overprescribing opioids raises new questions about abuse", *NPR's (KPCC-Southern California) Airtalk with Larry Mantle*, November 2015
17. "Aches and Gains", *YOU the Owner's Manual with Dr. Michael Roizen*, RadioMD, September 2017
18. "Aches and Gains", *Let's Get Healthy Radio*, KJCE AM, September 2017
19. "Aches and Gains", *Relationships 2.0 with Dr. Michelle Skeen*, 101.5 FM, September 2017
20. "Aches and Gains", *The Donna Seebo Show*, January 2018
21. "Pain and the Opioid Crisis", *The Mike Schickman Show*, WSVN News Talk Radio, February 2018
22. "Pain and Opioids", *The Bevy Smith Show*, March 2018
23. "Drugmakers Paid to Promote Opioids", *i24 TV News*, 2018
24. "Teen Vaping", *i24 TV News*, 2018
25. "Lawsuits against Opioid Makers", *i24 TV News*, 2018
26. "Right to Try" Drug Bill, *i24 TV News*, 2018
27. "Warning about Daily Aspirin", *i24 TV News*, 2018
28. "Should Marijuana be used to address the Opioid Crisis?" *Fox TV News*, 2018
29. "Opioid Epidemic", *Newsmax TV*, 2018
30. "Acute Flaccid Paralysis", *i24 TV News*, 2018
31. "Trump Signs Bipartisan Opioid Legislation", *i24 TV News*, 2018
32. "Lawsuit Targets Billionaire Family Behind Oxycotin", *i24 TV News*, 2019
33. "Chronic Pain and Treatments, and the Opioid Epidemic", *Thank You Dan and Alex*, WABC Radio, 2019
34. "Thousands of Suits Brought Against U.S. Drugmakers", *i24 TV News*, 2019
35. "China's Mystery Virus Prompts Emergency Meeting", *i24 TV News*, 2020
36. "Opioid Overdoses during the Covid-19 Pandemic", *Spectrum News 1 TV Ohio*, 2020
37. "Covid-19 increases the Risk of Overdose", *WJFW (NBC TV) Wisconsin*, 2020
38. "Covid-19 and Overdoses", *KCRA 3 TV (NBC Sacramento)*, 2020
39. "Opioid Overdoses Rising during the Pandemic", *NBC TV South Florida*, 2020
40. "Opioid Overdoses and the Pandemic", *Fox Univision TV*, South Texas, 2020
41. "Covid -19 and Overdoses", *NBC TV San Antonio*, 2020
42. "Addiction and Opioid Overdose", *IN FOCUS Radio*, WVOX 1460 AM, 2020
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