Curriculum Vitae

David J. Hart, MD

**Education**

• Fellow in Spinal Surgery (07/02-06/03)

Departments of Neurosurgery and Orthopaedics

University of Utah Medical Center

Salt Lake City, Utah

• Senior/Chief Resident in Neurosurgery (01/01-06/02)

Department of Neurosurgery

USC University Hospital

Los Angeles, California

• Resident Physician / House Staff (07/98-01/01)

Department of Neurosurgery

LA County General Hospital

Childrens Hospital Los Angeles

USC University Hospital

Los Angeles, California

• Internship, General Surgery (06/97-07/98)

Department of General Surgery

LA County General Hospital

Los Angeles, California

• Doctor of Medicine (M.D.), Degree with honors (09/93-06/97)

University of Washington School of Medicine

Seattle, WA

• Bachelor of Arts (B.A.), Cum Laude (09/88-06/92)

Pomona College

Claremont, CA

Molecular biology

• High School graduated with highest honors (08/84-05/88)

Tumwater High School

Tumwater, WA

Board Certification and Medical Licensures:

Diplomate, American Board of Neurological Surgery. Certification date: 11-11-2009

North Carolina: #211591 Expires 3/29/2018 Current

Ohio: 084642 Expired 10/1/2016

California: A67547 Expired 3/31/2016

Utah: 2718102-1205 Expired 1/31/2004

**Professional Society Memberships:**

* 1. Sigma Xi Scientific Research Society (since 1994)
  2. Alpha Omega Alpha Medical Honor Society (since 1996)
  3. Congress Of Neurological Surgeons (since 1998)
  4. American Association of Neurosurgeons (since 2000)
  5. AANS/CNS Joint Section on Spine and Peripheral Nerves (since 2005)
  6. Ohio State Neurosurgical Society (2005-2015)
  7. Ohio State Medical Association (2005-2015)
  8. South Carolina Spine Society (Honorary Member, 2009)
  9. Neurosurgical Society of America (Inducted 2011 - present)
  10. Minimally Invasive Neurosurgical Society (since 2010): Appointed Secretary 2011-present
  11. North Carolina Spine Society (2015 – present)

**Honors and Awards**

Postgraduate • Inducted into NSA March 2011

• Awarded inaugural “Golden Apple” 2010-11 – voted by residents as best teacher

of the year in the Department of Neurological Surgery

• Honorary Membership, South Carolina Spine Society, 2009

• Visiting Professor, Department of Neurological Surgery at University of Missouri,

September 2008

Medical School • Honors evaluations in Medicine, Family Medicine, General Surgery,

Pediatrics, Psychiatry, Medicine sub-internship, Neurology, Emergency/Critical

Care Medicine, multiple other medical school courses and electives.

• 23rd annual Medical Student Western Research Forum, Carmel, CA.

• American Federation for Clinical Research Medical Student Award for Excellence

Undergraduate • Fulbright Scholarship to Japan (1992-1993)

• National Mortar Board. Pomona Scholar (Dean’s list).

• MacKenzie Foundation Scholarship for excellence in undergraduate research.

• ARCS (Achievement Rewards for College Scientists) scholarship.

• Neuroscience Research Program, University of Minnesota.

• Mellon and MacArthur Fellowships for academic study abroad (Japan).

• Selected by Pomona College faculty as Chemistry Department liaison.

High School • Paul Fowler Scholarship (awarded to top seven graduating seniors in

Washington State). Robert C. Byrd scholarship. Washington Scholar.

Washington Principals’ Scholar. Washington State Honors Award. National

Merit Scholarship Commendation. Senior Class Scholarship Award. Scholar

athlete award. Graduated Top Ten Senior Class.

**Work Experience** • Attending Neurosurgeon (02/18-present)

Cape Fear Valley Health System

Fayetteville, NC 28304

Associate Professor, Wake Forest Baptist Health, (08/15-6/17)

Department of Neurological Surgery

Associate Professor, CWRU SOM (07/11-06/15)

Director, Neurosurgery Spine

The Neurological Institute

Department of Neurological Surgery

University Hospitals Case Medical Center

Cleveland, Ohio

•Assistant Professor, Case Western Reserve University (09/04-06/11)

School Of Medicine

• Clinical Instructor/Resident Supervisor (06/03-06/04)

Department of Neurological Surgery

Los Angeles County Medical Center

Los Angeles, California

##### Teaching Experience

• August 2015-June 2017: Associate Professor, WFBMC Neurosurgery – involved in resident education, curriculum development of the spine module of our year-round weekly didactic sessions. Participated in formal resident mentoring as well as informal daily teaching responsibilities.

• Jan 2016-June 2017: Director, Neurosurgery rotation of medical student MS3 Surgery Clerkship rotation.

• July 2016-June 2017: MS3 Clinical Coach: Involves 1-hour observation and direct formative feedback sessions of students performing history and physical examination of patients during their Surgery Clerkships

• July 2009 – June 2015: Course Organizer / Instructor, Case Western SOM “IQ+” third-year medical student small-group learning sessions. Case-based problem-solving sessions in the neurology / neurosurgery / psychiatry block rotation. Includes leading small group sessions and proctoring hands-on skills lab sessions. Attended by all CWRU 3rd-year medical students in 6-week blocks.

• January and May 2012: Attended Harvard-Macy Program for Educators in the Health Professions – a unique course offered by joint collaboration of the Harvard University Schools of Medicine and Education. Designed for physicians and allied health professionals dedicated to teaching in healthcare, covers three weeks of intensive training in education theory, learning theory, teaching strategies, curriculum design. Required development of an educational project as part of the course curriculum.

##### • September 2004 – June 2015: Assistant/Associate Professor, Case Western Reserve University. Daily patient rounds, resident and student teaching in operating room, clinic, and patient wards. Weekly teaching conferences, both basic science and patient-based. Neuroscience core curriculum medical student teaching lectures on monthly basis.

• January 2005 – 2010: Lecturer, third-year medical student core curriculum lecture on Spine and Peripheral Nerves for Neurosciences block. One hour lecture, for each rotation

• February 2006-Spring 2014: Preceptor for first-year medical students in Case Western Reserve University Community Patient Care Preceptorship Program.

• June 2009 – June 2013: Conceived, organized, sought and obtained industry funding, and implemented creation of new Northeast Ohio Region spine meeting for area spine surgeons and their extenders – “North Coast Spine Exchange”. Quarterly meetings since June 2009, each attended by over 15 area spine surgeons and rated highly for educational content.

• July 15-18, 2015: Course Co-director and Faculty, 6th Annual MINS Conference, Breckenridge, CO. Included mobile cadaver lab and didactic sessions. Also moderated multiple podium sessions.

• May 16-17, 2014: Course Faculty, “Foundational Techniques in MIS Spine”, Las Vegas NV, Stryker sponsored course, approximately 50 attendees

• March 21-22, 2014: Faculty, “Spine Tumor Symposium”, Columbus Ohio, Joint course with OSU and CWRU faculty, sponsored by DepuySynthes Spine.

• Sept 16-17, 2013: DepuySynthes Spine New Technologies Training Course, Orlando Florida

• August 28-29, 2013, August 27-28, 2014: Course Instructor, podium talk and cadaver lab proctor, Surgical Treatment of The Craniocervical Junction course. Talk title: “Techniques of Posterior Cervical Fixation: Occiput, C1, C2”.

• November 16-17, 2012: Course Co-Chairman, 4th National APSS Symposium. Responsible for faculty selection and ensuring deadlines met for speaker presentations. Ten faculty and >75 attendees. Las Vegas, NV.

• August 1, 2012, August 8 2013, July 24 2014: MINS Cadaver Lab course: Taught one-day cadaver lab on multiple areas of minimally invasive spine surgical techniques. Beaumont Medical Center, Detroit MI.

• November 18-19, 2011: Invited faculty, podium lecture and cadaver laboratory for “2011 DePuy Spine Concepts in Minimally Invasive Spine Surgery” course, San Francisco, CA. Larger course attended by approx. 40 spine surgeons from around the country. Lecture topic: “Minimally Invasive Lumbar Decompression Strategies, Tips and Pearls”.

• November 12, 2011: Faculty (podium lecture and cadaver laboratory proctor) for company-sponsored “Concepts in Minimally Invasive Spine Surgery” course, St. Vincent’s Medical Center, Cleveland OH. Full-day course attended by approx. 15-20 spine surgeons, residents and fellows

• October 26, 2011: Taught resident cadaver laboratory session on spinal instrumentation and stereotactic navigation techniques for UH residents

• March 2011 – present: Took over leadership of Case Western Reserve SOM third-year medical student program “IQ+” (see above)

• July 2011, 2012, 2013, 2014: Invited course faculty, “Cleveland Clinic Spine Review”, a several-day hands-on cadaver course for residents and fellows covering spinal surgery techniques from occiput to pelvis run by the Cleveland Clinic Spine Institute

• May 2011: Course Instructor, podium talk and cadaver lab proctor, Surgical Treatment of The Craniocervical Junction course. Talk title: “Fixation Options at C1-C2”

• November 24, 2010: Neurosurgery Department Core Curriculum lecture series topic “Advances in Spinal Stabilization” given to residents

• August 17, 2010; September 27, 2011, August 6, 2013, Sept 23, 2014: Neurology Department Core Curriculum lecture series topic “Spinal Cord Compression” given to residents and fellows

• Feb. 19, 2010: Didactic lecture and cadaver lab proctor for other spine surgeons teaching technique of Paramount MIS pedicle screw fixation system during lab session at AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves annual meeting

• September 2005 – 2010: Organizer and instructor for monthly Neurosurgical Journal Club conference for residents and students

• August 2009: Host, Moderator, Panelist and Podium Speaker, Cleveland Regional APSS meeting

• June 2009, February 2010, Sept. 19-20, 2012: Course Instructor, podium talk and cadaver lab proctor, Surgical Treatment of The Craniocervical Junction course. Talk title: “Deformity and Tumors of the Craniocervical Junction”.

• April 16-19, 2009: Sixth Annual ASPT course, didactic lecturer and cadaver surgical lab instructor, Las Vegas, NV

• Jan. 28, 2009: Gave presentation to Case SOM students at Neuroscience Research and Scholarship Forum (organized for students interested in neuroscience research projects)

• September 21, 2008: Faculty and Course Instructor, Congress of Neurological Surgeons Annual Meeting, Instructional Course PC14: Nuances of Minimally Invasive Spine Surgery; Orlando, Florida

• October 6, 2007: Course Co-Director and Organizer, 1st Annual Case Western / OSU Comprehensive Spine Symposium. Over 120 attendees including physicians and RNs. Eight faculty. Full day lecture course.

• March 2005, 2006, 2008: Faculty, Aesculap Spine Product Training Course, Snowbird, Utah. Includes didactic lecture and hands-on sawbones lab teaching of fellow surgeons.

• July 2006 – July 2007: Co-Director, Case Western School of Medicine Neuroscience Core Curriculum Clerkship

• September 2006: Faculty for didactic and hands-on lab course in Minimal Access Spinal Technologies course, presented oral case presentations and led cadaver instrumentation workshops.

• October 2006: Faculty for AO / ASIF group course for operating room personnel, presented didactic lecture on cervical spine pathology and led sawbones instrumentation workshop.

• Spring 2005-2009, 2011-14: Course Instructor, ANAT 516 Head and Neck Anatomy, Case Western Reserve University School of Medicine. Classroom lecture, animal laboratory dissection, cadaver dissection.

• January 2005: Invited faculty, 16th Annual Contemporary Update on Spinal Disorders course for spinal surgeons. Presented information on new cervical plating techniques.

• June 2003 – June 2004: Resident Supervisor, Los Angeles County Medical Center. Responsible for supervision and education of all residents, interns and medical students rotating on Neurosurgery service at L.A. County Hospital. Involved giving lectures at didactic conferences as well as teaching rounds, surgical instruction, and formal performance reviews.

• March 2003: Hands-on skills workshop instructor at course “2nd Annual Advanced Techniques in Cervical and Thoracolumbar Fusion”, Snowbird, Utah

• 2002-2003: participated in resident and student clinical teaching during fellowship. Gave didactic conference presentations and led journal club sessions.

• 1995: Teaching Assistant, head & neck anatomy course, UW School of Medicine.

• 1994: Teaching Assistant, gross anatomy course, UW School of Medicine.

• 1991: Teaching Assistant, biochemistry course, Pomona College

• 1990: Teaching Assistant, 1st and 2nd year Japanese language courses, Pomona College. Teaching assistant, general biology course, Pomona College

• 1989: Teaching Assistant, accelerated general chemistry course, Pomona College

**Research Experience**

• Participated in biomechanical study of lumbar spine isthmic spondylolisthesis. Developed novel cadaver model, then tested this model in five different stabilization states. Resulted in peer-reviewed publication (see below)

• National Principal Investigator (PI) and local site PI of multicenter randomized trial: RAMP – industry-sponsored trial comparing minimally invasive TLIF vs. AxiaLIF for lumbosacral interbody fusion. Began enrollment December 2012. Study terminated late 2014 due to sponsor bankruptcy.

• Participated in 15-center United States FDA IDE trial of a new lumbar Total Disc Arthroplasty device, including patient enrollment and follow-up. Local site PI. Study has currently closed enrollment and is in follow-up period.

• Participated in preliminary animal (pig) study of percutaneous injection of human stem cell transplant into intervertebral discs, with IRB process initiated for human trials. PI: John David Prologo, M.D., Case Western Reserve University SOM.

• Participated as local site PI in FDA trial of Duraseal™ spinal dural sealant to determine safety and efficacy for preventing spinal CSF leak. Multicenter randomized trial design.

• Led collaborative team with Case Western Reserve University nanotechnologist and biomechanics specialist investigating potential uses of nanosensors in studying spinal biomechanics (2006-2009)

• Participated in biomechanical study of pedicle screw pullout strength, Biomechanics lab, University of Utah Medical Center (2002-3)

• Conducted original research in the role of cellular adhesion molecules and macrophages (white blood cells) in Wallerian degeneration of peripheral nerves. (1994)

• Investigated role of Ada protein in the bacterium E. coli in tumor genesis and molecular DNA error repair mechanisms while acting as cultural liaison in Japan (Fulbright scholarship, 1992-1993)

• Senior Thesis, Department of Molecular Biology, Pomona College, under supervision of Bruce Telzer, PhD. Isolation of molecular motor protein dynein from the unicellular organism Tetrahymena. Included written thesis, oral and slide presentation to combined faculty of Chemistry and Biology departments. Received “A” grade. (1991-1992)

• Completed research in the role of nicotine in upregulation of proto-oncogenes c- fos and c-jun in rat brain. Presented results at Poster session, University of Minnesota Summer Neuroscience Program (1991)

**Publications - Reviewed**

1. Avellino AM, Hart DJ, Dailey AT, MacKinnon M, Ellegala D, and M. Kliot. Differential Macrophage Responses in the Peripheral and Central Nervous System during Wallerian Degeneration of Axons. *Experimental Neurology*. 1995. **136**: 183-198.
2. Taketomi A, Nakabeppu Y, Ihara K, Hart DJ, Furuichi M, and M. Sekiguchi. Requirement for two conserved cysteine residues in the Ada protein of Escherichia coli for transactivation of the ada promoter. *Molecular General Genetics*. 1996. **250**: 523-532.
3. Hart DJ, Khoo L, McComb J, and Levy M. Pediatric Intracranial Aneurysms: A Review. *Ippocrates*. 2001. **3** (7): 297-305.
4. Hart DJ and Giannotta SL. Complex Cranial Base Meningiomas: Combined Management. *Techniques In Neurosurgery* **9**(2): 86-92. June 2003.
5. Hart DJ, Wang MY, Griffith P, Levy ML, and McComb JG. Pediatric Sacral Fractures. *Spine*. 2004 Mar 11; **29**(6): 667-70
6. Levy ML, Granville RC, Hart D, Meltzer H. Deep Venous Thrombosis In Children And Adolescents. *J Neurosurg.* 2004 Aug. 101 (1 Suppl): 32-7.
7. Hart DJ and Apfelbaum, RI. Anterior Cervical Spinal Cord Tethering Following Anterior Spinal Surgery. *Neurosurgery*. 2005 Feb. 56(2) E414.
8. Moore MK, Fulop S, Tabib-Azar M, Hart DJ Piezoresistive pressure sensors in the measurement of intervertebral disc hydrostatic pressure. [*Spine J.*](javascript:AL_get(this,%20'jour',%20'Spine%20J.');) 2009 Dec;9(12):1030-4
9. Dailey A, Hart D, Finn M, Schmidt M, Apfelbaum R. Anterior Fixation of Odontoid Fractures in an Elderly Population. *J Neurosurg Spine*. Jan 2010. **12**(1): 1-8
10. Huang MI, Debernardo RL, Rodgers M, Hart DJ. [Endometrial stromal sarcoma metastasis to the lumbar spine and sphenoid bone.](http://www.ncbi.nlm.nih.gov/pubmed/22066034) *Rare Tumors*. 2011 Jul 11;3(3):
11. Prologo JD, Pirasteh A, Tenley N, Yuan L, Corn D, Hart D, Love Z, Lazarus HM, Lee Z. Percutaneous Image-guided Delivery for the Transplantation of Mesenchymal Stem Cells in the Setting of Degenerated Intervertebral Discs. *J Vasc Interv Radiol*. Aug;23(8):1084-1088.e6
12. Manjila S, Singer J, Knudson K, Tomac AC, Hart DJ**.**  [Minimally invasive presacral retrieval of a failed AxiaLIF rod implant: technical note and illustrative cases.](http://www.ncbi.nlm.nih.gov/pubmed/23199822) *Spine J*. 2012 Oct;12(10):940-8.
13. Fleischer GD, Hart D, Ferrara LA, Freeman AL, Avidano EE. [Biomechanical effect of transforaminal lumbar interbody fusion and axial interbody threaded rod on range of motion and S1 screw loading in a destabilized L5-S1 spondylolisthesis model.](http://www.ncbi.nlm.nih.gov/pubmed/24150429) *Spine* (Phila Pa 1976). 2014 Jan 15;39(2):E82-8.
14. Manjila S, Chowdhry SA, Bambakidis NC, Hart DJ. [Traumatic, high-cervical, coronal-plane spondyloptosis with unilateral vertebral artery occlusion: treatment using a prophylactic arterial bypass graft, open reduction, and instrumented segmental fusion.](http://www.ncbi.nlm.nih.gov/pubmed/24286529) *J Neurosurg Spine*. 2014 Feb;20(2):183-90.

**Publications – Book Chapters and Invited Papers**

1. Hart DJ, Corber Z, Levy M, and Apuzzo M. Communication, Visualization, and Data Presentation in the Neurosurgery Operating Room. 2003. In **The Operating Room of the 21st Century**. Apuzzo, M., Editor. Ch. 11, pp. 139-146. American Association of Neurological Surgeons, Rolling Meadows, IL.
2. Hart DJ, Khoo LT, Samudrala SS. Lateral Transthoracic Approach to the Spine. *In* Fessler RG and Sekhar LN (eds). **Atlas of Neurosurgical Techniques: Cranial and Peripheral Nerve, Spine and Endoscopic Surgery.** Chapter 51, pp. 405-12. Thieme, New York, 2006.
3. Hu, Y. and Hart, DJ. Complications of Vertebroplasty and Kyphoplasty. J Tech Reg Anes. July 2007. **11**(3): 164-170.
4. Hart, DJ. Discography: Interpretation from a Surgeon’s Perspective. J Tech Reg Anes. April 2009. **13**(2): 76-84
5. Chowdhry S and Hart DJ. Overcoming the Learning Curve. **Minimally Invasive Spine Fusion: Techniques and Operative Nuances**. Perez-Cruet, Beisse, Pimenta and Kim, eds. Chapter 3, pp63-80. Quality Medical Publishing, Inc. St. Louis, 2011.
6. Hart DJ, Dickman CA. Biology of Spinal Fusion. June 2012. In **Surgery of the Craniovertebral Junction**. 2nd ed. Bambakidis, Dickman, Spetzler and Sonntag, Eds. Chapter 34, pp431-442
7. Bambakidis NC, Hart DJ, Dickman CA. Posterior Atlantoaxial Fixation. June 2012. In **Surgery of the Craniovertebral Junction**. Bambakidis, Dickman, Spetzler and Sonntag, Eds. Chapter 40, pp493-502
8. Bambakidis NC, Hart DJ, Dickman CA. Occipital Cervical Fixation. June 2012. In **Surgery of the Craniovertebral Junction**. Bambakidis, Dickman, Spetzler and Sonntag, Eds. Chapter 41, pp503-513
9. Hart D. [The Challenge of Managing Type II Odontoid Fractures.](http://www.ncbi.nlm.nih.gov/pubmed/22548878) World Neurosurg. 2012 Apr 28.
10. Carmody M, Hart DJ. [Toward Clarity of Management Options in Spinal Synovial Cysts.](http://www.ncbi.nlm.nih.gov/pubmed/23111222) World Neurosurg. 2013 Feb;79(2):283-4.
11. Hart DJ. [To Screen or Not to Screen: Vertebral Artery Injuries in Blunt Cervical Spine Trauma.](http://www.ncbi.nlm.nih.gov/pubmed/23103271) World Neurosurg. 2013 Sep-Oct;80(3-4):309-10.
12. Hart DJ. Syringomyelia. 2014. In **Encyclopedia of the Neurological Sciences, 2nd Edition**, Daroff and Aminoff, Eds. pp378-381.
13. Alonso F and Hart DJ. The Intervertebral Disc. 2014. In **Encyclopedia of the Neurological Sciences, 2nd Edition.** Daroff and Aminoff, Eds. pp724-729.
14. Alonso F, Hart DJ. [Advanced Imaging Techniques In Cervical Spinal Cord Trauma.](http://www.ncbi.nlm.nih.gov/pubmed/24176838) World Neurosurg. 2015 Apr;83(4):496-7.
15. Munyon, C. and Hart, DJ. Vascular Disease of the Spinal Cord. Neurologist. 2015 May;19(5):121-7.
16. Shammassian B, Hart DJ. Complications in Surgical Treatment of Cervical Spondylotic Myelopathy: What We Think We Know. World Neurosurg. 2015 Sep;84(3):627-9.
17. Devereaux M and Hart DJ. Disorders of Bone, Joints, Ligaments and Meninges. In **Bradley’s Neurology in Clinical Practice, 7th Edition**. 2016. Daroff et al., eds. Ch.105, pp1736-66.

Presentations, Abstracts and Posters

1. Avellino AM, Hart DJ, Dailey AT, MacKinnon M, Ellegala D, and M. Kliot. Upregulation of cellular

adhesion molecules and the role of macrophages in the rat sciatic nerve during Wallerian degeneration. Poster presentation at 23rd annual Western Medical Student Research Forum. February 1995.

1. Hart DJ, Krieger M, Levy M, and McComb, J. Split Cord Malformations Associated with Distal Tethering – Is Untethering Indicated? Oral presentation at pediatric section meeting of American Association of Neurological Surgeons. October 2000.
2. Hart DJ, Krieger M, Levy M, and McComb, J. Incidence of Deep Venous Thrombosis in the Pediatric Population. Oral presentation at pediatric section meeting of American Association of Neurological Surgeons. October 1999.
3. Hart DJ and Giannotta S. Surgical Staging and Radiosurgery in the Management of Multicompartmental Meningiomas. Poster presentation at Congress of Neurological Surgeons meeting, September 2001.
4. Wang MY, Hart DJ, Griffith P, McComb JG, and Levy ML. Traumatic Spinal Cord and Spinal Column Injuries in the Pediatric Population. Poster presentation at Congress of Neurological Surgeons Annual Meeting, Philadelphia, 2002.
5. Dailey AT, Hart DJ and Apfelbaum RI. Anterior Direct Screw Fixation in the Elderly. Oral presentation at Richard Lende Winter Neurosurgery Conference, February 2003.
6. Dailey AT, Hart DJ, Schmidt M, Apfelbaum RI. Anterior Fixation of Odontoid Fractures in the Elderly. Oral presentation at AANS/CNS Joint Section on Spine and Peripheral Nerves Annual Meeting, 2003.
7. Ahn, N, Oldenburg FP, Ahn U, Cassinelli E, Hart DJ, Bohlman H. Predictive Factors for Improvement After Lumbar Epidural Steroid Injections: Survival and Cost-Effectiveness Analysis. Abstract, North American Spine Society Annual Meeting, Sept. 2006
8. Dean C, Glenn W, Ahn U, Cassinelli E, Hart DJ, Bohlman H, Ahn N. Smoking Increases Blood Loss and Transfusion Requirements Following Lumbar Spine Surgery. Abstract, North American Spine Society Annual Meeting, Sept. 2006.
9. Hart DJ, Hu Y, Finn M, Dailey AT, Apfelbaum R. Anterior Odontoid Screw Fixation in the Elderly Population. Oral podium presentation, Neurosurgical Society of America Annual Meeting, June 2007.
10. Fulop SC, Moore M, Tabib-Azar M, Hart DJ. Biocompatible and Matched Piezoresistive Polymeric Films for Implantable Telemetric Force Sensors for in Vivo Spinal Biomechanical Measurements. Oral Point Presentation, AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves 24th Annual Meeting, March 2008.
11. Moore M, Fulop SC, Tabib-Azar M, Hart DJ. Implantable Telemetric Force Sensors for in vivo Spinal Biomechanical Measurements. Podium presentation, Richard C. Lende Neuroscience Symposium, January 2009.
12. Hart DJ, Rodgers WB, Goel R. Preliminary Results Using AxiaLIF and Percutaneous Pedicle Screw Fixation in the Treatment of Lumbar Isthmic Spondylolisthesis. Digital Poster, AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves February 2010
13. Masters, D and Hart DJ. Preliminary Results Using Structural Allograft with Autologous Iliac Crest Bone Marrow Aspirate in Anterior Cervical Fusions. Podium presentation, Neurosurgical Society of America annual meeting, April 12, 2010.
14. Miller J, Khan F, Hart DJ, Chowdhry S, Hdeib A, Munyon C. Teaching Neurosurgery in the 21st Century: A New Approach to the Medical Student Curriculum. Poster presentation, Congress of Neurological Surgeons October 2010.
15. Manjila, S. and Hart DJ. Revision Strategies for Failed Presacral Lumbar Interbody Fusion. 2nd Annual Minimally Invasive Neurosurgical Society Meeting. July 22, 2011.
16. Ray, A. and Hart DJ. Minimally Invasive Surgery of the Thoracic Spine. MINS Cadaver Lab Course, August 1, 2012.
17. Hart DJ. MIS Surgery: The Role in Spine Trauma. 3rd Annual Minimally Invasive Neurosurgical Society Meeting. August 3, 2012.
18. Ostergard T, Bisson E, Manjila S, Hsu D, Apfelbaum R, Hart DJ. Preliminary Clinical Results of a Cervical Extension Plating System for Symptomatic Adjacent Segment Disease. 39th Annual Richard Lende Winter Neurosurgery Conference. February 4, 2013.
19. Hart DJ. Minimally Invasive Treatment of Thoracolumbar Spine Fractures. World Federation of Neurosurgical Societies (WFNS) Annual Meeting, Seoul, Korea. Sept. 9, 2013.

**Invited Lectures:**

* 1. “Surgical Management of Spinal Stenosis”: Department of Rheumatology Grand Rounds, Case Western Reserve University / University Hospitals of Cleveland, May 13, 2005.
  2. “Vertebral Body Compression Fractures”: Department of Rheumatology Grand Rounds, Case Western Reserve University / University Hospitals of Cleveland, May 13 2005.
  3. “Surgical Management of Spinal Tumors”: Department of Oncology Grand Rounds, Case Western Reserve University / University Hospitals of Cleveland, Jan. 5, 2005
  4. “Surgical Management of Spinal Tumors”: Department of Oncology Grand Rounds, Southwest General Medical Center, May 4, 2005.
  5. “The History of Anterior Cervical Plating”: 2nd Aesculap Spine Product Training Course, March 2005.
  6. “An Introduction to Anterior Cervical Plating”: 3rd Aesculap Spine Product Training Course, March 2006.
  7. “Surgical Management of Back Pain and Lumbar Radiculopathy” – Louis Stokes VA Medical Center Department of Pain Management Grand Rounds, Cleveland, OH April 2006.
  8. Roundtable discussion of emerging technology in cervical spine surgery – panel discussion, invited panelist (case presentations), June 2006.
  9. Case presentations and hands-on lab faculty for Minimal Access Spine Technologies training course, Memphis TN, Sept. 2006
  10. “Management of Cervical Spine Degenerative Disease and Trauma”: AO / ASIF group surgical OR staff training course, Salt Lake City, UT, Oct. 2006
  11. “Back Pain and Lumbar Radiculopathy” – 4PCP (Primary Practice Physicians Program for Chronic Pain”, Cleveland, OH, Feb. 2007
  12. “Surgical Management of Cervical Radiculopathy” – Louis Stokes VA Medical Center Department of Pain Management Grand Rounds, Cleveland, OH Mar. 2007
  13. “Advances in Spine Surgery” – Ohio State Industrial Commission Annual Meeting, Maumee, OH May 8, 2008
  14. “Spinal Cord Compression” – Lecture to neurology residents and faculty as part of Neurological Emergencies lecture series – Cleveland, OH; August 19, 2008. Invited back to give same lecture August 18, 2009
  15. “Vascular Disease of the Spinal Cord” – 2008 Neurocritical Care symposium, Cleveland, OH September 11, 2008
  16. “Update on Minimally Invasive Spine Surgery” – Visiting Professor, University of Missouri Neurosurgery; Columbia, MO Sept. 24, 2008
  17. Keynote speaker: Aesculap Annual Sales Meeting (Tuscon, AZ) – gave 30 minute educational talk to sales personnel regarding surgical technique and design advantages for ABC dynamic anterior cervical plating system, also led sawbones lab
  18. March 12, 2009: “What’s New?” talk at AANS/CNS Joint Spine Section Meeting on minimally invasive spondylolisthesis treatment. Invited back to give same talk Feb. 18, 2010.
  19. “AxiaLIF Treatment for Lumbar Spondylolisthesis” – Chicago Regional APSS meeting, April 4, 2009
  20. “Minimally Invasive Spine Surgery Update” – UH Bedford Medical Center Grand Rounds, April 15, 2009
  21. “Percutaneous Vertebral Augmentation: Indications, Work-up and Recent Literature” – podium talk and panelist at AANS Annual Meeting Breakfast Seminar, May 6, 2009
  22. “Deformity and Tumors of the Craniocervical Junction” podium talk and cadaver lab proctoring for Surgical Treatment of the Craniocervical Junction course, June 22, 2009
  23. “Management of Vertebral Compression Fractures” Southwest General Hospital Grand Rounds presentation August 7, 2009
  24. “AxiaLIF Treatment for Lumbar Spondylolisthesis” – Cleveland Regional APSS meeting, August 22, 2009
  25. Invited Speaker, South Carolina Spine Society meeting. Gave podium talk on “Minimally Invasive Correction of Lumbar Spondylolisthesis”. Made Honorary Member of the Society, September 26, 2009
  26. “AxiaLIF Treatment for Lumbar Spondylolisthesis” – 2nd Annual National APSS meeting, Las Vegas, NV, October 8, 2009
  27. Grand Rounds presentation, Department of Anesthesiology and Pain Medicine, VAMC Cleveland, topic: “Novel Stabilization Techniques in the Lumbar Spine”, December 17, 2009
  28. “Percutaneous Vertebral Augmentation: Indications, Work-up and Recent Literature” – podium talk and panelist at AANS Annual Meeting Breakfast Seminar, May 3, 2010
  29. Faculty and speaker, “Overcoming the MIS Spine Learning Curve”. 1st inaugural MINS (Minimally Invasive Neurosurgery Society) meeting, August 13, 2010.
  30. Faculty, lab proctor for Course PC13 – “Minimally Invasive Techniques for Cervical and Lumbar Spine Surgery” full-day course and cadaver lab, Congress of Neurological Surgeons annual meeting, October 17, 2010.
  31. “Spondylolisthesis Treatment with AxiaLIF” – What’s New session, AANS/CNS Joint Section meeting, March 11, 2011
  32. Case Presentations Session, AANS / CNS Joint Section meeting, March 12, 2011
  33. UH Case Medical Center Neurological Institute Spring Seminar: “Management of Back Pain and Lumbar Radiculopathy”, May 3, 2011
  34. UHCMC Pain Management Grand Rounds – “Minimally Invasive Spine Surgery Update” June 20, 2011
  35. Neurological Emergencies Lecture Series: “Spinal Cord Compression” – Sept. 27, 2011.
  36. CWRU Employee Wellness Seminar on Spine Health – lecture to general public regarding common spine conditions. Jan. 20, 2012.
  37. UHCMC Pain Management Grand Rounds – “Surgical Evaluation of Low Back Pain” June 4, 2012
  38. Current Concepts in Minimally Invasive Spine Surgery – Cadaver and lecture course for practicing spine surgeons, Albany, NY – “Percutaneous Pedicle Screw Instrumentation” and “MIS TLIF”. June 14, 2012.
  39. Neurological Emergencies Lecture Series: “Spinal Cord Compression” – August 14, 2012.
  40. ”Surgical Considerations in Work-Related Spinal Injuries” – Speaker at Ohio State Industrial Commission Annual Meeting. Audience of >100 Attorneys and Workers’ Compensation Managers. Sept. 10, 2012
  41. UHCMC Department of Internal Medicine Grand Rounds: “New Approaches in the Surgical Treatment of the Spine”. Oct. 16, 2012.
  42. AANS/CNS Joint Spine Section Meeting: “Minimally Invasive Treatment of Thoracolumbar Fractures in the Elderly” Special course lecture March 7, 2013.
  43. UH Department of Anesthesiology / Pain Medicine Grand Rounds Speaker: “Evaluation and Surgical Management of Low Back Pain”. March 18, 2013
  44. Southwest General Hospital Spine Symposium: “Minimally Invasive Spine Sugery”. April 19, 2013.
  45. Society for Minimally Invasive Spine Surgery (SMISS) Annual Meeting: “Indirect Decompressive Techniques (Interspinous Process Devices)”. November 2, 2013.
  46. Invited Honored Guest, Western Neurosurgical Society Annual Meeting (Mexican Association of Neurological Surgeons) – “XVIII Congresso de la Sociedad de Cirugia Neurologica de Occidente” – presented one plenary session lecture on neurosurgical education in U.S. medical schools, and three presentations in section plenary sessions, July 16-19, 2014
  47. “MIS treatment of Spinal Trauma” – 5th Annual MINS (Minimally Invasive Neurosurgical Society) meeting, Detroit, MI, July 25, 2014
  48. 11th Annual Mazama Spine Summit: “Review of Interspinous Process Devices and Indications”. February 7, 2015
  49. “MIS Treatment Options for Thoracic Discectomy / Corpectomy” – AANS 84th Annual Meeting, May 2, 2016 Breakfast Seminar
  50. “Academic Practice: Risks and Benefits” – 7th Annual MINS (Minimally Invasive Neurosurgical Society) meeting, Mackinaw Island, MI Aug 12, 2016.
  51. “MIS Treatment Options for Thoracic Discectomy / Corpectomy” – AANS 85th Annual Meeting, April 25, 2017 Breakfast Seminar

Other Administrative / Service Activities:

1. Member, Department of Neurosurgery Quality Assurance Committee, 2009-2015. Includes quarterly meetings to review quality data and morbidity/mortality data for the department, and analysis with development of action plans for identified system problems
2. Director, Spine Center of the Neurological Institute at University Hospitals Case Medical Center 2008-2015. Includes 2-6 hours per week in center planning, administrative meetings, discussions with Institute leaders and administration
3. Applicant Interviewer for CWRU SOM. Involves weekly interview session with prospective applicants for medical school, completion of online applicant assessment and recommendation for or against acceptance, 2008-2015
4. Online consultant / advisor for NetWellness, 2009-present. Involves responding to posted general information queries from users of the website seeking information related to spine health and spine disease
5. Provided expert testimony to American Medical Association (AMA) Current Procedural Terminology (CPT) Editorial Committee meeting October 2011
6. Elected to three-year term as member of the Case Western Reserve University School of Medicine Faculty Council (2012-2015)
7. *World Neurosurgery* Editorial Reviewer, 2011-present.
8. Editorial Reviewer for Journal of Neurosurgical Sciences, 2014-present
9. Department Liaison for development of EMR (system-wide at UH hospitals) content specific to Neurosurgery. 2012-13.
10. Member, Bylaws Committee, Neurosurgical Society of America, 2014-present
11. Supervisor, 3rd and 4th year medical student Neurosurgery rotations, WFBMC, 2015-2017.
12. Committee Member, WFBMC VAC (Value Analysis Committee) for Surgical Services, 2016 – June 2017