

# *Curriculum Vitae*

**NAME:** Patrick C. Hsieh, M.D.

**ADDRESS:** USC Department of Neurological Surgery  
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**DATE OF BIRTH:** August 30, 1973

**MARITAL STATUS:** Married with 2 daughters

## **UNDERGRADUATE AND GRADUATE EDUCATION:**

University of California, Los Angeles  
Los Angeles, California 1995  
B.S. Biochemistry

University of California, Los Angeles  
Los Angeles, California 1996  
M.S. Biochemistry

## **MEDICAL EDUCATION:**

University of Southern California 2001  
Keck School of Medicine  
Los Angeles, California M.D.

## **POSTGRADUATE MEDICAL EDUCATION:**

General Surgery Internship 2001-2002  
Department of Surgery  
Northwestern Memorial Hospital and McGaw Medical Center  
Northwestern University Feinberg School of Medicine

Neurosurgery Residency 2002-2007  
Department of Neurological Surgery  
Northwestern Memorial Hospital and McGaw Medical Center  
Northwestern University Feinberg School of Medicine

**FELLOWSHIP:**

Fellowship in Spinal Oncology and Complex Spine Surgery  
with Ziya Gokaslan M.D. 2007-2008

Department of Neurological Surgery  
Johns Hopkins University School of Medicine

Fellowship in Complex Reconstructive Spinal Surgery  
with Stephen Ondra M.D. 2005-2006

Department of Neurological Surgery  
Northwestern Memorial Hospital  
Northwestern University Feinberg School of Medicine

Fellowship in Advanced Minimally Invasive Spinal Surgery  
with John C. Liu M.D. 2005-2006

Department of Neurological Surgery  
Northwestern Memorial Hospital  
Northwestern University Feinberg School of Medicine

**MEDICAL LICENSURE:**

California Medical Board, Medical License A104473, Issued 06/18/2008 (Valid through August 31, 2009)

Maryland Board of Physicians, Medical License D65660, Issued 02/23/2007 (Valid through September 2008)

**CERTIFICATION:**

American Board of Neurological Surgeons, Board Eligible

American Board of Neurological Surgeons,  
Written Board Exam Step I: 99 percentile, score 674

**CLINICAL APPOINTMENTS:**

Instructor 2007-2008

Johns Hopkins University School of Medicine  
Department of Neurosurgery  
Baltimore, Maryland

Instructor 2006-2007

Northwestern University Feinberg School of Medicine  
Department of Neurological Surgery  
Chicago, Illinois

## **ACADEMIC HONORS AND AWARDS:**

Congress of Neurological Surgeons Depuy Spine Fellowship Award	2007-08
Congress of Neurological Surgeons, Resident SANS Challenge, First Place	2006
Graduation with Highest Distinction, USC Keck School of Medicine	2001
Dean's Scholar, USC Keck School of Medicine	2001
Alpha Omega Alpha, Honor Medical Society	2000
Howard Hughes Medical Institute Research Scholars Fellowship	1998-99
Hammonds Academic Achievement Award (Top 5% of Class)	1998
Summa Cum Laude, UCLA	1995
Phi Beta Kappa Honor Society, UCLA	1995
Merck Index Award, UCLA	1995
Departmental Honors, Department of Chemistry and Biochemistry, UCLA	1995
UCLA Honors Program, College of Letters and Science, UCLA	1993-95
Golden Key Honor Society, UCLA	1993
Alpha Lambda Delta Honor Society, UCLA	1992
Dean's Honor List	1991-95

## **PROFESSIONAL AND HONOR SOCIETIES:**

American Association of Neurological Surgeons (AANS)  
Congress of Neurological Surgeons (CNS)  
Joint Section on Disorders of the Spine and Peripheral Nerves  
Alpha Omega Alpha, Honor Medical Society  
Howard Hughes Medical Institute, Cloister Alumni  
American Medical Association  
Phi Beta Kappa Honor Society  
Golden Key Honor Society  
Alpha Lambda Delta Honor Society  
UCLA Association of Chemist and Biochemist

## **AREAS OF NEUROSURGICAL INTEREST:**

Spinal oncology: primary and metastatic tumors  
Spinal deformity and reconstructive spinal surgery  
Neuro-Oncology including spinal cord tumors and intracranial diseases  
Minimal invasive spine surgery  
Endoscopic and robotic assisted surgery  
Spine trauma  
Degenerative cervical and lumbar spine diseases  
Craniocervical junction deformities  
Stereotactic radiosurgery  
Skull-based tumor surgery  
Chiari Malformations

Microvascular decompression  
Aneurysms and vascular malformation surgery

#### **EDITORIALS:**

Ad hoc reviewer- Journal of Neurosurgery: Spine  
Ad hoc reviewer- Neurosurgery  
Ad hoc reviewer- Journal of Spinal Techniques and Disorders  
Ad hoc reviewer- European Spine Journal

#### **Grants and Research Awards:**

2007-2008

“Clinical Outcomes Study of Complex Spine Surgery and Minimal Invasive Surgery in Spinal Oncology,” **Congress of Neurological Surgeons Depuy Spine Fellowship Award**, Ziya Gokaslan M.D., Johns Hopkins University School of Medicine, Baltimore, Maryland.

1998-99

“Creating a Mouse Model for DiGeorge/Velocardiofacial Syndromes (DGS/VCFS),” **Howard Hughes Medical Research Scholar, HHMI-NIH Research Scholars Program (The Cloister Program)**, Anthony Wynshaw-Boris, M.D., Ph.D., National Human Genome Research Institute, National Institutes of Health, Bethesda, Maryland.

Summer 1997

“Elucidating Developmental genes for the Human Adrenal Glands,” Summer Student Research Fellow, **American Pediatric Society and Society for Pediatric Research Student Summer Research Fellowship**, Edward R.B. McCabe, M.D., Ph.D., UCLA Children’s Hospital, UCLA School of Medicine, Los Angeles, California.

1995-1996

“Gene Regulation of Arginase in *N. crassa*,” Research Assistant, Richard L. Weiss, Ph.D., Department of Chemistry and Biochemistry, UCLA, Los Angeles, California.

Summer 1993

“Defining K<sup>+</sup> Binding Domain of the Mammalian Na<sup>+</sup>, K<sup>+</sup>-ATPase,” Summer Student Research Fellow, **American Heart Association Student Summer Research Fellowship**, Robert A. Farley, Ph.D., Department of Physiology & Biophysics, School of Medicine, University of Southern California, Los Angeles, California.

#### **RESEARCH PRESENTATIONS:**

September 2008

**Patrick C. Hsieh MD**, Risheng Xu BS, Daniel M. Sciubba MD, Matthew Mcgirt MD, Clarke Nelson BS, Ali Bydon MD, Jean-Paul Wolinsky MD, Ziya L. Gokaslan MD;

*Long term clinical outcomes following attempted en bloc resections for malignant primary sacral tumors*

Oral Presentation, 43rd Annual SRS Meeting & Course, Salt Lake City, Utah

July 2008

Brian A. O'Shaughnessy MD, Tyler Koski MD, **Patrick C. Hsieh MD**, Stephen Ondra MD;  
*Incidence and Causes of Revision Surgery Following Thoracolumbar Fusion to the Sacrum for Kyphoscoliosis in Patients Greater than 60 Years Old*

Oral Presentation, 14th Internal Meeting on Advanced Spine Techniques (IMAST) Meeting, Hong Kong, China.

July 2008

Brian A. O'Shaughnessy MD, Timothy Kuklo MD JD, Tyler Koski MD, **Patrick C. Hsieh MD**, Stephen Ondra MD

*A Comparison Between Thoracic Pedicle Subtraction Osteotomy and Posterior Vertebral Column Resection for the Treatment of Fixed Sagittal Deformity*

Oral Presentation, 14th Internal Meeting on Advanced Spine Techniques (IMAST) Meeting, Hong Kong, China.

July 2008

**Patrick C. Hsieh MD**, Risheng Xu BS, Daniel M. Sciubba MD, Matthew McGirt MD, Clarke Nelson BS, Ali Bydon MD, Jean-Paul Wolinsky MD, Ziya L. Gokaslan MD

*Long term clinical outcomes following attempted en bloc resections for malignant primary sacral tumors*

Poster, 14th Internal Meeting on Advanced Spine Techniques (IMAST) Meeting, Hong Kong, China.

March 2008

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Ziya L. Gokaslan M.D., Charles Kuntz IV M.D., Stephen L. Ondra M.D.

*Posterior Vertebral Column Resection: A Novel Surgical Approach for the Treatment of Recurrent Tethered Cord Syndrome*

Poster, 2008 Annual Meeting, AANS/CNS Section on Disorder of the Spine and Peripheral Nerves, Orlando, Florida

October 2006

**Patrick C. Hsieh M.D.**, Nafis Ahmed M.S, John C. Liu M.D.

*Thorascopic Sympathectomy for Primary Palmer Hyperhidrosis: Long-term Outcomes and Complications*

Oral poster Presentation, 2006 Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois

October 2006

**Patrick C. Hsieh M.D.**, Robert J. Wienecke M.D., Tyler R. Koski M.D., Stephen L. Ondra M.D.  
*Pedicle Subtraction Osteotomy and Alar Osteotomy for the Correction of Pelvic Incidence: Technical note and 12 month follow up*

Poster, 2006 Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois

October 2006

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Sean Salehi M.D., Stephen Ondra M.D., John C. Liu M.D.

*Anterior Lumbar Interbody Fusion is Superior to Transforaminal Lumbar Interbody Fusion in Restoration of Local Spinal Profile and Alignment*

Oral poster Presentation, 2006 Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois

July 2006

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Sean Salehi M.D., Stephen Ondra M.D., John C. Liu M.D.

*Increased foraminal height, increased lordosis, and improved sagittal balance associated with anterior lumbar interbody fusion relative to transforaminal lumbar interbody fusion*, Oral Poster Presentation, 13th Internal Meeting on Advanced Spine Techniques (IMAST) Meeting, Athens, Greece.

May, 2006

**Patrick C. Hsieh M.D.**, Sandeep Bhangoo M.D., Kostas Panagiotopoulos M.D., John A. Kalapurakal M.D., Maryanne H. Marymont M.D., Jeffrey W. Cozzens M.D., James P. Chandler M.D., Sean Salehi M.D. and Robert M. Levy M.D., Ph.D.;

*Adjuvant Gamma Knife stereotactic radiosurgery at the time of tumor progression potentially improves survival for patients with Glioblastoma Multiforme*,

13<sup>th</sup> International Meeting of the Leksell Gamma Knife Society, Seoul, Korea

March 2006

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Sean Salehi M.D., Stephen Ondra M.D., John C. Liu M.D.

*Comparison of radiographic outcomes of Anterior Lumbar Interbody Fusion (ALIF) versus Transforaminal Lumbar Interbody Fusion (TLIF)*,

Oral Point Presentation, 2006 Annual Meeting AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Lake Buena Vista, Florida

February 2006

**Patrick C. Hsieh M.D.**, James P. Chandler M.D., Sandeep Bhangoo M.D., Kostas Panagiotopoulos M.D., John A. Kalapurakal M.D., Maryanne H. Marymont M.D., Jeffrey Cozzens M.D., Robert M. Levy M.D., Ph.D., Sean Salehi M.D.

*Gamma Knife Radiosurgery for Glioblastoma Multiforme: The Northwestern Experience*, Invited speaker, Northwestern Feinberg School of Medicine Department of Neurological Surgery Academic Day, Evanston, Illinois

October 2005

**Patrick C. Hsieh M.D.**, Robert J. Wienecke M.D., Tyler R. Koski M.D., Stephen L. Ondra M.D.  
*Sacral Osteotomies for Correction of Sagittal Balance and Pelvic Incidence*,  
2005 Congress of Neurological Surgeons Annual Meeting, Boston, Massachusetts.

October 2005

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Robert J. Wienecke M.D., Sean Salehi M.D., Stephen L. Ondra M.D.

*Thoracic Pedicle Subtraction Osteotomy: Can it be performed,*  
2005 Congress of Neurological Surgeons Annual Meeting, Boston, Massachusetts.

July 2005

**Hsieh PC**, Wienecke RJ, Koski TR, Ondra S.

*Sacral Osteotomies for Correction of Sagittal Balance and Pelvic Incidence,*  
12<sup>th</sup> Internal Meeting on Advanced Spine Techniques (IMAST), Banff, Canada.

July 2005

**Hsieh PC**, Koski TR, Wienecke RJ, Salehi S, Ondra S.

*Thoracic Pedicle Subtraction Osteotomy for correction of fixed sagittal deformity: Safety and Efficacy,*  
12<sup>th</sup> Internal Meeting on Advanced Spine Techniques (IMAST), Banff, Canada.

April 2005

**Hsieh PC**, Chandler JP, Bhangoo S, Panagiotopoulos K, Kalapurakal JA, Marymont MH, Cozzens JW, Levy RM, Salehi S.

*Gamma Knife Stereotactic Radiosurgery for treatment of Glioblastoma Multiforme,*  
2005 AANS Annual Meeting, New Orleans, Louisiana.

March 2005

**Hsieh PC**, Ondra SL

*Early experiences with Pedicle Subtraction Osteotomy (PSO) for correction of fixed sagittal deformity: technique and results,*  
Chicago Interurban spine meeting, Chicago, Illinois.

October, 1999

**Hsieh PC**, Kimber W, Hirotsune S, Paylor R, Scambler P, Wynshaw-Boris A,  
*Creating a Mouse Model for DiGeorge/Velocardiaofacial Syndromes (DGS/VCFS),*  
1999 Annual Meeting, the American Society of Human Genetics, San Francisco, California.

August, 1999

**Hsieh PC**, Kimber W, Hirotsune S, Paylor R, Scambler P, Wynshaw-Boris A,  
*Creating a Mouse Model for DiGeorge/Velocardiaofacial Syndromes (DGS/VCFS),*  
1999 Mouse Molecular Genetics Conference, EMBO, Heidelberg, Germany.

May, 1999

**Hsieh PC**, Kimber W, Hirotsune S, Paylor R, Scambler P, Wynshaw-Boris A,  
*Creating a Mouse Model for DiGeorge/Velocardiaofacial Syndromes (DGS/VCFS),* HHMI  
Research Scholars Program Scientific Presentations, Howard Hughes Medical Institute-National  
Institutes of Health, Bethesda, Maryland.

August, 1993

**Hsieh PC**, Farley RA,

*Evidence of Overlapping Binding Site for K<sup>+</sup> and Ouabain on the Mammalian Na<sup>+</sup>, K<sup>+</sup>-ATPase*, American Heart Association Annual Regional Meeting Los Angeles Chapter.

## **PUBLICATIONS:**

Daniel M. Sciubba M.D., Sophia Shakur B.S., Clarke Nelson B.S., Matthew McGirt M.D., **Patrick C. Hsieh M.D.**, Ziya L. Gokaslan M.D., Jean-Paul Wolinsky M.D.; *En bloc spondylectomy for treatment of tumor-induced osteomalacia*; Journal of Neurosurgery Spine, *In review*

**Patrick C. Hsieh, M.D.**, Brian A. O'Shaughnessy M.D., Ryan J. Halpin, M.D., Tyler R. Koski, M.D., Ziya L. Gokaslan, M.D., Stephen L. Ondra, M.D.; *Posterior Vertebral Column Resection Osteotomy (PVCR): A Novel Surgical Approach for the Treatment of Recurrent Tethered Cord Syndrome with One-Year Follow-Up*; Journal of Neurosurgery Spine; *In review*

Patrick A. Sugrue, M.D., **Patrick C. Hsieh M.D.**, Christopher C. Getch M.D., H Hunt Batjer M.D.; *Acute Symptomatic Cerebellar Tonsillar Herniation Following Intraoperative Lumbar Drainage*; Journal of Neurosurgery, *In Press*

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Daniel M. Sciubba M.D., Dave J. Moller M.D., Brian A. O'Shaughnessy M.D., Khan W. Li M.D., Ziya L. Gokaslan M.D., Stephen L. Ondra M.D., Richard G. Fessler M.D., John C. Liu M.D.; *Maximizing the Potentials of Minimally Invasive Spine Surgery (MIS) in Complex Spinal Disorders*; Neurosurgery Focus, 2008;25(2):E19

Brian A. O'Shaughnessy M.D., John C. Liu M.D., **Patrick C. Hsieh M.D.**, Aruna Ganju M.D., Tyler R. Koski M.D., Stephen Ondra M.D.; *Surgical Treatment of Fixed Cervical Kyphosis with Myelopathy*; Spine. 2008 Apr 1;33(7):771-8.

Daniel M. Sciubba M.D., Clarke Nelson B.S., **Patrick C. Hsieh M.D.**, Ziya L. Gokaslan M.D., Stephen L. Ondra M.D., Jean-Paul Wolinsky M.D., Ali Bydon M.D.; *Intraoperative Challenges in the Surgical Treatment of Ankylosing Spondylitis*; Neurosurg Focus, 2008;24(1):E10.

Daniel M. Sciubba M.D., **Patrick C. Hsieh M.D.**, Gregory S. McLoughlin M.D., George I. Jallo M.D.; *Pediatric tumors involving the spinal column*; Neurosurgery Clinic of North American, 2008 Jan;19(1):81-92

John H. Chi M.D., Ali Bydon M.D., **Patrick C. Hsieh M.D.**, Tim Witham M.D., Jean-Paul Wolinsky M.D., Ziya L. Gokaslan M.D.; *Epidemiology and demographics for primary vertebral tumors*; Neurosurgery Clinic of North American, 2008 2008 Jan;19(1):1-4.

**Patrick C. Hsieh M.D.**, Tyler R. Koski M.D., Brian A. O'Shaughnessy M.D., Patrick A. Sugrue M.D., Sean Salehi M.D., Stephen Ondra M.D., John C. Liu M.D.; *Anterior Lumbar Interbody Fusion versus Transforaminal Lumbar Interbody Fusion: Implications in the Restoration of Foraminal Height, Local Disc Angle, Lumbar Lordosis, and Sagittal Balance*; Journal of Neurosurgery Spine, 2007 Oct;7(4):379-86.

**Patrick C. Hsieh M.D.**, Stephen L. Ondra M.D., Robert J. Wienecke M.D., Brian O'Shaughnessy M.D., Tyler R. Koski M.D.; *A novel approach in the restoration of sagittal balance following iatrogenic sacral fracture and resultant sacral kyphotic deformity*; Journal of Neurosurgery Spine, 2007 Apr;6(4):368-72.

**Patrick C. Hsieh M.D.**, Issam A. Awad M.D., Christopher C. Getch M.D.; Bernard R. Bendok M.D.; Szymon S. Rosenblatt M.D.; H. Hunt Batjer M.D.; *Current Updates in Perioperative Management of Intracerebral Hemorrhage*; Neurol Clin. 2006 Nov; 24(4):745-64.

Issam A. Awad M.D., **Patrick Hsieh M.D.**; *Current management of intracerebral haemorrhage*; The Pan Arab Journal of Neurosurgery. 2006 Oct; 10(2)

**Patrick C. Hsieh M.D.**, James P. Chandler M.D., Sandeep Bhangoo M.D., Kostas Panagiotopoulos M.D., John A. Kalapurakal M.D., Maryanne H. Marymont M.D., Jeffrey Cozzens M.D., Robert M. Levy M.D., Ph.D., Sean Salehi M.D.; *Adjuvant Gamma Knife stereotactic radiosurgery at the time of tumor progression potentially improves survival for patients with Glioblastoma Multiforme*; Neurosurgery. 2005 Oct; 57(4):684-92

**Hsieh PC**, Wienecke RJ, O'Shaughnessy BA, Koski TR, Ondra SL.; *Surgical strategies for vertebral osteomyelitis and epidural abscess.*; Neurosurg Focus. 2004 Dec 15;17(6):E4.

Kimber WL, **Hsieh P**, Hirotsune S, Yuva-Paylor L, Sutherland HF, Chen A, Ruiz-Lozano P, Hoogstraten-Miller SL, Chien KR, Paylor R, Scambler PJ, Wynshaw-Boris A, *Deletion of 150 kb in the minimal DiGeorge/velocardiofacial syndrome critical region in mouse*, Human Molecular Genetics. 8(12):2229-37, 1999 Nov.

#### **BOOK CHAPTERS:**

**Patrick C. Hsieh M.D.**, Dan Sciubba M.D., John Chi M.D., Ali Bydon M.D., Ziya L. Gokaslan M.D.; *"Surgical Management of Spinal Neoplasms"* in "Principles and Practices of Neuro-Oncology: A Multidisciplinary Approach"; Editors: Mehta, Chang, Vogelbaum, and Guha; Demos Medical Publishing; *In press*

**Patrick C. Hsieh, M.D.**, Patrick A. Sugrue M.D., H. Hunt Batjer, M.D., Issam Awad M.D.; *"Surgical management of Intracerebral Hemorrhage"* in "Acute Management of Brain and Spinal Cord Injury: Evolving Paradigms"; Editors: Bhardwaj A, Ellegala D, Kirsch JR., *In press*

#### **TEACHING EXPERIENCES:**

Clinical Instructor 2007-2008  
Johns Hopkins University School of Medicine  
Department of Neurosurgery  
Baltimore, Maryland

Clinical Instructor 2006-2007

Northwestern University Feinberg School of Medicine  
Department of Neurological Surgery  
Chicago, Illinois

Teaching Assistant  
University of California Los Angeles  
Department of Chemistry and Biochemistry  
Los Angeles, California

1995-1996

**LANGUAGES:**

Mandarin, Taiwanese, German (College level: 2 years).

**INTEREST:**

Basketball, Snow Boarding, Tennis, Guitar, and Travel.