



CURRICULUM VITAE
JAMES N. CAMPBELL, M.D.

OFFICE ADDRESS:

Department of Neurological Surgery
The Johns Hopkins Hospital
600 North Wolfe Street, Meyer 5-109
Baltimore, Maryland 21287-7509

CURRENT POSITIONS:

Professor of Neurosurgery
Department of Neurosurgery
The Johns Hopkins University
School of Medicine (Since 1988)

Director, Blaustein Pain Treatment Center
(Since 1991)

Principal Professional Staff
Applied Physics Laboratory
Johns Hopkins Road
Laurel, MD (Since 1991)

Founder & President
American Pain Foundation
1996-

Executive in Residence
Interwest Partners
2005-present

Member, Board of Directors
Detroit Trading
2006-

Amplimmune
Member, Board of Directors, 2007

PREVIOUS POSITIONS:

Assistant Professor, 1979-1982, Department of Neurosurgery, Johns Hopkins University, School of Medicine

Associate Professor, 1982-1988, Department of Neurosurgery, Johns Hopkins University, School of Medicine

EDUCATION:

1969 B.A. Degree with High Honors and High Distinction in Psychology from the University of Michigan, 1969

1973 M.D. Degree from Yale University, School of Medicine

1973 Diplomate of the National Board of Medical Examiners

1973-1974 Surgical Internship, The Johns Hopkins Hospital

1974-1979 Residency in Neurosurgery, The Johns Hopkins Hospital

1975-1977 Postdoctoral Fellowship in Neurophysiology, Department of Physiology, The Johns Hopkins University, School of Medicine

1982 Diplomate of the American Board of Neurological Surgery

AWARDS, HONORS, ETC.:

3/68, 3/69 Class Honors, University of Michigan

3/69 James B. Angell Scholar, University of Michigan

3/69 Phi Beta Kappa

1969 Bachelor of Arts Degree from the University of Michigan with High Honors, and High Distinction

1971 Winternitz Award for Excellent Work in Pathology, Yale University

1975-1977 Research Fellowship Award from the National Institutes of Health

1980-1985 Teacher Investigator Award from the National Institutes of Health

1988 Javits Neuroscience Investigator Award

1988 Frederick W. L. Kerr Award from the American Pain Society for Research on Peripheral Afferent Mechanisms of Somatic Sensations

| | |
|---------------|---|
| 1991- present | The Best Doctors in America, Woodward/White, Inc. Publishers |
| 1992 | \$250,000 unrestricted award for outstanding research in pain, Bristol-Myers Squibb Company |
| 1997 | Grass Award from the Society of Neurological Surgeons |
| 1999 | Distinguished Service Award, American Pain Society |
| 2001 | The John and Emma Bonica Public Service Award, American Pain Society |
| 2004 | Pfizer Visiting Professor, Washington University, St. Louis, MO |
| 2004 | John Liebeskind Pain Research Award, American Academy of Pain Medicine |

PATENTS GRANTED:

List available upon request.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

| | |
|--------------|---|
| 1975-present | Society for Neuroscience |
| 1979-present | International Association for the Study of Pain |
| 1982-present | American Association of Neurological Surgery |
| 1983-present | American Pain Society |
| 1984-present | Sunderland Society |
| 1991-present | Neurosurgical Society of America |
| 1993-present | Society of Neurological Surgeons |
| 1993-present | American Society for Peripheral Nerve |
| 1996-present | American Academy of Pain Medicine |
| 1999-present | North American Spine Society |
| 2206-present | National Venture Capital Association |

PRIOR ADMINISTRATIVE ACTIVITIES:

1984-2000 Director, Residency Training Program
Department of Neurosurgery, Johns Hopkins Hospital

1994-1995 President, American Pain Society

1996 Founder and President, American Pain Foundation

EDITORIAL BOARDS

Editor: Newsletter, Joint Section on Spinal and Peripheral Nerve Disorder, 1987

Editorial Advisory Board, Pain Forum (formerly American Pain Society Journal), 1991-1998

Associate Editor, Pain Journal, 1993-1999

Editorial Board, Pain: Clinical Updates, published by the International Association for the Study of Pain (IASP), 1993-1996

Editorial Advisory Board, The Journal of Pain, 1999

Editorial Board, Pain Research and Clinical Management, 2002-present

Advisory Board, Journal of Headache and Pain, 2002-present

Medical & Academic Partnership in Pain Medicine Advisory Board Member (Pfizer), 2004

Associate Editor, Journal of Neuropathic Pain and Symptom Palliation, 2004-present

Advisor, Pain Supplement of The Scientist, 2005

COMMITTEE/ORGANIZATIONAL ACTIVITIES

Member: Site Visit Committee for the National Cancer Institute, University of Washington, Seattle, 1982.

Member: Program Committee (for organization 1983 national meeting), American Pain Society, 1983.

Special Member: "Sensory Disorders and Language Study Section", NIH, 1983 and 1984.

Member: Site Visit Team, National Institute of Health, University of California, San Francisco, 1984.

Member: Nominating Committee, American Pain Society, 1984.

Member: Research Committee, American Pain Society, 1984.

Member: Nominating Committee, American Pain Society, 1985.

Ad Hoc Member: Board of Scientific Counselors, Review of Neurobiology and Anesthesiology Branch, NIDR, May, 1985.

Member: Marshals Committee, American Association of Neurological Surgeons, Atlanta, 1985.

Member: Registration Sub-Committee, American Association of Neurological Surgeons, Atlanta, 1985.

Member: Site Visit Team National Institute of Health, University of Texas Medical Branch, Galveston, Texas, July, 1985.

Member: Special Review Committee for Orofacial Pain Research Centers, National Institute of Health, (Site Visits to UCLA, University of Washington, State University of New York-Buffalo, University of Virginia), 1985-1986.

Assistant Chairman Newsletter Committee for the Joint Section on Spinal Disorders of the AANS/CNS, May, 1986.

Member: Fifth World Congress on Pain, Scientific Program Committee of the IASP, Germany, 1984, 1985, 1986, 1987.

Member: Sixth World Congress on Pain, Ad Hoc Subcommittee on Refresher Courses of the IASP, Adelaide, Australia, 1987, 1988, 1989, 1990.

Member: Scientific Program Committee of the American Pain Society, 1987-1988.

Member: Awards and Certificates Committee of the American Pain Society, 1987-1988.

Member: Scientific Program Committee, American Pain Societies, Joint Meeting of the Canadian and American Pain Societies, Toronto, Canada, November, 1988.

Member: Board of Councillors of "Section on Pain", The American Association of Neurological Surgeons, 1988 to present.

Member: Site Visit Team, National Institute of Health, Chapel Hill, North Carolina, March, 1988.

Board of Directors, American Pain Society, October 1990-October 1993.

Member: Executive Council, American Pain Society, October 1990-present

Member Scientific Program Committee, American Pain Society, New Orleans, LA, November 1991.

Member: Institutional Research Grant Project Committee, Johns Hopkins University School of Medicine, 1992-93 and 1993-94.

Member: Research and Research Training Committee, Society of Neurological Surgeons, 1994-present.

Member: Pain Award Selection Committee, Bristol-Myers Squibb Company, 1994.

Member: Task Force on Governmental Issues, American Pain Society, 1994-95.

Member: Public Affairs Committee, American Pain Society, 1995-1996.

Program Chair: 6th Annual American Society for Peripheral Nerve meeting, St. Louis, May 30-June 1, 1996.

Member: Awards Committee, American Pain Society, 1996-1998.

Member: Program Committee, Neurosurgical Society of America, 1998-1999.

Member: Scientific Program Committee, 9th Annual meeting of the American Society for Peripheral Nerve, Los Angeles, CA, June 19-21, 1999.

Member: Bylaws Committee, American Society for Peripheral Nerve, 2002-2003.

Member: Nominating Committee, Past President representative, American Pain Society, 2002-2003.

SELECTED INVITED LECTURES [FROM 1981]

Invited Lecture: "Peripheral Neural Mechanisms of Pain Sensation," University of Texas, 1981.

Invited Lecture: "Peripheral Neural Mechanisms of Pain Sensation," University of Utah, 1981.

Invited Lecture: "Mechanisms of Hyperalgesia," Neurology Grand Rounds, The Johns Hopkins University, 1982.

Invited Lecture: "The Peripheral Nervous System and Pain," Hand Surgery Study Group, Union Memorial Hospital, 1982.

Invited Lecture: "DCP., Dolorosa Cutanea Pathologica," Maryland State Dermatological Society, 1982.

Invited Lecture: "Neural Mechanisms of Hyperalgesia," Cornell University, New York, NY, 1983.

Invited Lecture: "Phantom Limb Pain," Neurology Grand Rounds, The Johns Hopkins University, 1983.

Invited Lecture: "Effects of General Anesthetics on Nociceptor Function," Anesthesiology Grand Rounds. The Johns Hopkins University, 1983.

Invited Lecture: "Hyperalgesia as a Manifestation of Pain," The Fourth General Meeting,

American Pain Society, Chicago, Illinois, 1983.

Chairman and Moderator of Symposium entitled "Neuromas," The Fourth General Meeting, American Pain Society, Chicago, Illinois, 1984.

Invited Lecture: Special Plenary Session, "Hyperalgesia - New Insights," Fourth World Congress International Association for the Study of Pain, Seattle, Washington, 1984.

Invited Lecture: Sponsored by the Cordis Corporation, "Current Clinical Perspectives on Neural Stimulation for the Control of Pain: Surgery and Drugs," Miami, Florida, 1984.

Invited Lecture: "Avulsion of the Brachial Plexus," Department of Surgery Grand Rounds, The Johns Hopkins University, 1984.

Invited Lecture: "Mechanisms of Pain Sensation in Normal and Pathological States," Neuroscience Study Group, National Institutes of Health, 1984.

Invited Lecture: "Entrapment Syndromes, How I Do It" Lecture Series. Congress of Neurological Surgeons, New York, 1984.

Seminars and Invited Lectures: "Pain and Affective Disorders," Biology of Disease Workshop, Society for Neuroscience, Boston, 1983, and Anaheim, California, 1984.

Invited Lecture: "Neurophysiological Basis for Radicular Pain, and Salvage Surgery for Low Back Pain," University of Medicine and Dentistry of New Jersey, Advances in Pain Management, Atlantic City, 1984.

Invited Lecture: "Perception of Pain: Introduction of Nomenclature and Pathophysiology," (to First Year Medical School Class), School of Medicine, The Johns Hopkins University, 1984, 1985.

Invited Lecture: "Peripheral Nerve Surgery for Tumor and Trauma," American Association of Neurological Surgeons, Atlanta, 1985.

Invited Lecture: "Painful Sequelae of Peripheral Nerve Injury," Seminar, Dept. of Anesthesiology, Yale University School of Medicine, January 15, 1985.

Invited Lecture: "The Effects of General Anesthetics on the Peripheral Nervous System," Grand Rounds, Dept. of Anesthesiology, Yale University School of Medicine, January 16, 1985.

Invited Lecture: "Tumors and Trauma of the Peripheral Nervous System," Breakfast Seminar, American Association of Neurological Surgeons, Atlanta, 1985.

Presentation: "Mechanism of Primary and Secondary Hyperalgesia: An Update," Research Society of Neurological Surgeons, Chapel Hill, 1985.

Invited Lecture: "The Role of Primary Afferents in Pain and Hyperalgesia," Second Symposium on Pain, The Department of Anatomy, University of Minnesota, Minneapolis, May, 1985.

Invited Lecture: "Peripheral Neural Mechanisms of Pain," Neuroscience Council Meeting,

Johns Hopkins University, June 19, 1985.

Invited Lecture: "Brachial Plexus Injuries," Eighth International Congress of Neurological Surgery, Toronto, Canada, July, 1985.

Invited Lecture: (Chairman), "The Peripheral Pain Receptors," Breakfast Seminar, American Pain Society Fifth General Meeting, Dallas, Texas 1985.

Invited Lecture: "Peripheral Neural Substrates of Pain Sensation," Division of Nuclear Medicine and Radiation Health Science, The Johns Hopkins University, October, 1985.

Invited Lecture: "Adventures in the Treatment of Pain," Recorded for Audio-Digest, Mensana Clinic Symposium on Pain, October, 1985.

Presentation: "Physiology of Nociception: A Review," Baltimore College of Dental Surgery, Dental School, Baltimore, Maryland, December, 1985.

Invited Lecture: "Difficult Pain Syndromes," St. Catherine Hospital, East Chicago, Indiana, November, 1985.

Invited Lecture: "Brachial Plexus Injuries," Surgery Grand Rounds, St. Agnes Hospital, Baltimore, Maryland, January, 1986.

Invited Lecture: "Surgical Considerations in the Treatment of Pituitary Tumors," Symposium on Skull Base Tumors, jointly sponsored by the Departments of Otolaryngology and Neurosurgery, The Johns Hopkins Hospital, February, 1986.

Invited Lecture: "Preliminary Analysis of the Hopkins Experience with the Multiply Operated Lumbar Spine," The Second Annual Meeting of the Joint Section on Spinal Disorders, San Diego, California, February, 1986.

Invited Lecture: "Narcotics do not Affect the Response of Unmyelinated Afferents in Monkey," Eleventh Annual Scientific Meeting of The American Society of Regional Anesthesia, San Antonio, Texas, March 1986.

Invited Lecture: "Peripheral Nerve Surgery," Department of Neurosurgery, Georgetown University, May, 1986.

Invited Lecture: "Painful Sequelae after Nerve Injury," 15th Annual Meeting of the American Academy of Thermology, Johns Hopkins University, Baltimore, Maryland, June, 1986.

Invited Lecture: "Neural Mechanisms of Hyperalgesia Induced by Nerve Injury," Sunderland Society Meeting, Vienna, Austria, June, 1986.

Invited Lecture: "Effects of Injury on Somatosensory Systems," Satellite Symposium Of The International Union of Physiological Sciences, July, 1986.

Invited Lecture: "Hyperalgesia Following Peripheral Nerve Injury," Symposium on the Effects of Injury on the Somatosensory System, Mount Hood, Oregon, July 1986.

Invited Lecture: "Examination of Comatose Patient," (Second Year Medical Students), Johns Hopkins Hospital, Hurd Hall, March, 1984-1987.

Invited Lecture: "Mechanisms of Pain and Electrical Stimulation," Johns Hopkins Hospital, Department of Rehabilitation Medicine, March, 1987.

Invited Lecture: "Results of the DREZ Operation For Brachial Plexus Avulsion," Second International DREZ Symposium, Durham, N.C., April 1987.

Invited Lecture: "Basic and Clinical Research on Painful Sequelae of Nerve Injury," Society of Neurological Surgery, Baltimore, MD, May, 1987.

Invited Lecture: Plenary Session, "Painful Sequelae of Nerve Injury," Fifth World Congress, International Association for the Study of Pain, Hamburg, Federal Republic of Germany, August, 1987

Invited Lecture: "Neuroablative Procedures for Pain", Fifth World Congress, International Association for the Study of Pain, August, 1987.

Invited Lecture: "Hyperalgesia", Fifth World Congress, International Association for the Study of Pain, August, 1987.

Invited Lecture: (Moderator), "Managing Brachial Plexus Lesions," Congress of Neurological Surgeons, Baltimore, MD., October 1987.

Invited Lecture: "Bradykinin and Pain", Good Samaritan Hospital, Division of Clinical Immunology, Good Samaritan Hospital, January, 1988.

Invited Lecture: "Sympathetic Nervous System and Nerve Injury Pain", Neurosurgical Society of America, Annual Meeting, April, 1988.

Invited Speaker: "Peripheral Nerve Injuries", American Association of Neurological Surgeons, Toronto, Ontario, Canada, April, 1988.

Invited Speaker: "The Pathophysiology of Nerve Injury in Relation to Low Back Pain, NIH Workshop on New Directions in Low Back Pain Research, May, 1988.

Invited Lecture: "Pharmacological Implications of Neural-Cutaneous Interactions", Skin Pharmacology Society, Paris, France, May, 1988.

Invited Lecture: Frederick W. L. Kerr Memorial Award Address, "Hyperalgesia and Neuropathic Pain: From Bedside to the Laboratory", American Pain Society, Toronto, Canada, 1988.

Invited Lecture: Plenary Address, "Perspectives on Mechanisms and Treatment of Sympathetically Maintained Pain", American Pain Society, Toronto, Canada, 1988.

Invited Lecture: Chairman and Speaker "The Painful Upper Extremity" Breakfast Seminar, American Pain Society, Toronto, Canada, 1988.

Invited Lecture: Space Telescope Science Institute, Baltimore, Maryland, April, 1989

Invited Lecture: "Hyperalgesia in Neurologic Diseases", Annual meeting of the American Academy of Neurology, Chicago, Illinois, April, 1989.

Instructor: Hands-On Neural Regeneration Workshop, Baltimore, Maryland, May, 1989.

Invited Lecture: "The Mechanisms by Which Electrical Stimulation of Primary Afferents Relieve Pain", Neurosurgical Society of American meeting, Bermuda, May 1989.

Invited Lecture: "Plasticity of the Neural Events Related to Pain", Satellite Symposium on "Information Processing in the Somatosensory System", XXXI International Congress of Physiological Sciences, Stockholm, Sweden, July 1989.

Invited Lecture: "Pain Induced by Bradykinin Injection in Man is Not Mediated by Histamine Release", New Strategies in Pain Control Symposium, Princeton, NJ, July 1989.

Invited Speaker: "Injury to Brachial Plexus". Grand Round, Department of Neurosurgery, Johns Hopkins Hospital, September 1989.

Invited Speaker: "Ablative Procedures in Chronic Pain", Eighth Annual American Pain Society, Phoenix, Arizona, October 1989.

Invited Lecture: "Neuropathic and sympathetically mediated pain", Annual meeting of the Canadian Pain Society, Banff, Canada, October 1989.

Invited Speaker: "Sympathetic mediated pain", Annual meeting of the Canadian Pain Society, Banff, Canada, October 1989.

Invited Speaker: "Neurophysiology and psychophysiological studies of peptides and inflammatory mediators involved in pain, Annual meeting of the Canadian Pain Society, Banff, Canada, October 1989.

Invited Speaker: "Sympathetically maintained pain. New insights into mechanisms and treatment", Meeting of the American Academy of Physical Medicine and Rehabilitation Society, November 1989.

Participant: Dahlem Workshop on "Towards a new pharmacotherapy of pain: Beyond morphine," Berlin, West Germany, November 1989.

Invited Speaker: "Hunter's canal syndrome", Cincinnati Sportsmedicine and Orthopaedic Center, Cincinnati, OH, February 1990.

Invited Speaker: "Neuropathic Pain", Annual meeting of The Western USA Pain Society, Park City Utah, February 1990.

Invited Speaker and Chairman: Topical Seminar, "Sympathetically Maintained Pain", VIth World Congress on Pain, Adelaide, Australia, April 1990.

Invited Speaker: Topical Seminar, "The Management of Peripheral Neuropathies, Radiculopathy and Causalgia," VIth World Congress on Pain, Adelaide, Australia, April 1990.

Invited Speaker: "The mechanism for the development of ectopic excitability to mechanical stimuli in neuromas," Neurobiology of nociception, Satellite meeting of the VIth World Congress on Pain, Kauai, Hawaii, April 1990.

Invited Speaker: "Peripheral nerve surgery," AANS Annual meeting, Nashville, TN, April 1990.

Invited Speaker: "Sympathetically maintained pain", Controversies in Pain Management, AANS Annual meeting, Nashville, TN, April 1990.

Invited Speaker: "Advances in Pain Research and Therapy," Meeting of the National Advisory Neurological Disorders and Stroke Council, NIH, Bethesda, MD, May 1990.

Invited Lecture: "Neuropathic Pain: A role for the sympathetic nervous system," Sixth William M. Witter Memorial Lecture on Pain, UCSF, San Francisco, CA, October 1990.

Invited Lecture: "The molecular pharmacology of sympathetically maintained pain," Neurology Grand Rounds, Johns Hopkins Hospital, October 1990.

Invited Lecture: "Thoracic Outlet Syndrome," Surgery Grand Rounds, Johns Hopkins Hospital, December 1990.

Invited Lecture: "Sympathetically maintained pain," 8th Annual Symposium on Advances in Pain Management: Sympathetically Maintained Pain Syndrome, Orlando, FL, February 1991.

Invited Lecture: CNS Research & Development, Searle, "New directions in treatment of sympathetically maintained pain", Chicago, IL, April 1991.

Invited Lecture: Treatment strategies for sympathetically maintained pain, Conference on Sympathetically Maintained Pain, Mensana Clinic, Baltimore, MD, April 1991.

Invited Lecture: Reflex sympathetic dystrophy and sympathetically maintained pain, Fifth Annual International Conference on Neuropathic and Musculoskeletal Pain, New York, NY, April 1991.

Invited Lecture: Central v. peripheral mechanisms in neuropathic pain, Fifth Annual International Conference on Neuropathic and Musculoskeletal Pain, New York, NY, April 1991.

Invited Speaker: "Syndromes and problems in surgery of the plexus regions and peripheral nerves," Annual meeting of the American Association of Neurological Surgeons, Breakfast Seminar, New Orleans, LA, April 1991.

Invited Speaker: "Hyperalgesia: Variations in expression in different disease states," Second Bristol-Myers Squibb Symposium on Pain Research, Galveston, TX, May 1991.

Invited Speaker: "The role of alpha receptors in sympathetically maintained pain," Annual meeting of the Neurosurgical Society of America, San Destin, FL, May 1991.

Invited Lecture: "What is the role of bradykinin in pain of inflammatory origin?", Sterling Drug, Inc., Rensselaer, NY, May 1991

Invited Lecture: "The molecular basis of interactions between the sympathetic nervous system and nociceptors," ANPP Sponsored Research Symposium, Alsace, France, June 1991

Invited Lecture: "Sympathetic maintained pain mechanisms," Mechanisms and Management of Somatosensory Disorders of the Facial Region, University of Maryland School of Medicine, Baltimore, MD, September 1991

Invited Lecture: "Current understanding of the pathogenesis and treatment of central and peripheral pain," Annual meeting of the American Academy of Physical Medicine and Rehabilitation, Washington, DC, October 1991

Invited Lecture: "Management of brachial plexus injuries," Congress of Neurological Surgeons Annual Meeting, Orlando, FL, October 1991

Invited Lecture: "Upper-extremity pain," American Pain Society Annual meeting, New Orleans, LA, November 1991

Invited Lecture: "The role of the sympathetic nerve system in pain," Massachusetts General Hospital Neurosurgery Grand Rounds, Boston, MA, December 1991

Invited Lecture: "The role of the sympathetic nerve system in pain," New England Pain Associate "Kasdin" Lecture, St. Elizabeth's Hospital, Boston, MA, December, 1991

Invited Lecture: "The role of the sympathetic nerve system in pain," Spaulding Rehabilitation Hospital Grand Rounds, Boston, MA, December, 1991

Invited Lecture: "Hyperalgesia and sensitization: An overview of neural mechanisms," Symposium: What Do Nociceptors Tell the Brain?, Madrid, Spain, February, 1992

Chairman, Session on Sensitization & Hyperalgesia, Part I, Symposium: What Do Nociceptors Tell the Brain?, Madrid, Spain, February, 1992

Invited Lecture: "Mechanisms of Pain", Undergraduate course: Introduction to the Human Brain, Johns Hopkins University, Baltimore, MD, March, 1992

Invited Lecture: "Hyperalgesia and the sympathetic nervous system," Symposium: New Trends in Referred Pain and Hyperalgesia, Chieti, Italy, March, 1992

Panelist: "Peripheral nerves: Tumors and entrapment," AANS, San Francisco, CA, April 1992

Invited Participant: "Practical Clinic VIII: Anatomy and surgery of the nerves of upper and lower extremities," AANS, San Francisco, CA, April 1992

Invited Participant: "Reflex sympathetic dystrophy," Controversies and Consensus in Neurology course for the American Academy of Neurology, San Diego, CA, May 1992

Invited Lecture: "The molecular basis of the 'Tinel' sign," The Sunderland Society meeting, Malmö, Sweden, May 1992

Invited Lecture: "Neural mechanisms of neuropathic pain: Implications for Treatment II", Peripheral and Central Pain Mechanisms Symposium, Bethesda, MD, July 1992

Invited Participant: Co-Chairman, "Postoperative Pain 1," 5th International Congress, The Pain Clinic, sponsored by The World Society of Pain Clinicians, Jerusalem, Israel, September 1992

Invited Lecturer: "Neuropathic Pain," 5th International Congress, The Pain Clinic, sponsored by The World Society of Pain Clinicians, Jerusalem, Israel, September 1992

Invited Panelist: "Sympathetic related pain" 5th International Congress, The Pain Clinic, sponsored by The World Society of Pain Clinicians, Jerusalem, Israel, September 1992

Invited Panelist: "Update on Sympathetically Maintained Pain", 11th Annual Scientific meeting of the American Pain Society, San Diego, CA, October 1992

Invited Speaker: "Relief of Clinical and Experimental Pain in Man by Implanted Stimulation Devices," Breakfast Seminar, 11th Annual Scientific meeting of the American Pain Society, San Diego, CA, October 1992

Invited Lecturer: "Pain and the sympathetic nervous system: A role for the alpha-1 adrenergic receptor," Eastern Virginia Medical School, Microsurgical Research Center, Norfolk, VA, October 1992

Invited Lecturer: "A model of neuropathic pain," 8th Marshall Memorial Lecture, University of Toronto, Division of Neurosurgery, Toronto, Ontario, Canada, December 1992

Invited Lecturer: "Management of pain in neurosurgery," University of Toronto, Division of Neurosurgery, Toronto, Ontario, Canada, December 1992

Invited Panelist: "Thoracic outlet syndrome - Who has it, What to do about it," Joint Section of the Spine and Peripheral Nerves meeting, Tucson, AZ, February 1993

Invited Lecture: "Neurosurgical evaluation in pain," Anesthesia Pain Grand Rounds, Johns Hopkins Hospital, Baltimore, MD, March 1993

Invited Speaker: "Consensus Conference on Neurosurgical Management of Pain," AANS meeting, Boston, MA, April 1993

Invited Speaker: "Surgical Procedures for Pain of Peripheral Nerve Origin", AANS meeting, Boston, MA, April 1993

Invited Participant: "Varicella-Zoster Virus Infection and Post-Herpetic Neuralgia: New Insights into Pathogenesis and Pain Management," Varicella-Zoster (VZV) Foundation, Bethesda, MD, May 1993

Invited Lecture: "Diagnosis and therapy of sympathetically maintained pain," Fourth Annual Bristol-Myers Squibb Symposium on Pain Research - Pharmacological Approaches to the Treatment of Chronic Pain: New Concepts and Critical Issues, Monterey, CA, June 1993

Invited Participant: Topical Seminar, "Capsaicin receptors and antagonists", 7th World

Congress on Pain, Paris, France, August 1993

Chairman, "Windows into Brain Functions", Satellite Symposium of the 7th World Congress on Pain, Beaune, Paris, August 1993

Invited Speaker: "Pain mediated by non-nociceptive systems," Satellite Symposium of the 7th World Congress on Pain, Session entitled Normal and Abnormal Pain Mechanisms, Beaune, Paris, August 1993

Invited Lecture: "Nerve injury associated with inguinal herniorrhaphy", Surgical Grand Rounds, Johns Hopkins Hospital, Baltimore, MD, January 1994

Invited Speaker: Breakfast seminar, "Management of peripheral nerve lesions and entrapment syndromes," American Association of Neurological Surgeons Annual meeting, San Diego, CA, April 1994

Invited Lecture: "Cellular components necessary for mechano-electrical transduction are conveyed to primary afferent terminals by fast axonal transport," American Society for Peripheral Nerve, Rye Brook, NY, May 1994

Invited Guest Speaker: "Sympathetically maintained pain," Japan Society of Pain Clinicians, Jokkaichi City, Japan, July 1994

Invited Guest Speaker: "Properties of peripheral nociceptors," The Neurobiology of Pain, Universidad Complutense Summer Course, Madrid, Spain, July 1994

Invited Guest Speaker: "Chronic pain in the clinic: mechanistic and therapeutic advances," Session on Pathophysiology and Pharmacology of Chronic Pain at the XII International Congress of Pharmacology, Montreal, Canada, July 1994

Invited Lecture: "The Pain Management Approach: Who Should be Referred? What Should be Our Expectations?", Total Knee Review Course, The Knee Society, Stouffer Harborplace Hotel, Baltimore, MD, October 1994

Invited Guest Speaker: "Nerve Injury Pain: A comprehensive approach," The Pain Rehabilitation Center at Good Samaritan Hospital, Cincinnati, OH, November 1994

Invited Guest Speaker: "The Use of Opiates in the Treatment of Neuropathic Pain," The Pain Rehabilitation Center at Good Samaritan Hospital, Cincinnati, OH, November 1994

Invited Lecture: "Transposition is the preferred treatment for ulnar nerve entrapment," Joint Section on Disorders of the Spine and Peripheral Nerves meeting, Phoenix, AZ, February 1995

Panel Discussant: "Treatment of peripheral nerve emergencies," Joint Section on Disorders of the Spine and Peripheral Nerves meeting, Phoenix, AZ, February 1995

Invited Guest Lecturer: "Pain Management," University of Maryland Division of Neurosurgery, VA Outpatient Center, Baltimore, MD, April 1995

Keynote address: "The interface between RSD and SMP: Evolving concepts," Southern Pain

Society meeting, Occidental Grand Hotel, Atlanta, GA, May 1995

Invited Lecture: "Diagnosis of difficult pain problems in patients with non-malignant pain," 1st Annual Multidisciplinary Pain Update, Baltimore, MD, August 1995

Invited Lecture: "Sympathetically maintained pain," 2nd East-West International Conference on Pain Management, Beijing, China, August 1995

Invited Lecture: "Neuropathic pain," 2nd East-West International Conference on Pain Management, Beijing, China, August 1995

Presidential Address at American Pain Society meeting, Los Angeles, CA, November 1995

Invited Lecture: "Link of RSD to sympathetic nervous system," RSD, An Update Conference, Lake Buena Vista, FL, December 1995

Invited Lecture: "Clinical implications," RSD, An Update Conference, Lake Buena Vista, FL, December 1995

Invited Participant: Interagency Chronic Pain Task Force meeting, sponsored by National Institute of Dental Research, NIH, Bethesda, MD, December 1995

Invited Speaker: "Nociceptors and their relationship to the sympathetic nervous system," Multidisciplinary Autonomic Seminar, Department of Neurology, Johns Hopkins Hospital, January 1996

Invited Speaker: "Thoracic outlet syndrome: Operative management," Joint Section on Disorders of the Spine and Peripheral Nerves, Orlando, FL, February 1996

Invited Panelist: "Technology Assessment Conference on Management of Temporomandibular Disorders," NIH, NIDR, Bethesda, MD, April 1996

Invited Speaker: "Anatomy of the Brachial Plexus and Upper Extremity," 8th Annual International Spine Workshop, Uniformed Services University of the Health Sciences, Bethesda, MD, June 1996

Refresher Course Chair: "Complex Regional Pain Syndrome and the Sympathetic Nervous System," 8th World Congress on Pain (IASP), Vancouver, Canada, August 1996

Visiting Professor: "Thoracic Outlet Syndrome", University of Michigan, Ann Arbor, MI, September 1996

Guest Participant: "Symposium on Molecular Aspects of the Neurobiology of Pain Conference, Boston, MA, October 1996

Guest Speaker: "Clinical Overview of Pain Syndromes and Treatments (Nociceptive v. Neuropathic Pain)", Symposium on Pain Syndromes and Mechanisms: Where does Gabapentin Fit In?", Parke-Davis, Ann Arbor, MI, October 1996

Invited Lecture: "Neurosurgical Approaches to Treatment of Chronic Pain", Israeli Chapter IASP

meeting, Tel Aviv, Israel, December 1996

Invited Lecture: "Role of the Sympathetic Nervous System in Neuropathic Pain", Israeli Chapter IASP meeting, Tel Aviv, Israel, December 1996

Invited Panelist: "Entrapment Neuropathies: Thoracic outlet syndrome," Joint Spine Section of the AANS, Newport Beach, CA, February 1997

Member: Residency Review Committee, Society of Neurological Surgeons, Pittsburgh, PA, May 1997

Invited Speaker: "Rethinking Neurosurgical Education: Institution-based training," Society of Neurological Surgeons, Pittsburgh, PA, May 1997

Grass Award Lecture: "From nociceptor to the bedside: Studies of neuropathic pain," Society of Neurological Surgeons, Pittsburgh, PA, May 1997

Invited Speaker: "Painful sequelae of nerve injury," American Society for Peripheral Nerve, Williamsburg, VA, June 1997

Keynote Address: "Relevance of the basic sciences to clinical medicine," Jefferson Medical College, 1997 White Coat Ceremony for the Class of 2001, Philadelphia, PA, September 1997

Invited Speaker: "Peripheral pain: Mechanisms and therapies," American Neurological Association Annual meeting, San Diego, CA, October 1997

Invited Speaker: "Capsaicin revisited as a treatment for neuropathic pain," Novel Targets in the Treatment of Pain sponsored by IBC, Washington, DC, October 1997

Symposium participant: "Chronic Pain Management: My Way is the Correct Way," American Pain Society Annual meeting, New Orleans, LA, October 1997

Keynote Speaker: "Novel approaches to pain management," Conference on Designing, Developing and Testing New Approaches to the Management of Cancer Pain, Johns Hopkins University, Baltimore, MD, November 1997

Invited Panelist: "Reflex Sympathetic Dystrophy/Sympathetically Maintained Pain," New Directions in Pain Research sponsored by NIH, Bethesda, MD, November 1997

Visiting Professor: "Advances in understanding neuropathic pain," Duke University Medical Center, Durham, NC, November 1997

Visiting Professor: "Neuropathic pain: Basic science considerations," University of Oklahoma, OCNS Neurohour, Oklahoma City, OK, January 1998

Visiting Professor: "Neuropathic pain: Clinical considerations," University of Oklahoma, Neurosurgery Grand Rounds, Oklahoma City, OK, January 1998

Invited Panelist: "Symposium on Peripheral Nerves," Joint Section on Disorders of the Spine and Peripheral Nerves, Rancho Mirage, CA, February 1998

Invited Panelist: "Peripheral Nerve Injury and Entrapment: Case presentation of nerve patients with pain problems," AANS Annual Meeting, Philadelphia, PA, April 1998

Invited Speaker: "Repair of the Brachial Plexus in Cases of Avulsion Injury," Neurosurgical Society of America, Quebec City, Quebec, CN, May 1998

Moderator: Session on Complex Regional Pain Syndrome, American Society for Peripheral Nerve, Vancouver, BC, Canada, May 1998

Invited Speaker: "Influences of Nerve Root Injury on the Behavior of Afferents that Belong to Adjacent Roots in Monkey," American Society for Peripheral Nerve, Vancouver, BC, Canada, May 1998

Invited Participant: "International Conference on Mechanisms and Treatment of Neuropathic Pain: Progress and Prospects", Rochester, NY, June 1998

Invited Speaker: "Mechanisms of Hyperalgesia: Lessons from Clinical and Experimental Models," Clinical Neuroscience Series, Johns Hopkins Hospital, Baltimore, MD, November 1998

Visiting Professor: "Neuropathic Pain: From the Neuron to the Clinic," Ralph H. and Freda E. Ojemann Lecture, University of Iowa, Iowa City, IA, November 1998

Moderator: The Neurobiology of Pain, National Academy of Sciences Colloquium, Irvine, CA, December 1998

Invited Speaker: Practical Clinic, "Minimally Invasive Procedures for Spinal Pain Syndromes: Sympathetic blocks, sympathectomy", American Association of Neurological Surgeons Annual meeting, New Orleans, LA, April 1999

Invited Speaker: "Current Treatment of Neuropathic Pain: Neuroablative and Neuroaugmentative Approaches," 2nd International Conference on Mechanisms and Treatment of Neuropathic Pain, Washington, DC, June 1999

Invited Instructor: Current Concepts in Interbody Fusion: A symposium and practical workshop for biological implants. Sponsored by Synthes Spine, Washington, DC, June 1999

Invited Speaker: "Biological rationale for distal therapies for pain," Peripheral Nerve Society meeting, LaJolla, CA, July 1999

Panel Discussant: "Diagnostic Criteria of CRPS and SMP, "Pain and the Sympathetic Nervous System Symposium, Budapest, Hungary, August 1999

Invited Participant: "Pain: New Targets-New Treatments," Boca Raton, FL, October 1999

Invited Speaker: Practical Course entitled Grants: Getting Started, Applications, Funding, "What reviewers look for—the inside view," Congress of Neurological Surgeons annual meeting, Boston, MA, October 1999

Invited Speaker: Special Course on Practical Approaches to Selected Peripheral Nerve Injuries:

“Thoracic Outlet Syndrome,” AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Indian Wells, CA, February 2000

Invited Speaker: “Transaxillary Resection of the First Rib Is a Better Operation for Thoracic Outlet Syndrome Than Supraclavicular Neuroplasty of the Brachial Plexus - Results of a Randomized Trial,” AANS Annual Meeting, San Francisco, CA, April 2000

Invited Speaker: “Overview of Pain and Clinical Needs,” The MRL (Merck) Pain & Headache Research Retreat, Princeton, NJ, May 2000

Invited Speaker: Section on Chronic Pain Management: “Pathophysiology of Pain”, Failures of Spinal Surgery: A Tribute, Baltimore, MD, May 2000

Invited Speaker: Section on Chronic Pain Management: “Drug Management”, Failures of Spinal Surgery: A Tribute, Baltimore, MD, May 2000

Moderator: Session on “Neurosurgical Leadership,” Neurosurgical Society of America Annual meeting, Durango, CO, June 2000

Invited Speaker: “Session on Chronic Pain: Update on Neuropathic Pain,” World Congress of Anaesthesiology, Montreal, Canada, June 2000

Invited Presenter. “Problem-Based, Case-Oriented, Active Learning Discussions on Chronic Pain Management,” Breakfast Roundtable Discussion at the American Pain Society Annual meeting, Atlanta, GA, November 2000

Invited Speaker. “Thoracic Outlet Syndrome: Surgical Treatment is Superior,” AANS/CNS Section on Disorders of the Spine and Peripheral Nerve Annual meeting, Phoenix, AZ, February 2001

Invited Speaker. “Review Session: Neurosurgical Techniques,” American Academy of Pain Medicine Annual meeting, Miami Beach, FL, February 2001

Invited Speaker. “Anatomy of the Peripheral and Sympathetic Nervous System,” American Academy of Pain Medicine Annual meeting, Miami Beach, FL, February 2001

Invited Speaker. “Principles of Pain Management: General Aspects of Pharmacological, Anesthesiologic, Neurosurgical and Physiotherapeutic Approaches to the Treatment of Pain,” Neurology Student Course, Johns Hopkins University, Baltimore, MD, February 2001

Invited Speaker. Scientific Session: Controversies in Peripheral Nerve Disorders, “Thoracic Outlet Syndrome: Surgical Treatment is Superior,” AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, Miami Beach, FL, February 2001

Invited Speaker. “Neurosurgical Techniques,” American Academy of Pain Medicine Annual meeting, Miami Beach, FL, February 2001

Invited Speaker. “Anatomy of the Peripheral and Sympathetic Nervous System,” American Academy of Pain Medicine Annual meeting, Miami Beach, FL, February 2001

Invited Speaker. "Failed Back Surgery Syndrome," American Academy of Pain Medicine Annual meeting, Miami Beach, FL, February 2001

Invited Speaker. "Enhancing Opioid Analgesia: Emerging Mechanisms and Treatment Strategies," American Pain Society Annual Meeting, April 2001

Invited Speaker. "Gender and Pain Session. Medicating Chronic Pain: What Works in Women," 9th Annual Congress on Women's Health and Gender-Based Medicine, Washington, DC, June 2001

Invited Speaker. "Surgical Management of Brachial Plexus Pathology: How to Select TOS patients for Operation," Congress of Neurological Surgeons Annual meeting, San Diego, CA, September 2001

Invited Speaker. Pain: Neuroanatomy, Pathophysiology and Treatment: "Treatment options and considerations for musculoskeletal pain syndromes," American Academy of Orthopaedic Surgeons, Dallas, TX, February 2002

Invited Speaker. "Principles of Pain Neurophysiology and Anatomy," AANS Pain Section Satellite Symposium, Chicago, IL, April 2002

Invited Speaker. "New Insights into the Basis of Pain Resulting from Nerve Injury," 3rd International Congress on Genetics and Regeneration in Neuroscience, Terni, Italy, June 2002

Invited Speaker: "Is there a role for sympathectomy in the treatment of sympathetically maintained pain?", Topical Workshop, 10th World Congress on Pain, San Diego, CA, August 2002

Invited Speaker. "Minimally Invasive Procedures for Spinal Pain Syndromes," Practical Course at the Congress of Neurological Surgeons Annual meeting, Philadelphia, PA, September 2002

Visiting Professor. "Clinical Aspects of Neuropathic Pain," Grand Rounds presentation for the Department of Anesthesiology & Critical Care, Beth Israel Deaconess Medical Center, Boston, MA, October 2002

Invited Speaker. "Placebo Response and Pain," Complimentary and Alternative Medicine Division, Johns Hopkins Hospital, Baltimore, MD, October 22, 2002

Invited Speaker. "Primary Afferent Mechanisms of Neuropathic Pain," 5th International Conference on Mechanisms and Treatment of Neuropathic Pain, Bermuda, November 2002

Invited Speaker. "Neuroaugmentative and Neuroablative Approaches," 6th International Conference on Mechanisms and Treatment of Neuropathic Pain, San Francisco, CA, September 2003

Invited Speaker: "Neuropathic Pain and Its Management," Resident Lecture Series, Good Samaritan Hospital, Baltimore, MD, December 9, 2003

Invited Speaker. "Management of Neuropathic Pain: 77 y.o. woman presents with complaints of left chest wall pain," Medical Grand Rounds, Johns Hopkins Hospital, February 24, 2004

Invited Speaker. "Management of Neuropathic Pain, Part 2," Medical Grand Rounds, Johns Hopkins Hospital, April 23, 2004

Invited Grand Rounds Speaker. "Neuropathic Pain and Peripheral Nerve Surgery," Stanford University, Stanford, CA, April 30, 2004

Invited Speaker, "Role of Sympathectomy in the Management of CRPS." Special symposium on Neurosurgical Management of Complex Regional Pain Syndrome (Reflex Sympathetic Dystrophy and Causalgia) at the AANS Pain Section Symposium, May 2004

Invited Speaker, "Origins of the Signals in Neuropathic Pain." Neuropathic Pain – Changing Paradigms in Diagnosis and Treatment Conference, Madrid, Spain, May 2004

Invited Speaker, "Neuropathic Pain Syndromes in Cancer Pain Patients." Current Concepts in Cancer Pain Management symposium, Johns Hopkins University, October 14, 2004

Case Discussant, "Treating Refractory Neuropathic Pain: Neurosurgery Perspective, 7th International Conference on Mechanisms and Treatment of Neuropathic Pain, Bermuda, November 2004

Pfizer Visiting Professorship in Pain Medicine, "The Role of Intact Nociceptors in the Production of Neuropathic Pain," Washington University Pain Center, St. Louis, MO, November 2004

Invited Participant at Pfizer's Pregabalin Pain Management Advisory Board Meeting, New York, NY, March 2005

Invited Participant at Pfizer's Neurology Advisory Board Meeting, New York, January 2006

Invited Speaker, "The Neurological Basis of the Placebo Response," CAM Lecture Series, Johns Hopkins University, January 23, 2006

Plenary Speaker, "Molecular Neurosurgery: From Fantasy to Reality," 2nd International Forum on Pain Medicine, Guadalajara, Mexico, May 2006

Invited Lecturer, "The Sympathetic Nervous System and Pain: A Mechanistic Approach," 2nd International Forum on Pain Medicine, Guadalajara, Mexico, May 2006

Invited Speaker, "Overview of Pain Mechanisms (with Dr. Allan Basbaum), McKnight Conference on Neuroscience, Aspen, CO, June 2006

Case Discussant, "Treating Refractory Neuropathic Pain: Neurosurgery Perspective," 9th International Conference on the Mechanisms and Treatment of Neuropathic Pain, Bermuda, November 2006

Invited Speaker, "Abnormal Signals From the Peripheral Nervous System and Neuropathic Pain," Israel Neuroscience Society, Hebrew University Center for Research on Pain, Eilat, Israel, December 2006

PUBLISHED ABSTRACTS:

Campbell, J.N., LaMotte, R.H.: "Response latency to first pain in human subjects," Seventh Annual Neuroscience Meeting, Anaheim, California, 1977.

Campbell, J.N., LaMotte, R.H.: "Peripheral neural mechanisms sub-serving pain: Comparison of human psychophysical judgments with unitary responses of primary afferents in monkeys," Presented to the Twelfth International Congress of Physiological Sciences, Paris, France, 1977.

Meyer, R.A., Campbell, J.N., LaMotte, R.H.: "Sensitization of A-delta nociceptive afferents to noxious radiant heat delivered to the monkey hand," Seventh Annual Neuroscience Meeting, Anaheim, California, November, 1977.

Long, D.M., Campbell, J.N., Gucer, G.: "Electrical stimulation in a comprehensive pain treatment program," Presented to the Second World Congress on Pain, August, 1978, Montreal, Canada.

Campbell, J.N., R.H. LaMotte, and R.A. Meyer, "Comparison of the properties of heat sensitive A and C afferents that innervate the glabrous skin of the monkey hand," Second World Congress on Pain, August, 1978, Montreal, Canada.

Campbell, J.N., Meyer, R.A.: "Correlational analysis of hyperalgesia in humans with the responses of nociceptive primary afferents in the monkey," The Tenth Annual Neuroscience Meeting, Cincinnati, Ohio, November, 1980.

Campbell, J.N., Meyer, R.A., Jaffe, S.R.: "Comparison of the neural mechanisms of hyperalgesia in glabrous and hairy skin," Third World Congress on Pain, Edinburgh, Scotland, September, 1981.

Campbell, J.N., Meyer, R.A., Jaffe, S.R.: "Evidence for two distinct classes of unmyelinated nociceptive afferents responsive to mechanical and thermal stimuli in the monkey," Eleventh Annual Neuroscience Meeting, Los Angeles, California, October, 1981.

Long, D.M., Campbell, J.N., Freeman, T.: "Failure of naloxone to affect chronic pain or stimulation induced pain relief in man," Third World Congress on Pain, Edinburgh, Scotland, September, 1981.

Meyer, R.A., Campbell, J.N., Raja, S.N., Mackinnon, S.E., Burke, R., and Dellon, A.L., "Neural activity originating from a neuroma in the baboon," Society for Neuroscience Abstracts, Vol. 8, p. 855, 1982.

Campbell, J.N., Meyer, R.A., Raja, S.N., Burke, R., and Aryanpur, J.J.: "Neural mechanisms of hyperalgesia: Effects of partial injury to the receptive field of nociceptive afferents," Society for Neuroscience Abstracts, Vol. 8, p. 854, 1982.

Raja, S.N., Meyer, R.A., Campbell, J.N. and Burke, R.: "General anesthetic affect the response of primary nociceptive afferents in primates," Society for Neuroscience Abstracts, Vol. 8, 855, 1982.

Meyer, R.A., Raja, S.N., Campbell, J.N. and Burke, R.: "Evidence for emphatic conduction

between unmyelinated fibers in the peripheral nerve of primates," Society for Neuroscience Abstracts, Vol.9, 1983.

Raja, S.N., Meyer, R.A., Campbell, J.N. and Burke, R.: "Sensitization of unmyelinated nociceptive afferents by halothane," Society for Neuroscience Abstracts, Vol. 9, 1983.

Raja, S.N., Meyer, R.A., Campbell, J.N., Burke, R.: "Halothane sensitizes cutaneous nociceptors in monkey," Annual Meeting American Society of Anesthesiologists, Atlanta, Georgia, October, 1983.

Campbell, J.N.: "Neurophysiological mechanisms of hyperalgesia," Invited symposium session, Fourth Annual Meeting of the American Pain Society, Chicago, Ill., November, 1983.

Raja, S.N., Meyer, R.A., Campbell, J.N., Burke, R.: "The response of nociceptive afferents in the peripheral nerve to cutaneous heat stimuli is altered by general anesthetics," Fifty-seventh Congress of International Anesthesia Research Society, New Orleans, 1983.

Raja, S.N., Campbell, J.N., and Meyer, R.A.: "Evidence for different mechanisms for primary and secondary hyperalgesia," Fourth Annual American Pain Society Meeting, Chicago, Illinois, November, 1983.

Raja, S.N., Campbell, J.N. and Meyer, R.A., "Effects of general anesthetics on response of nociceptive primary afferents in monkey," Third International Conference on Molecular and Cellular Mechanisms of Anesthesia, Calgary, Canada, June 1984.

Meyer, R.A., Campbell, J.N. and Raja, S.N.: "Coupling of action potential activity between unmyelinated fibers," Fourth World Congress on Pain, Seattle, Washington, August, 1984.

Raja, S.N., Campbell, J.N., Meyer, R.A., and Mackinnon, S.E.: "Hyperalgesia following peripheral nerve injury is signaled by myelinated fibers," Fourth World Congress on Pain, Seattle, Washington, September 1984.

Meyer, R.A., Raja, S.N., Campbell, J.N.: Coupling of action potential activity between unmyelinated fibers in the peripheral nerve of monkey, Presented at the IVth World Congress on Pain, Seattle, 1984.

Meyer, R.A., Campbell, J.N., Raja, S.N.: "Characteristics of primary and secondary hyperalgesia differ," Society for Neuroscience Abstracts, Vol. 10, 1984.

Raja, S.N., Campbell, J.N., Meyer, R.A., Mackinnon, S.E.: "Myelinated fibers in peripheral nerves signal the hyperalgesia that follows nerve injury. Anesthesiology: 61:A199, 1984.

Campbell, J.N., Meyer, R.A., Khan, A.A., Raja, S.N.: "Hyperalgesia to heat in human subjects and sensitization of C-nociceptors in monkeys do not occur adjacent to a mechanical injury of the hairy skin," Society for Neuroscience Abstracts, 1985.

Meyer, R.A., Campbell, J.N., Raja, S.N.: "Antidromic nerve stimulation in monkey does not sensitize C-fiber nociceptors to heat," Society for Neuroscience Abstracts, 1985.

Raja, S.N., Meyer, R.A., Campbell, J.N., Khan, A.A.: "Narcotics do not alter the response of C-

fiber nociceptive afferents in monkeys," Society for Neuroscience Abstracts, 1985.

Campbell, J.N.: "Lesions in the region of dorsal root entry zone (DREZ) relieve pain from avulsion of the brachial plexus," Fifth Annual Meeting of the American Pain Society, Dallas, Texas, October, 1985.

Raja, S.N., Manning, D.C., Campbell, J.N. and Meyer, R.A.: "Bradykinin sensitizes nociceptors to heat," Substance P and Neurokinin, Montreal, 1986.

Koschorke, G.M., Meyer, R.A. and Campbell, J.N.: "Response of myelinated afferents in monkey neuroma to vibratory stimuli," Society for Neuroscience Abstracts, 1986.

Meyer, R.A. and Campbell, J.N.: "Coupling between unmyelinated primary afferents does not involve sympathetics," Society For Neuroscience Abstracts, 1986.

Khan, A.A., Raja, S.N., Campbell, J.N., Hartke, T.V. and Meyer, R.A.: "Bradykinin sensitizes nociceptors to heat stimuli," Society For Neuroscience Abstracts, 1986.

Campbell, J.N., Khan, A.A., Meyer, R.A. and Raja, S.N.: "The wide dynamic range response of primary afferent nociceptors that innervate hairy skin in monkey," Society For Neuroscience Abstracts, 1986.

Raja, S.N., Meyer, R. A., Khan, A.A. and Campbell, J.N.: "Effects of general anesthetics on response of low-threshold, slowly - adapting mechanoreceptors," Society For Neuroscience Abstracts, 1986.

Raja, S.N., Campbell, J.N., Meyer, R.A., Frost, S.A. and Khan, A.A.: "Sensory testing in patients with Causalgia or Reflex Sympathetic Dystrophy," American Pain Society, Sixth Annual Meeting, Washington, D. C., November, 1986.

Khan, A.A., Meyer, R.A., and Campbell, J.N.: "Responses of unmyelinated nociceptive afferents to histamine," Society For Neuroscience Abstracts, 1987.

Meyer, R.A., Campbell, J.N., and Hartke, T.V.: "A novel technique to search for nociceptors," Fifth World Congress on Pain, Hamburg, West Germany, August, 1987.

Manning, D.C., Khan, A.A., Campbell, J.N., Meyer, R.A. and Raja, S.N.: "Bradykinin induced cutaneous pain is independent of wheal and flare," Fifth World Congress on Pain, Hamburg, West Germany, August, 1987.

Oakland, D.B., Koschorke, G.M., Meyer, R.A. and Campbell, J.N.: "Myelinated afferents that innervate neuromas in monkey display marked sensitivity to vibratory stimuli," Fifth World Congress on Pain, Hamburg, West Germany, August, 1987.

Raja, S.N., Campbell, J.N., Meyer, R.A., Frost, S.A. and Khan, A.A.: "Does hyperalgesia to cold stimuli characterize patients with sympathetically maintained pain (Reflex Sympathetic Dystrophy)," Fifth World Congress on Pain, Hamburg, West Germany, August, 1987.

Campbell, J.N., Raja, S.N., and Meyer, R.A.: "Sympathetic nervous system and nerve injury pain," Neurosurgical Society of America, Hot Springs, Virginia, April, 1988.

Koschorke, G.M., Meyer, R.A., and Campbell, J.N.: "Myelinated afferents in an acutely injured nerve develop a response to vibratory stimuli", Society for Neuroscience, Toronto, Ontario, Canada, November, 1988.

Khan, A.A., Raja, S.N., Meyer, R.A., Campbell, J.N., and Manning, D.C.: "C-fiber nociceptors in monkey are sensitized by bradykinin antagonists", Society for Neuroscience, Toronto, Ontario, Canada, November, 1988.

Cohen, R.H., Campbell, J.N., Khan, A.A., and Meyer, R.A.: "The deactivation of C-fiber nociceptive receptors following intradermal injection of capsaicin analogue NE-21610", Society for Neuroscience, Toronto, Ontario, Canada, November, 1988.

Koschorke, G.M., Meyer, R.A., and Campbell, J.N.: "A conditioning lesion enhances the rate of development of mechanosensitivity in an acutely cut nerve," Society of Neuroscience Abstracts 15:878, 1989.

Kozak, S.L., Meyer, R.A., Raja, S.N., Manning, D.C., and Campbell, J.N.: "Evidence that bradykinin induced cutaneous pain is not mediated by histamine release," Society of Neuroscience Abstracts 15:439, 1989.

Koschorke, G.-M., Meyer, R.A., and Campbell, J.N.: "Evidence that axonal transport is involved in the development of mechanosensitivity in an acutely injured nerve". Eighth Annual American Pain Society Meeting, Phoenix, Arizona, October, 1989.

Treede, R.-D., Meyer, R.A., and Campbell, J.N.: "Mechanical and heat receptive fields of cutaneous C-fiber nociceptors coincide". Society of Neuroscience, Phoenix, Arizona, October-November, 1989.

Raja, S.N., Treede, R.-D., Davis, K.D., Campbell, J.N., Tewes, P.A. and Empting-Koschorke, L.D.: "Systemic alpha adrenergic antagonist relieves sympathetically maintained pain". Eighth Annual American Pain Society Meeting, Phoenix, Arizona, October, 1989.

Treede, R.-D., Meyer, R.A., and Campbell, J.N.: "A subclass of A-fiber nociceptors may signal first pain". Eighth Annual American Pain Society Meeting, Phoenix, Arizona, October, 1989.

Treede, R.-D., Raja, S.N., Davis, K.D., Tewes, P.A., and Campbell, J.N.: "Pain relief during sympathetic blockade is not secondary to skin temperature change". Eighth Annual American Pain Society Meeting, Phoenix, Arizona, October 1989.

Campbell, J.N.: "Neurophysiology and psychophysiological studies of peptides and inflammatory mediators involved in pain." Canadian Pain Society Annual Meeting, Banff, Canada, October 1989.

Campbell, J.N.: "Neuropathic and sympathetically mediated pain." Canadian Pain Society Annual Meeting, Banff, Canada, October 1989.

Lynch, M., Campbell, J., Purkis, I.: "Sympathetic mediated pain." Canadian Pain Society Annual Meeting, Banff, Canada, October 1989.

Treede, R.-D., Meyer, R.A., Campbell, J.N.: "Primary nociceptive afferents in monkey that may signal first pain". Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Treede, R.-D., Raja, S.N., Davis, K.D., Meyer, R.A., Campbell, J.N.: Evidence that alpha-adrenergic receptors mediate sympathetically maintained pain (reflex sympathetic dystrophy). Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Koschorke, G.M., Meyer, R.A. and Campbell, J.N.: The development of neural responsiveness to mechanical stimuli at the location of nerve injury requires axonal transport. Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Campbell, J.N., Davis, K.D., Meyer, R.A., North, R.B.: The mechanism by which dorsal column stimulation affects pain: Evidence for a new hypothesis. Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Cohen, R.H., Meyer, R.A., Davis, K.D., Treede, R.-D., Campbell, J.N.: Mechanically insensitive afferents (MIAs) in cutaneous nerves of monkey. Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Lin, C., Cohen, R.H., Rosenberg, A., Meyer, R.A., Campbell, J.N.: Capsaicin fails to block conduction in the intact primate nerve. Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Davis, K.D., Campbell, J.N., Raja, S.N., Treede, R.D., Lin, C., and Meyer, R.A.: Topical application of an α -adrenergic agonist relieves hyperalgesia in sympathetically-maintained pain: A case study. Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Raja, S.N., Kozak, S.L., Manning, D.C., Meyer, R.A., Campbell, J.N.: Intradermal bradykinin induces hyperalgesia to heat stimuli in man. Proceedings of the VIth World Congress on Pain, Adelaide, Australia, April 1990.

Campbell, J.N., Raja, S., Davis, K., Treede, R.-D., and Meyer, R.A.: The molecular pharmacology of sympathetically maintained pain, Sunderland Society, September 1990.

Oakland, D.B., Meyer, R.A., and Campbell, J.N.: Stimulus history affects the heat response of C-nociceptors, Society for Neurosciences, October 1990.

Raja, S.N., Mitzel, E.L., and Campbell, J.N.: Prostaglandin E_1 sensitizes cutaneous nociceptors in monkey, Society for Neurosciences, October 1990.

Cohen, R.H. and Campbell, J.N.: Capsaicin, or the analogue NE-21610, applied to the transected primate nerve markedly inhibits heat sensitivity of the developing neuroma, Society for Neurosciences, October 1990.

Treede, R.D., Oakland, B.D., Meyer, R.A., and Campbell, J.N.: The apparent heat threshold of a C-fiber nociceptor is dependent on stimulus parameters, Society for Neurosciences, October 1990.

Koschorke, G.M., Meyer, R.A., and Campbell, J.N.: Evidence that fast axonal transport is

involved in the development of mechanosensitivity in an acutely cut nerve, Society for Neurosciences, October 1990.

Davis, K.D., Meyer, R.A., Treede, R.D., Cohen, R.H., and Campbell, J.N.: Chemo-sensitivity and sensitization of mechanically insensitive afferents in the primate, Society for Neurosciences, October 1990.

Koschorke, G.M., Meyer, R.A., and Campbell, J.N.: The development of mechano-sensitivity requires fast axonal transport, American Pain Society, St. Louis, October 1990.

Davis, K.D., Raja, S.N., Treede, R.D., Meyer, R.A., and Campbell, J.N.: Topical application of clonidine eliminates hyperalgesia at site of administration in patients with sympathetically maintained pain, American Pain Society, St. Louis, October 1990.

Campbell, J., Raja, S., Davis, K., Treede, R.-D., and Meyer, R.: "The role of alpha receptors in sympathetically maintained pain," Neurosurgical Society of America, San Destin, FL, May 1991. Campbell, J.: "Hyperalgesia: Variations in expression in different disease states," Second Bristol-Myers Squibb Symposium on Pain Research, Galveston, TX, May 1991.

Treede, R.-D., Meyer, R.A., and Campbell, J.N.: "A-fiber nociceptors with a fast response to heat are absent in monkey glabrous skin," Society for Neuroscience Annual meeting, November 1991.

Cervero, F., Meyer, R.A., and Campbell, J.N.: "Prickle and pain in normal hyperalgesic skin: Evidence that low threshold mechanoreceptors are responsible for the pain of secondary hyperalgesia," Society for Neuroscience Annual meeting, November 1991.

Meyer, R.A., Davis, K.D., Raja, S.N., and Campbell, J.N.: "Sympathectomy does not abolish bradykinin-induced hyperalgesia to heat in human," Society for Neuroscience Annual meeting, November 1991.

Pappagallo, M., Belzberg, A.J., and Campbell, J.N.: "Successful treatment to erythromelalgia with high doses cyproheptadine," Society for Neuroscience Annual meeting, November 1991.

Meyer R.A., Davis, K.D., Turnquist, J.L., Filloon, T.G., Pappagallo, M. and Campbell, J.N.: "Intradermal injection of the capsaicin analog, NE-21610, prevents the development of hyperalgesia following a burn," Society for Neuroscience Annual meeting, October 1992.

Davis, K.D., Meyer, R.A., Turnquist, J.L., Pappagallo, M., Filloon, T.G. and Campbell, J.N.: "Cutaneous injection of the capsaicin analog, NE-21610, produces analgesia to heat but not mechanical stimuli in man," Society for Neuroscience Annual Meeting, October 1992.

Pappagallo, M., Raja, S.N., and Campbell, J.N.: "Open label trial with opioids in the management of post herpetic neuralgia: Two and six month follow up results, American Pain Society, 1993.

Belzberg, A.J., Manning, D., Meleka, S., Campbell, J.N.: "Pitfalls in the diagnosis of sympathetically maintained pain (SMP), Proceedings of the VIIth World Congress on Pain, 1993.

Pappagallo, M., Raja, S.N. and Campbell, J.N.: "Efficacy of opioids in the long-term management of post herpetic neuralgia, Proceedings of the VIIth World Congress on Pain, 1993.

Campbell, J.N., Raja, S.N., Belzberg, A.J., Shir, Y., Meyer, R.A.: "Mechanisms, diagnosis, and therapy of sympathetically maintained pain," Bristol-Myers Squibb Symposium (IV), 1993.

Slugg, R.M., Schneider, W., Meyer, R.A., and Campbell, J.N.: "Response of A- and C-fiber nociceptors in monkey to controlled mechanical stimuli: Initial results from a new mechanical stimulator," Society for Neuroscience Annual Meeting, November 1993.

Selig, D.K., Meyer, R.A., and Campbell, J.N.: "Noradrenergic excitation of cutaneous nociceptors two weeks after ligation of spinal nerve L₇ in monkey," Society for Neuroscience Annual Meeting, November 1993.

Belzberg, A.J., Meleka, S., Campbell, J.N.: "Sympathetically maintained pain: Establishing the diagnosis," American Society for Peripheral Nerve, May 1994.

Meleka, S.M., Raja, S.N., Turnquist, J.L., and Campbell, J.N.: "Placebo responses pose an infrequent problem in the phentolamine test for sympathetically maintained pain (SMP), American Pain Society, November 1994.

Slugg, R.M., Meyer, R.A., and Campbell, J.N.: "Suppression of response of cutaneous C- and A-fiber nociceptors in the monkey to repeated mechanical stimuli differs," Society for Neuroscience Annual Meeting, November 1994.

Wesselmann, U., Burnett, A.L., Campbell, J.N.: "The role of the sympathetic nervous system in chronic visceral pain," Society for Neuroscience Annual Meeting, November 1995.

Campbell, J.N. and Belzberg, A.J.: "Nerve fibers in the proximal end of the distal segment of a previously severed nerve in man: Evidence for side-to-end nerve sprouting," American Society for Peripheral Nerve Annual Meeting, May 1996.

Slugg, R.M., Meyer, R.A., and Campbell, J.N.: "Mechanical sensitization is localized to the region of a mechanical injury for cutaneous A-fiber nociceptors in the monkey," Society for Neuroscience Annual Meeting, November 1996.

Ali, Z., Ringkamp M., Chien, H.F., Campbell, J.N., Flavahan, N.A., and Meyer, R.A.: "Cutaneous C-fiber nociceptors develop alpha-1 adrenergic sensitivity following L6 spinal nerve ligation in monkey," Society of Neuroscience Annual Meeting, November 1996.

Treede, R.-D., Meyer, R.A., and Campbell, J.N.: Fast and slow heat transduction mechanisms in A-fiber mechanically-insensitive afferents from monkey hairy skin. Society of Neuroscience Annual Meeting, October 1997.

Peng, Y.B., Campbell, J.N., and Meyer R.A.: Antidromic activation of C-fiber nociceptors in monkey produces a short-term suppression of the response to heat stimuli. Society of Neuroscience Annual Meeting, October 1997.

Huang, J.H., Ali, Z., Campbell, J.N., and Meyer, R.A.: Pain ratings to punctate mechanical

stimuli are similar throughout the zone of secondary hyperalgesia. Society of Neuroscience Annual Meeting, October 1997.

Campbell, J.N. and Meyer, R.A.: Intradermal capsaicin produces a vigorous discharge in mechanically-insensitive A-fiber nociceptors of the monkey. Society of Neuroscience Annual Meeting, October 1997.

Meyer, R.A., Peng, Y.B., and Campbell, J.N.: Mechanical stimulation can lead to a short-term enhancement of the response to heat in C-fiber nociceptors of monkey. Society of Neuroscience Annual Meeting, October 1997.

Oropeza, M., Fuchs, P.N., Bencherif, B., Li, S.T., Ravert, H., Musachio, J., Mathews, B., Campbell, J.N., Dannals, B., and Frost, J.J.: The effect of capsaicin-induced pain on human brain mu opioid receptor binding measured by PET. Society of Nuclear Medicine Annual Meeting, June 1998.

Peng, Y.B., Ringkamp, M., Campbell, J.N., and Meyer, R.A.: Changes in excitability of cutaneous nociceptor terminals of monkey after antidromic action potential invasion. Society of Neuroscience Annual Meeting, November 1998.

Ringkamp, M., Peng, Y.B., Campbell, J.N., and Meyer, R.A.: The peripheral branching structure of identified cutaneous nociceptors of the monkey. Society of Neuroscience Meeting, November 1998.

Huang, J.H., Fuchs, P.N., Roza, C., Ali, Z., Campbell, J.N., and Meyer, R.A.: Pain ratings to punctate mechanical stimuli in secondary hyperalgesia zone produced by capsaicin injection are dose-dependent. Society of Neuroscience Meeting, November 1998.

Meyer, R.A., Magerl, W., Campbell, J.N., Treede, R.-D., and Fuchs, P.N.: Normal punctate hyperalgesia in capsaicin desensitized skin. Society of Neuroscience Meeting, November 1998.

Oropeza, M., Fuchs, P.N., Bencherif, B., Li, S.T., Ravert, H., Musachio, J., Mathews, B., Dannals, B., Campbell, J.N., Belzberg, A., and Frost, J.J.: "The effect of capsaicin-induced pain on human brain Mu opioid receptor binding measured by PET," Soc. Neurosci. Abstr., (1998).

Sheth, R.N., Lancelotta, M.P., Meyer, R.A., and Campbell, J.N.: "Behavioral signs of pain in rat are influenced by the technique of axotomy," American Society for Peripheral Nerve Annual Meeting, June 1999.

Campbell, J.N., Ali, Z., Ringkamp, M., Hartke, T.V., Chien, H.F., Flavahan, N.A., and Meyer, R.A.: "Biological rationale for distal therapies for pain," Peripheral Nerve Society meeting, July 1999

Wu, G., Campbell, J.N., and Meyer, R.A.: "Baseline skin temperature does not greatly alter pain ratings to temperature-controlled head stimuli in humans," Society for Neuroscience Annual Meeting, October 1999

Sheth, R.N., Lancelotta, M.P., Meyer, R.A., Belzberg, A., Campbell, J.N.: "Duration and severity of hyperalgesia after nerve root section in rat is worse with cut and ligation compared with crush injury," AANS Annual Meeting, April 2000

Campbell, J.N., and Sheth, R.N.: "Transaxillary resection of the first rib is a better operation for thoracic outlet syndrome (TOS) than supraclavicular neuroplasty of the brachial plexus: Results of a randomized trial," AANS Annual Meeting, April 2000

Anderson, W.S., Sheth, R.N., Bencherif, B., Frost, J.J., and Campbell, J.N.: "Is acute pain modulated by endogenous opioid-mediated inhibition?" Society for Neuroscience Abstract, November 2000

Shir, Y., Anderson, W.S., Sheth, R.N., Raja, S.N., Belzberg, A.J., and Campbell, J.N.: "Soy enriched diets do not suppress hyperalgesia associated with inflammation in rats." Society for Neuroscience Abstract, November 2000

Bencherif, B., Fuchs, P.N., Sheth, R.N., Oropeza, M., Musachio, J.L., Mathews, B., Dannals, R.F., Campbell, J.N., and Frost, J.J.: "Acute pain activation of supraspinal opioid pathways shown with positron emission tomography in humans." Society for Neuroscience Abstract, November 2000

Ringkamp, M., Peng, Y.-B., Wu, G., Campbell, J.N., and Meyer, R.A.: "Nociceptors insensitive to heat may respond vigorously to capsaicin." Society for Neuroscience Abstract, November 2000

Meyer, R.A., Wu, G., Ringkamp, M., and Campbell, J.N.: "Activity-dependent slowing of conduction varies in the terminal arbors of nociceptors in the monkey skin." Society for Neuroscience Abstract, November 2000

Wu, G., Ringkamp, M., Campbell, J.N., and Meyer, R.A.: "The terminal arbor of cutaneous nociceptors in monkey follows high frequency electrical stimuli." Society for Neuroscience Abstract, November 2000

Wu, G., Ringkamp, M., Campbell, J.N., and Meyer, R.A.: "Spontaneous activity develops in C fibers from the L4 dorsal root after a lesion to the L5 spinal nerve in rat." American Pain Society, November 2000

Wu, G., Ringkamp, M., Hartke, T.V., Weerahandi, H.M., Campbell, J.N., Griffin, J.W., and Meyer, R.A.: "Ventral rhizotomy induces spontaneous activity in uninjured C-fiber afferents." Society for Neuroscience Abstract, November 2001

Pogatzki, E.M., Ringkamp, M., Wu, G., Campbell, J.N., and Meyer, R.A.: "Absolute supernormal conduction in mechano-insensitive C-fiber afferents in monkey." IASP 10th World Congress on Pain, August 2002

Chen, L., Dorsi, M.J., Meyer, R.A., Campbell, J.N., and Belzberg, A.J.: "An animal model of neuroma pain." IASP 10th World Congress on Pain, August 2002

Zhao, C.S., Ringkamp, M., Tall, J.M., Hartke, T.V., Jann, A., Chun, L., Meyer, R.A., Campbell, J.N., and Raja, S.N.: "Capsaicin treatment of sciatic and saphenous nerves does not abolish mechanical hyperalgesia after spared nerve injury." Society for Neuroscience Abstract, November 2002

Pogatzki, E.M., Ringkamp, M., Shim, B., Campbell, J.N., and Meyer, R.A.: "Electrophysiological assessment of the cutaneous arborization of C-fiber nociceptors in monkey." Society for Neuroscience Abstract, 2003

Ringkamp, M., Shim, B., Pogatzki, E.M., Campbell, J.N., and Meyer, R.A.: "Unmyelinated peripheral axonal segments of A- and C- mechano-insensitive afferents differ significantly in their conductive properties." Society for Neuroscience Abstract, 2003.

Ringkamp, M., Shim, B., Campbell, J.N., and Meyer, R.A.: "A- and C-fiber mechanoinensitive afferents (MIAS) show different conduction changes during repetitive electrical stimulation." Society for Neuroscience Abstract, 2004

Carmona, C., Kim, Y., Meyer, R.A., Frost, J., and Campbell, J.N.: "Placebo analgesia is associated with activation of opioid pathways in the periaqueductal gray." Society for Neuroscience Abstract, 2006.

BOOKS

Editor, Pain Treatment Centers at a Crossroads: A Practical and Conceptual Reappraisal, Progress in Pain Research & Management, Vol. 7, IASP Press, 1996.

Editor, Pain 1996 – An Updated Review, IASP Press.

Editor, Emerging Strategies for the Treatment of Neuropathic Pain, IASP Press, 2005.

PUBLISHED EDITORIALS, REVIEWS, BOOK CHAPTERS, ETC.

1. Campbell, J.N. and Nadelman, L.: Sex and age differences in target choice on an aggressive task, Development Report Series #13: University of Michigan, Ann Arbor, Michigan, 1972.
2. Campbell, J.N.: Local analgesia from percutaneous electrical stimulation and a peripheral mechanism. A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Medicine, Yale University School of Medicine, 1973.
3. Long, D.M., Campbell, J.N. and Gücer, G.: Transcutaneous electrical stimulation for relief of chronic pain. In: Advances in Pain Research and Therapy. J.J. Bonica, et al (eds). Raven Press, New York, pp. 593-599, 1979.
4. Campbell, J.N. and Long, D.M.: Transcutaneous electrical stimulation for pain: Efficacy and mechanism of action, In: Diagnosis and Treatment of Chronic Pain. Hendler, N., Long, D.M., Wise, T. (eds). John Wright-PSG., Inc., Littleton, Massachusetts, pp. 77-96, 1982.
5. Campbell, J.N.: Causalgia, phantom pain, and related painful syndromes, In: Current Therapy of Neurologic Diseases. R.T. Johnson (ed.). B.C. Decker, Inc., Ontario, Canada, pp. 75-80, 1984.

6. Meyer, R.A., Raja, S.N., and Campbell, J.N.: Communications between peripheral nerve fibers. In: Developments in Science and Technology, Applied Physics Lab, pp. 138-140, 1984.
7. Meyer, R.A., Campbell, J.N. and Raja, S.N.: Peripheral neural mechanisms of cutaneous hyperalgesia. In: Advances in Pain Research and Therapy 9:53-71. H.L. Fields et al (eds.), Raven Press, New York, 1985.
8. Campbell, J.N.: Painful peripheral nerve syndromes, In: Current Therapy in Neurological Surgery. D.M. Long (ed.), B.C. Decker, Inc., Ontario, Canada, pp. 231-235, 1985.
9. Campbell, J.N.: Surgery as an alternative to neural stimulation in failed-back syndrome. In: Proceedings of the Symposium on Current Clinical Perspectives on Neural Stimulation, pp. 54-57, 1986.
10. Campbell, J.N.: Endorphin. In: World Book Encyclopedia, World Book Inc., Chicago, Ill., 1986.
11. Campbell, J.N. and Meyer, R.A.: Primary afferents and hyperalgesia, In: Spinal Afferent Processing. T.L. Yaksh (ed.), The Humana Press, Inc., Clifton, New Jersey, pp. 59-81, 1986.
12. Meyer, R.A., Campbell, J.N., Raja, S.N.: Hyperalgesia following peripheral nerve injury. In: Effects of Injury on Trigeminal and Spinal Somatosensory Systems, 383-388, L. M. Pubols, et al. (eds.), Alan R. Liss, Inc., New York, pp. 383-388, 1987.
13. Campbell, J.N., Raja, S.N., and Meyer, R.A.: Painful sequelae of nerve injury. In: Proceedings of the Vth World Congress on Pain. R. Dubner, et al (eds.), pp. 135-143, 1988.
14. Frost, S.A., Raja, S.N., Campbell, J.N., Meyer, R.A., Khan, A.A.: Does hyperalgesia to cooling stimuli characterize patients with sympathetically maintained pain (reflex sympathetic dystrophy) In: Proceedings of the Vth World Congress on Pain. R. Dubner, et al (ed.), pp. 151-156, 1988.
15. Campbell, J.N.: Ulnar nerve entrapment at the elbow and carpal tunnel syndrome. In: Current Therapy in Neurological Surgery-2, B.C. Decker Inc., pp. 335-338, 1989.
16. Campbell, J.N., Raja, S.N., Cohen, R.H., Manning, D.C., Khan, A.A., and Meyer, R.A.: Peripheral neural mechanisms of nociception, In: Textbook of Pain, 2nd Edition, Wall and Melzack (eds.), Churchill Livingstone, pp. 22-45, 1989.
17. Campbell, J.N.: Pain from peripheral nerve injury, In: Current Therapy of Pain. K. Foley and R. Payne (eds.), B. C. Decker, Inc., Ontario, Canada, pp. 158-169, 1989.
18. Contributor. Towards a New Pharmacotherapy of Pain: Beyond Morphine. Dahlem Konferenzen 1989. A. Basbaum, J.M. Besson, (eds). Chichester: John Wiley & Sons Ltd., 1990.

19. Raja, S.N., Meyer, R.A., and Campbell, J.N.: Hyperalgesia and sensitization of primary afferent fibers. In: Pain Syndromes in Neurologic Practice, Howard C. Field (ed.), Butterworth Publishers, pp. 19-45, 1990.
20. Campbell, J.N. and Meyer, R.A.: Plasticity of the neural events related to pain, In: Information Processing in the Somatosensory System. O. Franzen (ed.), Macmillan Press Ltd, London, pp. 439-451, 1991.
21. Treede, R.-D., Raja, S.N., Davis, K.D., Meyer, R.A., and Campbell, J.N.: Evidence that peripheral alpha-adrenergic receptors mediate sympathetically maintained pain. In: Proceedings of the VIth World Congress on Pain. M.R. Bond, J.E. Charlton and C.J. Woolf (eds.). Elsevier Science Publishers BV, pp. 377-382, 1991.
22. Meyer, R.A., Cohen, R.H., Davis, K.D., Treede, R.-D., and Campbell, J.N.: Evidence for cutaneous afferents that are insensitive to mechanical stimuli. In: Proceedings of the VIth World Congress on Pain. M.R. Bond, J.E. Charlton and C.J. Woolf, (eds.). Elsevier Science Publishers BV, pp. 71-75, 1991.
23. Janig, W., Blumberg, H., Boas, R.A., and Campbell, J.N.: The reflex sympathetic dystrophy syndrome: Consensus statement and general recommendations for diagnosis and clinical research. In: Proceedings of the VIth World Congress on Pain, M.R. Bond, J.E. Charlton & C.F. Woolf (eds.), pp. 373-376, 1991.
24. Meyer, R.A., Campbell, J.N. and Raja, S.N.: The role of nociceptors and low-threshold mechanoreceptors in the pain to light touch observed in sympathetically-maintained pain. In: Lesions of Primary Afferent Fibers as a Tool for the Study of Clinical Pain, J.M. Besson and G. Guilbaud (eds). Elsevier Science Publishers BV, Amsterdam, pp. 307-314, 1991.
25. Campbell, J.N., Raja, S.N., and Meyer, R.A.: How should sympathetically maintained pain be diagnosed: A case study. In: Lesions of Primary Afferent Fibers as a Tool for the Study of Clinical Pain, JM Besson and G Guilbaud (eds). Elsevier Science Publishers BV, Amsterdam, pp. 45-51, 1991.
26. Meyer, R.A., Raja, S.N., Treede, R.-D., Davis, K.D., and Campbell, J.N.: Neural mechanisms of sympathetically maintained pain. In: Symposium Proceedings on Reflex Sympathetic Dystrophy: Pathophysiological Mechanisms and Clinical Implications. W. Janig, R.F. Schmidt (eds.). Verlag Chemie, New York, pp. 57-66, 1992.
27. Campbell, J.N., Meyer, R.A., Davis, K.D. and Raja, S.N.: Sympathetically maintained pain: A unifying hypothesis. In: Hyperalgesia and Allodynia. W.D. Willis, Jr. (ed.), Raven Press, New York, pp. 141-192, 1992.
28. Treede, R.-D., Meyer, R.A., Raja, S.N. and Campbell, J.N.: Peripheral and central mechanisms of cutaneous hyperalgesia. Progress in Neurobiology 38:397-421, 1992.
29. Campbell, J.N.: Diagnosis and treatment of pain associated with nerve injury. In: Practical Approaches to Peripheral Nerve Surgery, E.C. Benzel (ed.), AANS Publications Committee, Park Ridge, IL, pp. 185-195, 1992.

30. Campbell, J.N., Raja, S.N., and Meyer R.A.: Pain and the sympathetic nervous system: Connecting the loop (Chapter 9). In: New Trends in Referred Pain and Hyperalgesia, L. Vecchiet, D. Albe-Fessard, U. Lindblom, and M.A. Giamberardino (Eds), Elsevier Science Publishers B.V., 1993, pp. 99-108.
31. Belzberg, A.J. and Campbell, J.N.: Peripheral nerve injury. In: Current Therapy in Neurologic Disease, 4th edition. R. Johnson and J. Griffin (eds.), B.C. Decker, Mosby Yearbook, 1993, pp. 210-214.
32. Belzberg, A.J. and Campbell, J.N.: Peripheral nerve repair. In: Neurosurgical Operative Atlas, Vol. 3. Williams & Wilkins, 1993, pp. 119-134, 1993.
33. Belzberg, A.J. and Campbell, J.N.: Acute nerve injuries. In: Principles of Neurosurgery, Rengachary & Wilkins (eds), Wolfe Press, 1994.
34. Meyer, R.A., Campbell, J.N. and Raja, S.N.: Peripheral neural mechanisms of nociception. In: Textbook of Pain, 3rd edition, PD Wall and R Melzack (eds.), Churchill Livingstone, London, pp. 13-44, 1994.
35. Campbell, J.N., Raja, S.N., Selig, D.K., Belzberg, A.J., and Meyer, R.A.: Diagnosis and management of sympathetically maintained pain. In: Pharmacological Approaches to the Treatment of Chronic Pain: New Concepts and Critical Issues (Progress in Pain Research and Management, Vol. 1). H.L. Fields and J.C. Liebeskind (eds), IASP Press, Seattle, WA, pp. 85-100, 1994.
36. Campbell, J.N., Raja, S.N., Belzberg, A.J. and Meyer, R.A.: Hyperalgesia and the sympathetic nervous system, In: Touch, Temperature and Pain in Health and Disease, Progress in Pain Research and Management, Vol. 3, J. Boivie, P. Hansson and U. Lindblom (eds.), IASP Press, pp. 249-265, 1994.
37. Cervero, F., Meyer, R.A., and Campbell, J.N.: Evidence that secondary hyperalgesia involves increased pain to input from nociceptors. In: Advances in Pain Research and Therapy, Vol. 22, Pain and the Brain. From Nociception to Cognition, B. Bromm (ed.), Raven Press, New York, pp. 357-366, 1995.
38. Wesselmann, U., Raja, S.N., and Campbell, J.N.: Sympathetically maintained pain. In: The Autonomic Nervous System. Physical Medicine and Rehabilitation: State of the Art Reviews. R.W. Teasell (ed.), Hanley & Belfus, Inc., Philadelphia, PA, pp. 137-151, 1996.
39. Campbell, J.N.: Pain Treatment Centers: A surgeon's perspective. In: Pain Treatment Centers at a Crossroads: A Practical and Conceptual Reappraisal, Progress in Pain Research & Management, Vol. 7, M.J. Cohen & J.N. Campbell (eds), IASP Press, Seattle, pp. 29-37, 1996.
40. Campbell, J.N.: A consensus panel looks at TMD. Cranio 14:173-174, 1996.
41. Campbell, J.N.: Diseases of the spine and spinal cord. In: The Principles and Practice of Medicine, 23rd edition. Stobo, J.D., Hellmann, D.B., Ladenson, P.W., Petty, B.G., and

- Traill, T.A. (eds.), Appleton & Lange, pp. 871-880, 1996.
42. Campbell, J.N. and Meyer, R.A.: Cutaneous nociceptors. In: Neurobiology of Nociceptors, Belmonte & Cervero (eds.), Oxford University Press, Oxford, pp. 117-145, 1996.
 43. Meyer, R.A., Raja, S.N., and Campbell, J.N.: Neural mechanisms of primary hyperalgesia. In: Neurobiology of Nociceptors, Belmonte & Cervero (eds.), Oxford University Press, Oxford, pp. 370-389, 1996.
 44. Campbell, J.N.: Complex regional pain syndrome and the sympathetic nervous system. In: Pain 1996-An updated Review: Refresher Course Syllabus. Campbell, J.N. (ed), Seattle, IASP Press, pp. 89-96, 1996.
 45. Campbell, J.N.: Thoracic outlet syndrome (Chapter 64). In: The Adult Spine: Principles and Practice, 2nd edition, Drs. Frymoyer, Ducker, Hadler, Kostuik, Weinstein and Whitecloud (eds.), Lippincott-Raven Publishers, pp. 1349-1355, 1997.
 46. Pappagallo, M. and Campbell, J.N.: The pharmacologic management of chronic back pain (Chapter 18). In: The Adult Spine: Principles and Practice, 2nd edition, Drs. Frymoyer, Ducker, Hadler, Kostuik, Weinstein and Whitecloud (eds.), Lippincott-Raven Press, Philadelphia, pp. 275-285, 1997.
 47. Campbell, J.N.: Peripheral nerve injury and sympathetically maintained pain: Mechanisms and surgical approach. In: The Neurosurgical Management of Pain, R. North, R. Levy (eds.), Springer-Verlag, Inc., New York, pp. 75-82, 1997.
 48. Belzberg, A.J. and Campbell, J.N.: Neoplasms of peripheral nerves. In: Neurosurgery, 2nd edition, R.H. Wilkins & S.S. Rengachary (eds.), McGraw-Hill, pp. 3217-3223, 1996.
 49. Silvers, J. and Campbell, J.N.: Neurostimulatory and neuroablative procedures, In: Pain Management Secrets, R. Kanner (ed), Hanley & Belfus, Inc., Philadelphia, pp. 216-219, 1997.
 50. Raja, S.N., Meyer, R.A., Campbell, J.N.: Transduction properties of sensory afferent fibers. In: Anesthesia: Biologic Foundation, J. Biebuyck, C. Lynch, M. Made, L. Saidman, T.L. Yaksh, Zabol (eds.), Lippincott-Raven Publishers, Philadelphia, pp. 515-530, 1997.
 51. Pappagallo, M., and Campbell, J.N.: The medical treatment of chronic back pain: The role of opioid therapy and the use of non-opioid analgesics. In: Spine: State of the Art Reviews, Kostuik, J.P. (ed), Hanley & Belfus, Inc., pp. 559-571, 1997.
 52. Silvers, J., Campbell, J.N. and North, R.B.: Neurosurgical modalities for pain management, In: The Management of Pain, M.A. Ashburn and L.J. Rice (eds), Churchill Livingstone, New York, pp. 519-525, 1998.
 53. Bencherif, B., Oropeza, M., Fuchs, P.N., Sheth, R., Li, S.T., Ravert, H., Musachio, J., Mathews, B., Dannals, B., Campbell, J.N., and Frost, J.J.: Regional mu opioid receptor binding changes in healthy controls following capsaicin-induced pain and their

- relationships to pain intensity. J Cerebral Blood Flow & Mechanism 19:S317, 1999.
54. Raja, S.N., Meyer, R.A., Ringkamp, M., and Campbell, J.N.: Peripheral neural mechanisms of nociception. In: Textbook of Pain, 4th edition, P. D. Wall, R. Melzack (eds.), Churchill Livingstone, London, pp. 11-57, 1999.
 55. Shir, Y., Campbell, J.N., Raja, S.N., and Zeltzer, S.: Pre- but not postoperative consumption of soy suppresses pain behavior following partial sciatic ligation in rats. In: Proceedings of the 9th World Congress on Pain, Progress in Pain Research and Management, M. Devor, M.C. Rowbotham and Z. Wiesenfeld-Hallin (eds.), IASP Press, Seattle, pp. 477-483, 2000.
 56. Patil, P.G. and Campbell, J.N.: Lesions of primary afferents and sympathetic efferents as treatments for pain. In: Management of Pain, 3rd edition, Chapter 105, J.D. Loeser, C.R. Chapman and W.E. Fordyce (eds.), Lea & Febiger, Philadelphia, p. 2011-2022, 2000.
 57. Silvers, J. and Campbell, J.N.: Neurostimulatory and neuroablative procedures, In: Pain Management Secrets, 2nd edition, R. Kanner (ed), Hanley & Belfus, Inc., Philadelphia, pp. 262-265, 2002.
 58. Campbell, J.N and Sciubba, D.: Neurosurgical approaches to the treatment of pain, In: The Neurologic Basis of Pain, Chapter 44, M Pappagallo (ed), McGraw-Hill Publishing, New York, pp. 631-639, 2004.
 59. Campbell, J.N. and Meyer, R.A.: Neuropathic Pain: From the nociceptor to the patient, In: The Paths of Pain 1975-2005, H. Merskey, J.D. Loeser and R. Dubner (eds), IASP Press, Seattle, pp. 229-242, 2005.
 60. Meyer, R.A., Ringkamp, M., Campbell, J.N., and Raja, S.N.: Neural mechanisms of hyperalgesia after tissue injury. Johns Hopkins APL Tech Digest 26:56-66, 2005.
 61. Meyer, R.A., Ringkamp, M., Campbell, J.N., and Raja, S.N.: Peripheral mechanisms of cutaneous nociception (Chapter 1), In: Wall and Melzack's Textbook of Pain, 5th edition, S. McMahon and M. Koltzenburg (eds), Elsevier, UK, pp. 3-34, 2005.
 62. Patil, P.G. and Campbell, J.N.: Peripheral and central nervous system surgery for pain (Chapter 39), In: Wall and Melzack's Textbook of Pain, 5th edition, S. McMahon and M. Koltzenburg (eds), Elsevier, UK, pp. 591-601, 2005.
 63. Basbaum, A.I., Bushnell, M.C., Campbell, J.N., Chaplan, S.R., Mantyh, P.W., Porreca, F., Price, D.D., Urban, L., Vierck, C.J., and Zubieta, J.-K.: Measurement and new technologies: Rapporteur report, In: Emerging Strategies for the Treatment of Neuropathic Pain, J.N. Campbell, A.I. Basbaum, A. Dray, R. Dubner, R.H. Dworkin, and C.N. Sang (eds), IASP Press, Seattle, pp. 361-381, 2005.
 64. Schwartz, J. and Campbell, J.N.: Peripheral nerve surgery, In: Evidence Based Neurosurgery, S. Haines, B. Walters and J. Nicholas (eds), Thieme Publishers, pp. 205-226, 2006.

PEER REVIEWED PUBLICATIONS

1. Campbell, J.N. and Taub, A.: Local analgesia from percutaneous electrical stimulation: A peripheral mechanism, Arch Neurol 28: 347-350, 1973.
2. Taub, A. and Campbell, J.N.: Percutaneous local electrical analgesia: Peripheral mechanism, In Advances in Neurology 4, International Symposium on Pain, Editor, J.J. Bonica, Raven Press, New York, 1974.
3. Campbell, J.N. and Long, D.: Peripheral nerve stimulation in the treatment of intractable pain, J Neurosurg 45: 692-699, 1976.
4. Campbell, J.N., Black, P. and Ostrow, P.T.: Sarcoid of the cauda equina, J Neurosurg 47: 109-112, 1977.
5. LaMotte, R.H. and Campbell, J.N.: Comparison of responses of warm and nociceptive C-fiber afferents in monkey with human judgments of thermal pain, J Neurophysiol 41: 509-528, 1978.
6. Campbell, J.N., Meyer, R.A., and LaMotte, R.H.: Sensitization of myelinated nociceptive afferents that innervate monkey hand, J Neurophysiol 42: 1669-1679, 1979.
7. Campbell, J.N.: Examination of possible mechanisms by which stimulation of the spinal cord in man relieves pain, Appl Neurophysiol 44: 181-186, 1981.
8. Meyer, R.A. and Campbell, J.N.: Myelinated nociceptive afferents account for the hyperalgesia that follows a burn to the hand. Science 213: 1527-1529, 1981.
9. Meyer, R.A., Campbell, J.N.: Peripheral neural coding of pain sensation, Johns Hopkins APL Technical Digest 2: 164-171, 1981.
10. Meyer, R.A., Campbell, J.N.: Evidence for two distinct classes of unmyelinated nociceptive afferents in monkey. Brain Research 224: 149-152, 1981.
11. Long, D.M., Erickson, D., Campbell, J.N., and North, R.: Electrical stimulation of the spinal cord and peripheral nerves for pain control, Appl Neurophysiol 44: 207-217, New York, 1981.
12. Toung, T.J.K., Donham, R.T., Campbell, J.N.: Prevention of tension pneumocephalus. Anesthesiology 57:65-66, 1982.
13. Campbell, J.N. and Meyer, R.A.: Sensitization of unmyelinated nociceptive afferents in monkey varies with skin type. J Neurophysiol 49:98-110, 1983.
14. Toung, T., Donham, R.T., Lehner, A., Alano, J. and Campbell, J.N.: Tension pneumocephalus after posterior fossa craniotomy: Report of four additional cases and review of postoperative pneumocephalus, Neurosurg 12:164-168, 1983.
15. Campbell, J.N. and LaMotte, R.H.: Latency to detection of first pain. Brain Research 266:203-208, 1983.

16. Freeman, T.B., Campbell, J.N. and Long, D.M.: Naloxone does not affect pain relief induced by electrical stimulation in man. Pain 17:189-195, 1983.
17. Davis, R.J., North, R.B., Campbell, J.N., Suss, R.A.: Multiple cerebral hemorrhages following chymopapain chemonucleolysis: Case report. J Neurosurg 61:169-171, 1984.
18. Campbell, J.N., Raja, S.N. and Meyer, R.A.: Halothane sensitizes cutaneous nociceptors in monkey. J Neurophysiol 52:762-770, 1984.
19. Raja, S.N., Campbell, J.N. and Meyer, R.A.: Evidence for different mechanisms of primary and secondary hyperalgesia following heat injury to the glabrous skin. Brain 107: 1179-1188, 1984.
20. Meyer, R.A., Raja, S.N., Campbell, J.N., Mackinnon, S.E. and Dellon, A.L.: Neural activity originating from a neuroma in the baboon. Brain Research 325: 255-260, 1985.
21. Meyer, R.A., Raja, S.N., Campbell, J.N.: Coupling of action potential activity between unmyelinated fibers in the peripheral nerve of monkey. Science 227:184-187, 1985.
22. Raja, S.N., Meyer, R.A., Campbell, J.N. and Khan, A.A.: Narcotics do not alter the heat response of unmyelinated primary afferents in monkeys. Anesthesiol 65:468-473, 1986.
23. Meyer, R.A. and Campbell, J.N.: Coupling between unmyelinated peripheral nerve fibers does not involve sympathetic efferent fibers. Brain Research 437:181-182, 1987.
24. Campbell, J.N., Solomon, C.T., James, C.S.: The Hopkins experience with lesions of the dorsal horn (Nashold's Operation) for pain from avulsion of the brachial plexus. App| Neurophysiol 51:170-174, 1988.
25. Raja, S.N., Meyer, R.A., and Campbell, J.N.: Peripheral mechanisms of somatic pain. Anesthesiology 68:571-590, 1988.
26. Campbell, J.N., Raja, S.N., Meyer, R.A., and Mackinnon, S.E.: Myelinated afferents signal the hyperalgesia associated with nerve injury. Pain 32:89-94, 1988.
27. Meyer, R.A., Campbell, J.N., and Raja, S.N.: Antidromic nerve stimulation in monkey does not sensitize unmyelinated nociceptors to heat. Brain Research 441:168-172, 1988.
28. Meyer, R.A. and Campbell, J.N.: A novel electrophysiological technique for locating cutaneous nociceptive and chemospecific receptors. Brain Research 441:81-86, 1988.
29. Campbell, J.N., Khan, A.A., Meyer, R.A., and Raja, S.N.: Responses to heat of C-fiber nociceptors in monkey are altered by injury in the receptive field but not by adjacent injury. Pain 32: 327-332, 1988.
30. Merle, M., Dellon, A.L., Campbell, J.N., Chang, P.S.: Complications from silicon-polymer intubulation of nerves. Microsurgery 10:130-133, 1989.

31. Dellon, A.L., Campbell, J.N., Cornblath, D.: Stretch palsy of the spinal accessory nerve: Case report. J Neurosurg 72:500-502, 1990.
32. Treede, R.-D., Meyer, R.A., Campbell, J.N.: Comparison of heat and mechanical receptive fields of cutaneous C-fiber nociceptors in monkey. J Neurophysiol 64:1502-1513, 1990.
33. Treede, R.-D., Meyer, R.A., Davis, K.D., and Campbell, J.N.: Intradermal injections of bradykinin or histamine cause a flare-like vasodilatation in monkey. Evidence from laser-doppler studies. Neuroscience Letters 115:201-206, 1990.
34. Griffin, J.W., Cornblath, D.R., Alexander, E., Campbell, J., Low, P.A., Bird, S., and Feldman, E.L.: Ataxic sensory neuropathy and dorsal root ganglionitis associated with Sjogren's syndrome. Ann Neurol 27:304-315, 1990.
35. Koschorke, G.M., Meyer, R.A., Tillman, D.B., and Campbell, J.N.: Ectopic excitability of injured nerves in monkey: Entrained responses to vibratory stimuli. J Neurophysiol 65:693-701, 1991.
36. Raja, S.N., Treede, R.-D., Davis, K.D., and Campbell, J.N.: Systemic alpha-adrenergic blockade with phentolamine: A diagnostic test for sympathetically maintained pain. Anesthesiology 74:691-698, 1991.
37. Campbell, J.N., Naff, N.J., and Dellon, A.L.: Thoracic outlet syndrome. Neurosurgical Perspective. Neurosurg Clin North America 2:227-233, 1991.
38. North, R.B., Kidd, D.H., Campbell, J.N., and Long, D.M.: Dorsal root ganglionectomy for failed back surgery syndrome: a 5-year follow-up study. J Neurosurg 74:236-242, 1991.
39. Francel, T.J., Dellon, A.L., and Campbell, J.N.: Quadrilateral space syndrome: Diagnosis and operative decompression technique. Plastic Reconstruct Surg 87:911-916, 1991.
40. Manning, D.C., Raja, S.N., Meyer, R.A. and Campbell, J.N.: Pain and hyperalgesia after intradermal injection of bradykinin in humans. Clin Pharmacol Ther 50:721-729, 1991.
41. Meyer, R.A., Davis, K.D., Cohen, R.H., Treede, R.-D. and Campbell, J.N.: Mechanically insensitive afferents (MIAs) in cutaneous nerves of monkey. Brain Research 561:252-261, 1991.
42. Meyer, R.A., Koschorke, G.M., Tillman, D.B., and Campbell, J.N.: Neural mechanisms of abnormal sensations after nerve injury, APL Tech Dig 12:129-136, 1991.
43. Fishman, E.K., Campbell, J.N., Kuhlman, J.E., Kawashima, A., Ney, D.R., and Friedman, N.B.: Multiplanar CT evaluation of brachial plexopathy in breast cancer. J Computer Assisted Tomography 15:790-795, 1991.
44. Davis, K.D., Treede, R.-D., Raja, S.N., Meyer, R.A., and Campbell, J.N.: Topical application of clonidine relieves hyperalgesia in patients with sympathetically-maintained pain. Pain 47:309-317, 1991.

45. Raja, S.N., Campbell, J.N., Meyer, R.A., Colman, R.W.: Role of kinins in pain and hyperalgesia: Psychophysical studies in a patient with kininogen deficiency. Clin Sci 83:337-341, 1992.
46. Treede, R.-D., Davis, K.D., Campbell, J.N. and Raja, S.N.: The plasticity of cutaneous hyperalgesia during sympathetic ganglion blockade in patients with neuropathic pain. Brain 115:607-621, 1992.
47. Raja, S.N., Davis, K.D., Campbell, J.N.: The adrenergic pharmacology of sympathetically-maintained pain. J Reconstructive Microsurg 8:63-69, 1992.
48. Campbell, J.N., Meyer, R.A., and Raja, S.N.: Is nociceptor activation by alpha-1 adrenergic receptors the culprit in sympathetically maintained pain? Am Pain Society J 1:3-11, 1992.
49. Khan, A.A., Raja, S.N., Manning, D.C., Campbell, J.N., and Meyer, R.A.: The effects of bradykinin and sequence-related analogs on the response properties of cutaneous nociceptors in monkey. Somatosensory and Motor Research 9:97-106, 1992.
50. Meyer, R.A., Treede, R.-D., Raja, S.N., and Campbell, J.N.: Peripheral versus central mechanisms for secondary hyperalgesia: Is the controversy resolved? Am Pain Society J 1:127-131, 1992.
51. Meyer, R.A., Davis, K.D., Raja, S.N., and Campbell, J.N.: Sympathectomy does not abolish bradykinin-induced hyperalgesia in man. Pain 51:323-327, 1992.
52. Davis, K.D., Meyer, R.A., and Campbell, J.N.: Chemosensitivity and sensitization of nociceptive afferents that innervate the hairy skin of monkey. J Neurophysiology 69:1071-1081, 1993.
53. Campbell, J.N.: Cervical Spondylosis. Current Opinion in Orthopedics 4:49-53, 1993.
54. Scott, W.W. Jr., Hruban, R.H., Campbell, J.N., Fishman, E.K.: Angioleiomyoma involving the sciatic nerve--CT demonstration. Case report. Clin Imaging 17:260-262, 1993.
55. Cervero, F., Meyer, R.A., and Campbell, J.N.: A psychophysical study of secondary hyperalgesia: Evidence for increased pain to input from nociceptors. Pain 58:21-28, 1994.
56. Koschorke, G.-M., Meyer, R.A., and Campbell, J.N.: Cellular components necessary for mechano-electrical transduction are conveyed to primary afferent terminals by fast axonal transport Brain Research 641:99-104, 1994.
57. Pappagallo, M. and Campbell, J.N.: Chronic opioid therapy as alternate treatment for post-herpetic neuralgia. Annals of Neurology 35 (Suppl):54-56, 1994.
58. Campbell, J.N. and Belzberg, A.J.: Use of disk distension to diagnose pain of spinal origin. American Pain Society Journal 3:157-159, 1994.

59. Pappagallo, M., Raja, S.N., Haythornthwaite, J.A., Clark, M., and Campbell, J.N.: Oral opioids in the management of postherpetic neuralgia: A prospective study. Analgesia 1:51-55, 1994.
60. Campbell, J.: Sympathetically maintained pain. J Japan Society Pain Clinicians 1:381-390, 1994.
61. Campbell, J.N. and Raja, S.N.: Reflex sympathetic dystrophy. Neurology 45:1235-1236, 1995.
62. Treede, R.-D., Meyer, R.A., Raja, S.N., and Campbell, J.N.: Evidence for two different heat transduction mechanisms in nociceptive primary afferents innervating monkey skin. J Physiol 483:747-758, 1995.
63. Davis, K.D., Meyer, R.A., Turnquist, J.L., Filloon, T.G., Pappagallo, M., and Campbell, J.N.: Cutaneous pretreatment with the capsaicin analog, NE-21610, prevents the pain to a burn and subsequent hyperalgesia. Pain 62:373-378, 1995.
64. Davis, K.D., Meyer, R.A., Turnquist, J.L., Filloon, T.G., Pappagallo, M., and Campbell, J.N.: Cutaneous injection of the capsaicin analog, NE-21610, produces analgesia to heat but not to mechanical stimuli in man. Pain 61:17-26, 1995.
65. Tillman, D.-B., Treede, R.-D., Meyer, R.A., and Campbell, J.N.: Response of C fibre nociceptors in the anaesthetized monkey to heat stimuli: Estimates of receptor depth and threshold. J Physiol 485.3:753-765, 1995.
66. Tillman, D.-B., Treede, R.-D., Meyer, R.A., and Campbell, J.N.: Responses of C fibre nociceptors in the anaesthetized monkey to heat stimuli: Correlation with pain threshold in humans. J Physiol 485.3:767-774, 1995.
67. Schneider, W., Slugg, R.M., Turnquist, B.P., Meyer, R.A., and Campbell, J.N.: An electromechanical stimulator system for neurophysiological and psychophysical studies of pain. J Neurosci Methods 60:61-68, 1995.
68. Sampath, P., Yeo, C.J., and Campbell, J.N.: Nerve injury associated with laparoscopic inguinal herniorrhaphy. Surgery 118:829-833, 1995.
69. Raja, S.N., Turnquist, J.L., Meleka, S., and Campbell, J.N.: Monitoring adequacy of alpha-adrenoceptor blockade following systemic phentolamine administration. Pain 64:197-204, 1996.
70. Campbell, J.N.: The incongruent relation between noxious and painful stimuli. Pain Forum 5:165-166, 1996.
71. Ali, Z., Meyer, R.A., and Campbell, J.N.: Secondary hyperalgesia to mechanical but not heat stimuli following a capsaicin injection in hairy skin. Pain 68:401-411, 1996.
72. Campbell, J.: APS 1995 Presidential Address. Pain Forum 5:85-88, 1996.

73. Campbell, J.N.: The medical model and low back pain. Pain Forum 6:243-244, 1997.
74. Shir, Y., Ratner, A., Raja, S.N., Campbell, J.N., and Seltzer, Z.: Neuropathic pain following partial nerve injury in rats is suppressed by dietary soy. Neurosci Lett 240:73-76, 1998.
75. Robbins, W.R., Staats, P.S., Levine, J., Fields, H.L., Allen, R.W., Campbell, J.N., and Pappagallo, M.: Treatment of intractable pain with topical large-dose capsaicin: Preliminary report. Anesthesia & Analgesia 86:579-583, 1998.
76. Treede, R.-D., Meyer, R.A., and Campbell, J.N.: Myelinated mechanically-insensitive afferents from monkey hairy skin: Heat response properties. J Neurophys 80:1082-1093, 1998.
77. Belzberg, A.J. and Campbell, J.N.: Evidence for end-to-side sensory nerve regeneration in a human. Case report. J Neurosurg 89:1055-1057, 1998.
78. Ali, Z., Ringkamp, M., Hartke, T.V., Chien, H.F., Flavahan, N.A., Campbell, J.N. and Meyer, R.A.: Uninjured C-fiber nociceptors develop spontaneous activity and alpha-adrenergic sensitivity following L6 spinal nerve ligation in the monkey. J Neurophys 81:455-466, 1999.
79. Peng, Y.N., Ringkamp, M., Campbell, J.N., and Meyer, R.A.: Electrophysiological assessment of the cutaneous arborization of A-fiber nociceptors. J Neurophysiol 82:1164-1177, 1999.
80. Fuchs, P.N., Campbell, J.N., and Meyer, R.A.: Secondary hyperalgesia persists in capsaicin desensitized skin. Pain 84:141-149, 2000.
81. Slugg, R.M., Meyer, R.A., and Campbell, J.N.: Response of cutaneous A- and C-fiber nociceptors in the monkey to controlled force stimuli. J Neurophysiol 83:2179-2191, 2000.
82. Huang, J.H., Ali, Z., Trivison, T.G., Campbell, J.N., and Meyer, R.A.: Spatial mapping of the zone of secondary hyperalgesia reveals a gradual decline of pain with distance but not sharp borders. Pain 86:33-42, 2000.
83. Ali, Z., Raja, S.N., Wesselmann, U., Fuchs, P., Meyer, R.A., and Campbell, J.N.: Intradermal injection of norepinephrine evokes pain in patients with sympathetically maintained pain. Pain 88:161-168, 2000.
84. Raja, S.N. and Campbell, J.N.: Risk-benefit ratio for surgical sympathectomy: Dilemmas in clinical decision making. Commentary on: Furlan, A., et al.: Are we paying a high price for surgical sympathectomy: A systematic literature review of late complications. J of Pain 1(4):261-264, 2000.
85. Wu, G., Campbell, J.N., and Meyer, R.A.: Effects of baseline skin temperature on pain ratings to suprathreshold temperature-controlled stimuli. Pain 90:151-156, 2001.

86. Wu, G., Ringkamp, M., Hartke, T.V., Murinson, B.B., Campbell, J.N., Griffin, J.W., and Meyer, R.A.: Early onset of spontaneous activity in uninjured C-fiber nociceptors after injury to neighboring nerve fibers. J Neurosci 21:RC140 (1-5), 2001.
87. Ringkamp, M., Peng, Y.B., Wu, G., Hartke, T.V., Campbell, J.N., Meyer, R.A.: Capsaicin responses in heat-sensitive and heat-insensitive A-fiber nociceptors. J Neurosci 21:4460-4468, 2001.
88. Campbell, J.N.: Nerve lesions and the generation of pain. Muscle and Nerve 24:1261-1273, 2001.
89. Shir, Y., Sheth, R., Campbell, J.N., Raja, S.N., Seltzer, Z.: Soy-containing diet suppresses chronic neuropathic sensory disorders in rats. Anesth Analg 92:1029-1034, 2001.
90. Solomon, S.B., Semih Dogan, A., Nicol, T.J., Campbell, J.N., Pomper, M.G.: Positron emission tomography in the detection and management of sarcomatous transformation in neurofibromatosis. Clin Nucl Med 26:525-528, 2001.
91. Apfel, S.C., Asbury, A.K., Bril, V., Burns, T.M., Campbell, J.N., Chalk, C.H., Dyck, P.J., Feldman, E.L., Fields, H.J., Grant, I.A., Griffin, J.W., Klein, C.J., Lindblom, U., Litchy, W.J., Low, P.A., Melanson, M., Mendell, J.R., Merren, M.D., O'Brien, P.C., Rendell, M., Rizza, R.A., Service, F.J., Thomas, P.K., Walk, D., Wang, A.K., Wessel, J., Windebank, A.J., Ziegler, D., Zochodne, D.W.: Positive neuropathic sensory symptoms as endpoints in diabetic neuropathy trials. J Neurol Sci 189:3-5, 2001.
92. Shir, Y., Raja, S.N., Weissman, C.S., Campbell, J.N., Seltzer, Z.: Consumption of soy diet before nerve injury preempts the development of neuropathic pain in rats. Anesthesiology 95:1238-1244, 2001.
93. Shir, Y., Campbell, J.N., Raja, S.N., Seltzer, Z.: The correlation between dietary soy phytoestrogens and neuropathic pain behavior in rats after partial denervation. Anesth Analg 94:421-426, 2002.
94. Wu, G., Ringkamp, M., Murinson, B.B., Hartke, T.V., Weerahandi, H.M., Campbell, J.N., Griffin, J.W., and Meyer, R.A.: Degeneration of myelinated efferent fibers induces spontaneous activity in uninjured C-fiber afferents. J Neurosci 22:7746-7753, 2002.
95. Bencherif, B., Fuchs, P.N., Sheth, R., Dannals, R.F., Campbell, J.N., and Frost, J.J.: Pain activation of human supraspinal opioid pathways as demonstrated by [¹¹C] carfentanil and positron emission tomography (PET). Pain 99:589-598, 2002.
96. Anderson, W.S., Sheth, R.N., Bencherif, B., Frost, J.J. and Campbell, J.N.: Naloxone increases pain induced by topical capsaicin in healthy human volunteers. Pain 99:207-216, 2002.
97. Anderson, W.S., Sheth, R.N., Bencherif, B., Frost, J.J. and Campbell, J.N.: Naloxone increases pain induced by topical capsaicin in healthy human volunteers. Pain 99:207-216, 2002.

98. Peng Y.B., Ringkamp M., Meyer, R.A., and Campbell, J.N.: Fatigue and paradoxical enhancement of heat response in C-fiber nociceptors from cross-modal excitation. J Neurosci 23:4766-4774, 2003.
99. Lancelotta, M.P., Sheth, R.N., Meyer, R.A., Belzberg, A.J., Griffin, J.W., and Campbell, J.N.: Severity and duration of hyperalgesia in rat varies with type of nerve lesion. Neurosurgery 53:1200-1209, 2003.
100. Slugg, R.M., Campbell, J.N., and Meyer, R.A.: The population response of A- and C-fiber nociceptors in monkey encodes high intensity mechanical stimuli. J Neurosci 24:4649-4656, 2004.
101. Chou, D., Storm, P.B., Campbell, J.N.: Vulnerability of the subcostal nerve to injury during bone graft harvesting from the iliac crest. J Neurosurg: Spine 1:87-89, 2004.
102. Gallia, G.L., Weiss, N., Campbell, J.N., McCarthy, E.F., Tufaro, A.P., and Gokaslan, Z.L.: Vertebral synovial chondromatosis. Report of two cases and review of the literature. J Neurosurg: Spine 1:211-218, 2004.
103. Sheth, R.N. and Campbell, J.N.: Surgical treatment of thoracic outlet syndrome: a randomized trial comparing two operations. J Neurosurg: Spine 3:355-363, 2005.
104. Campbell, J.N. and Meyer, R.A.: Mechanisms of neuropathic pain. Neuron 52:77-92, 2006.