Date of Document: March 28, 2024

CURRICULUM VITAE

Quinn H. Hogan MD

Professor
Department of Anesthesiology
Division of Research

OFFICE ADDRESS:
Medical Education Building
8701 Watertown Plank Rd
Milwaukee, WI 53226

EDUCATION:

09/1970 - 06/1974 B.S., Stanford University, Stanford, CA
09/1974 - 06/1978 M.D., Harvard Medical School, Boston, MA

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

06/1978 - 06/1979 Internship, General Surgery, Barnes Hospital, St. Louis, MO
06/1979 - 06/1980 Residency, Otorhinolaryngology, Washington University, St. Louis, MO
01/1981 - 12/1982 Residency, Anesthesiology, Harvard Medical School, Brigham and Woman's Hospital, Boston, MA
07/1989 - 06/1990 Fellowship, Pain Management, Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
11/2000 - 04/2001 Faculty Leadership Development Program, Medical College of Wisconsin, Milwaukee, WI

MILITARY SERVICE:

NA

FACULTY APPOINTMENTS:

07/1989 - 06/1990 Instructor, Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
07/1990 - 07/1994 Assistant Professor, Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
07/1994 - 09/2001 Associate Professor, Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
10/2001 - Present Professor, Anesthesiology, Research, Medical College of Wisconsin, Milwaukee, WI
07/2002 - Present Award of Tenure, Anesthesiology, Research, Medical College of Wisconsin, Milwaukee, WI

ADMINISTRATIVE APPOINTMENTS:

09/1991 - 07/1993 Assistant Director, Pain Management Center, Froedtert Memorial Lutheran Hospital, Milwaukee, WI
07/1993 - 07/1997 Director, Pain Management Center, Froedtert Memorial Lutheran Hospital, Milwaukee, WI
11/1998 - 02/2001 Director, Pain Clinic, Zablocki Veterans Hospital, Milwaukee, WI
12/2002 - Present Director, Anesthesia Pain Research, Medical College of Wisconsin, Milwaukee, WI
05/2005 - Present Chair, Rank and Tenure Committee, Medical College of Wisconsin, Milwaukee, WI
2008 - 2011 Director, Department Visiting Professor Program, Medical College of Wisconsin, Milwaukee, WI
02/2017 - Present Vice Chair, Anesthesiology, Research, Medical College of Wisconsin, Milwaukee, WI

EDUCATIONAL ADMINISTRATIVE APPOINTMENTS:

06/1993 - 11/1998 Director, Fellowship in Pain Management, Anesthesiology, Medical College of Wisconsin, Milwaukee, WI

HOSPITAL STAFF PRIVILEGES:

01/1983 - 06/1988 Anesthesia Private Practice, Odessa Medical College Center, Odessa, TX
07/1988 - 06/1989 Anesthesia Private Practice, Baptist Medical Center, Louisville, KY
07/1989 - Present zablocki Veterans Hospital, Milwaukee, WI
07/1989 - 06/2015 Froedtert Memorial Lutheran Hospital, Milwaukee, WI

SPECIALTY BOARDS AND CERTIFICATION:

Board Certified	Issue Date	Expiration
American Board of Anesthesiology	1984	None
American Board of Anesthesiology		None

Certificates	Issued By	Issue Date	Expiration
Added Qualifications in Pain Management		1994	None
ACLS	AHA	10/1998	None
Recertification	2004		None

Licensure	Number	Issue Date	Expiration
Wisconsin License	30575-020	07/26/1989	None

AWARDS AND HONORS:

1970 - Present National Merit Scholar
1973 - Present Phi Beta Kappa
1992 - Present Anesthesiology Department Resident Teaching Award, Medical College of Wisconsin
2002 - Present Innovations in Education Award, Education Affairs Committee, Medical College of Wisconsin
2008 - Present Anesthesiology Department 3rd year Medical Student Teaching Award, Medical College of Wisconsin
2009 - Present Gaston Labat Award, American Society of Regional Anesthesia
2009 - Present Leroy Vandam Lectureship, Brigham and Women's Hospital
2013 - Present Frederik Ruysch Lectureship, University of Amsterdam

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

1981 - Present American Society of Anesthesiologists
1982 - Present American Society of Regional Anesthesia
1983 - Present International Anesthesia Research Society
1990 - Present Milwaukee Society of Anesthesiology
1990 - Present Wisconsin Society of Anesthesiology
1992 - Present American Pain Society
1997 - Present Association of University Anesthesiologists (elected)
1998 - Present Society for Neuroscience
2006 - Present Academy of Research Mentors in Anesthesiology (elected)
2019 - Present Society for Research Excellence of Medical College of Wisconsin

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorship

1994 - 1997 Regional Anesthesia and Pain Medicine, Associate Editor
1996 - 2003 Anesthesiology, Associate Editor
1997 - 2007 Regional Anesthesia and Pain Medicine, Editor (not EIC)
2008 - 2012 Anesthesia and Analgesia, Section Editor (Pain Mechanisms)
2010 - 2016 Anesthesiology, Associate Editor

Journal Review

Croatian Med J
Experimental Neurology

J Neuroimmunology
J Neurophysiology
J Neuroscience
J Neuroscience Methods
J Pharmacology Experimental Therapeutics
J Physiology
Molecular Pain
Neurorehabilitation and Neural Repair
Annals of Neurology
Brain
Brain Research
European J Pain
J Neuroscience Research
Journal of Pain
Neuroscience
Neuroscience Letters
NeuroSignals
PlosOne
Regional Anesthesia and Pain Medicine
Cellular and Molecular Neuobiology
Archives of Pharmacology
Journal of Physiology
Sciences Reports
British Journal of Anesthesia
Pain

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

1993 - 1996 Research, American Society of Regional Anesthesia
1994 - 1997 Scientific Paper, American Society of Anesthesiology
1995 - 1997 Local Anesthesia and Pain, American Society of Anesthesiology
1995 - 1996 Pain Management, American Society of Anesthesiology
1998 - 2002 Education, American Society of Regional Anesthesia
1999 - 2002 Chair, Electronic Media, American Society of Regional Anesthesia
2004 - 2010 Research, American Society of Regional Anesthesia
02/2006 - 2011 Somatosensory and Chemosensory Systems Study Section, National Institutes of Health
09/2006 - 2011 Rehabilitation Research and Development: Pain Study Section, Career Development Study Section, Veterans Administration
2006 - 2018 Pain Examination Writing, American Board of Anesthesiology
10/2009 - 2011 Chair, Somatosensory and Chemosensory Systems Study Section, National Institutes of Health
10/2013 - 2016 Surgery, Anesthesia, Trauma Study Section, National Institutes of Health
06/2019 NIAMS Back Pain Consortium (BACPAC) Mechanistic Research Center Special Emphasis Panel, National Institutes of Health
12/2020 Co-Chair, ETTN-10 Small Business: Clinical Neurophysiology, Devices, Neuroprosthetics and Biosensors Study Section, National Institutes of Health

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:

Active

Peer Review

Title:	Harnessing T-junction filtering; bidirectional control of sensory neuron impulse traffic
Source:	NIH R01
Role:	Principle Investigator
Dates:	10/2017 - 07/2022
Direct Funds:	$1,160,542 (Total Direct)

Title:	Endogenous cannabinoid signaling in the development of chronic neuropathic pain
Source:	VA Rehabilitation R&D Merit Review
Role:	Co-Investigator
PI:	Caron Dean-Bernhoft
Dates:	04/2019 - 03/2021
Direct Funds:	$1,100,000 (Total Direct)

Title:	Neuropathic Pain-induced Depression: the Role of Endocannabinoids
Source:	NIH R01
Role:	Co-Investigator
PI:	Bin Pan
Dates:	06/2019 - 05/2024
Direct Funds:	$1,585,000

Title:	Primary sensory neuron-targeted block of Cav3.2 for treatment of chronic neuropathic pain
Source:	NIH R61/R33
Role:	Principal Investigator multi-PI with Hongwei Yu
PI:	multi-PI with Hongwei Yu
Dates:	06/2020 - 05/2023
Direct Funds:	$750,000 (Total Direct)

Non-Peer Review

Title:	Determining the Efficacy of Burst versus Continuous Spinal Cord Stimulation Patterns in Rat using Functional Resonance Imaging of the CNS Pain Matrix
Source:	Abbott, Inc.
Role:	Principle Investigator
Dates:	01/2017 - Present
Direct Funds:	$169,000 (Total Direct)

Title:	Preclinical Assessments of Novel Dorsal Root Ganglion (DRG) Stimulation Waveforms
Source:	Abbott, Inc
Role:	Principle Investigator
Dates:	09/2018 - Present
Direct Funds:	$140,960 (Total Direct)

Title:	Design and Validation of AAV for expressing GAD67 as an analgesic
Source:	Mirata, Inc.
Role:	Principle Investigator
Dates:	01/2021 - Present
Direct Funds:	$43,883

Prior

Peer Review

Title:	Definition of the Anatomic and Physical

	Features of the Spinal Column
Source:	American Society of Regional Anesthesia, Koller Grant
Role:	Principle Investigator
Dates:	07/01/1993 - 06/30/1995
Direct Funds:	$8,800 (Total Direct)
Title:	Membrane Electrophysiologic Changes in Dorsal Root Ganglion Cells of Rats with Neuropathic Pain
Source:	American Society of Regional Anesthesia, Braun Grant for Research Training in Pain
Role:	Director
Dates:	07/01/1996 - 06/30/1997
Direct Funds:	$40,000 (Total Direct)
Title:	Calcium Channel Changes in Dorsal Root Ganglion Cells of Rats with Neuropathic Pain
Source:	MCW Research Affairs Committee
Role:	Principle Investigator
Dates:	07/01/1997 - 06/30/1998
Direct Funds:	$40,000 (Total Direct)
Title:	Ligand Effects on Calcium Currents in Injured Sensory Neurons: Therapeutic Mechanism of Glucocorticoid, Local Anesthetic and Gabapentin
Source:	American Society of Regional Anesthesia, Braun Grant for Research Training in Pain
Role:	Diector
Dates:	07/01/1999 - 06/30/2000
Direct Funds:	$40,000 (Total Direct)
Title:	Calcium Signaling in Sensory Neurons in Neuropathic Pain
Source:	MCW Research Affairs Grant
Role:	Principle Investigator
Dates:	07/01/2000 - 06/30/2001
Direct Funds:	$14,982 (Total Direct)
Title:	Computer Based Instruction in Regional Anesthesia: The Regional Anesthesia Instructional Disc (RAID)
Source:	MCW Curriculum and Education Committee Learning Resource Fund
Role:	Principle Investigator
Dates:	07/01/2000 - 06/30/2001
Direct Funds:	$9,800 (Total Direct)
Title:	Treatment of the Dorsal Root Ganglion: The effects of Glucocorticoids
Source:	Foundation for Anesthesia Research and Education (FAER)
Role:	Director

PI:	Constantine Sarantopoulos MD, PhD
Dates:	07/01/2001 - 06/30/2003
Direct Funds:	$35,000 (first year $50,000 second year)
Title:	Traumatic Painful Neuropathy and Calcium Signaling
Source:	NIH R01
Role:	Principle Investigator
Dates:	07/01/2001 - 06/30/2005
Direct Funds:	$850,000 (Total Direct)
Title:	Genetic Profiles for Perioperative Applications
Source:	NIH SBIR Phase II to Third Wave Technologies Inc.
Role:	Principal Investigator, collaborating site
Dates:	06/01/2004 - 12/31/2006
Direct Funds:	$77,866 (Total Direct)
Title:	KATP Channels in Normal and Injured Sensory Transduction
Source:	NIH K08
Role:	Mentor
PI:	to Constantine Sarantopoulos MD, PhD
Dates:	07/2005 - 06/2010
Direct Funds:	$661,075 (Total Direct)
Title:	Traumatic Painful Neuropathy and Calcium Signaling
Source:	MCW Research Affairs Committee Interim Funding
Role:	Principle Investigator
Dates:	07/2006 - 06/2007
Direct Funds:	$15,000 (Total Direct)
Title:	Traumatic Painful Neuropathy and Calcium Signaling
Source:	NIH R01
Role:	Principle Investigator
Dates:	07/2007 - 06/2012
Direct Funds:	$1,006,250 (Total Direct)
Title:	Gene Delivery to the Dorsal Root Ganglion for Chronic Pain Therapy
Source:	VA Rehabilitation Research and Development
Role:	Principle Investigator
Dates:	04/2008 - 09/2011
Direct Funds:	$825,000 (Total Direct)
Title:	Contribution of sigma receptor activation to neuropathic pain
Source:	NIH K01
Role:	Mentor
PI:	Hsiang-En Wu, MD
Dates:	07/2009 - 06/2014
Direct Funds:	$675,000 (Total Direct)

Title:	A novel pathway mediating the development of chronic orofacial neuropathic pain
Source:	NIH R01
Role:	Co-Principle Investigator
PI:	Z. David Luo
Dates:	04/2011 - 02/2016
Direct Funds:	$3,500,000 (Total Direct)

Title:	DRG engraftment of transduced mesenchymal stem cells to treat neuropathic pain
Source:	NIH R01
Role:	Principle investigator
Dates:	06/2012 - 12/2016
Direct Funds:	$1,102,500 (Total Direct)

Title:	Cannabinoid signaling in the dPAG: specific analgesic and autonomic functions
Source:	VA Biomedical Lab R&D Merit Review
Role:	Principle Investigator
Dates:	10/01/2013 - 09/30/2017
Direct Funds:	$621,700 (Total Direct)

Title:	Sensory neuron gene treatment to reverse plasticity in chronic pain
Source:	Advancing a Healthier Wisconsin
Role:	Principle Investigator
Dates:	01/01/2014 - 07/31/2016
Direct Funds:	$15,000 (Total Direct)

Title:	Persisting functional CNS changes following peripheral nerve repair
Source:	VA Rehabilitation R&D SPiRE grant
Role:	Principle Investigator
Dates:	10/2015 - 05/2020
Direct Funds:	$199,998 (Total Direct)

Title:	AAV-encoded analgesic peptide aptamers for chronic pain
Source:	VA Rehabilitation R&D Merit Review
Role:	Principle Investigator
Dates:	06/2016 - 05/2020
Direct Funds:	$1,098,840 (Total Direct)

Non-Peer Review

Title:	Dorsal Root Ganglion Stimulation for Pain Treatment
Source:	Spinal Modulation, Inc.
Role:	Principle Investigator
Dates:	09/2010 - 08/2011
Direct Funds:	$17,000 (Total Direct)

Title:	Dorsal Root Ganglion Stimulation for Pain Treatment

Source:	Spinal Modulation, Inc.
Role:	Principle Investigator
Dates:	01/2014 - 12/2014
Direct Funds:	$50,000 (Total Direct)

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

Regional

"Epidural Anatomy and Dorsal Column Stimulation." Minneapolis, Medtronic Neurological Forum, Minneapolis, MN, 11/23/1991

Epidurals for Cancer Pain; Lecture and Panel, Illinois State Society of Anesthesiology, Chicago, IL, 11/08/1992

What do blocks tell us about pain; Lecture and Panel, Missouri State Society of Anesthesiology, Jefferson City, MO, 04/1993

Epidurals for Cancer Pain; Lecture and Panel, Missouri State Society of Anesthesiology, Jefferson City, MO, 04/1993

Regional Anesthesia for Thoracoabdominal Surgery, ASRA Regional Meeting, Chicago, IL, 08/06/1994

Issues in Anatomy, Wisconsin Society of Anesthesiology Annual Meeting, 1995

What's New in Pain Management, Wisconsin Society of Anesthesiology Annual Meeting, 1995

Brachial Plexus Blockade;Thoracic Epidural Blockade, Am. Society Regional Anesthesia, Milwaukee, WI, 09/1999

Physiology of Regional Anesthesia, Wisconsin Society of Anesthesiology, 10/2000

Dynamics of the Intrathecal /Epidural Spaces, Medtronic Neurologic Seminar Series, 03/2001

National

Post-operative analgesia and the stress response, National meeting of the American Veterans Association of Surgeons, Milwaukee, WI, 05/10/1991

Lecture and Panel, New Anatomy of the Epidural Space; New Anatomy of the Stellate Ganglion, American Society of Regional Anesthesia annual meeting, Tampa, FL, 03/26/1992 - 03/29/1992

Epidural Anatomy, Visiting Professor, Hospital for Special Surgery, Cornell Medical School, New York, NY, 12/12/1992

Sympathetic block, lumbar and cervical; What's new in epidural anatomy?, American Society of Regional Anesthesia, Seattle, WA, 05/13/1993

Local Anesthetics; Regional Anesthesia, University of California San Diego Anesthesiology review course, San Diego, CA, 05/26/1993

Sympathetic block lumbar and cervical, American Society of Regional Anesthesia, Chicago, IL, 04/07/1994

Anatomy, Head and Neck Blocks, American Society of Regional Anesthesia Regional Meeting, Cincinnati, OH, 04/29/1994

Management of Chronic Cancer Pain: New analgesics and Principles of Pharmacokinetics, American College of Surgery, Chicago, IL, 10/13/1994

Sympathetic block lumbar and cervical, American Society of Regional Anesthesi, Orlando, FL, 04/01/1995

Regional Anesthesia for Thoracoabdominal Surgery, American Society of Regional Anesthesia Regional Meeting, Milwaukee, WI, 06/17/1995

Lecture, Panel Chair, Epidural Steroids; Diagnosis of RSD, American Pain Society Annual Meeting, Los Angeles, CA, 11/07/1995

Cardiovascular Response to Sympathetic Block by Regional Anesthesia; Local Anesthetic Toxicity, American Society of Regional Anesthesia Future Directions of Acute Pain Management; Consensus conference, Orlando,FL, 05/31/1996 - 05/02/1996

Outcomes and Regional Anesthesia, American Society of Regional Anesthesia, Chicago, IL, 11/1996

Anatomy of the Vertebral Column Relevant to Drug Delivery, Symposium on Spinal Drug Delivery, San Diego, CA, 04/1997

Anatomy and Physiology of the Sympathetic Nervous System, American Society of Regional Anesthesia Refresher Course, Hershey, PA, 09/1997

Sympathetic block lumbar and cervical; Local Anesthetic Myotoxicity, American Society of Regional Anesthesia, Seattle, WA, 05/14/1998

Anatomic Issues, Society of Toxicology satellite symposium on Safety Evaluation of Drugs for Central Nervous System Delivery, New Orleans, LA, 03/1999

Sympathetic block lumbar and cervical; Resuscitation from Local Anesthetic Toxicity, American Society of Regional Anesthesia, Philadelphia, PA, 05/1999

Myotoxicity of Local Anesthetics, Ophthalmologic Anesthesia Society, Chicago, IL, 10/1999

Visiting Professor, Washington University of St. Louis Department of Anesthesiology, St. Louis, MO, 12/2000

Visiting Professor, Harvard Medical School, Brigham and Women's Hospital Department of Anesthesiology, Boston, MA, 03/2001

Course Director: Intensive Workshop on Brachial Plexus Block, American Society of Regional Anesthesia, Vancouver, British Columbia, Canada, 04/2001

Spinal Anatomy, Visiting Professor, University of Iowa Department of Anesthesiology, Iowa City, IA, 04/2001

Invited Lecture: Myotoxicity. Symposium on Local Anesthetic Toxicity, American Society of Regional Anesthesia, Miami, FL, 11/2001

Visiting Professor, University of New Mexico Medical School, Department of Anesthesiology, Albuquerque, NM, 03/2002

Keynote Speaker, 6th Annual Hospital for Special Surgery Regional Anesthesia Meeting, New York, NY, 04/2002

Anatomy of Regional Anesthesia; Anatomy of Brachial Plexus Blockade, American Society of Regional Anesthesia and Pain Medicine annual meeting, Orlando, FL, 03/11/2004 - 03/14/2004

What the Anesthesiologist needs to know about Anatomy, Kansas City Anesthesia Society, Kansas City, MO, 03/2004

Opioids for pain management, Cleveland VA Grand Rounds, Louis Stokes Cleveland VA Medical Center, Cleveland, OH, 05/12/2004

Spinal Anatomy, Visiting Professor, Case Western Reserve University, Cleveland, OH, 05/13/2004

Opioid Wars: From Pharmacology to Politics; Adjuvant Medications for Chronic Pain, Pain Management Symposium, Louis Stokes Cleveland VA Medical Center, Cleveland, OH, 09/24/2004

invited lecture: Neuropathic Pain: The Role of Calcium in the Sensory Neuron, American Pain Society annual meeting, San Antonio, CA, 05/05/2006

Anatomy for Regional Anesthesia, American Society of Anesthesiology Annual Meeting, Refresher Course Lecture, Chicago, IL, 10/2006

Anatomy for Regionalists; Refresher Course Lecture, American Society of Anesthesiology, Annual Meeting, San Francisco, CA, 10/2007

Neuropathic Pain: the Calcium Connection, Visiting Professor, University of Indiana Dept. of Pharmacology, 04/2008

Visiting Professor, Anatomic Mysteries in Anesthesia., University of Indiana Dept. of Anesthesiology, 04/2008

Visiting Professor, Neuropathic Pain: Where does the Pain Happen, and what do Ions have to do with it?, University of Texas, Houston, MD Anderson Cancer Center, 06/2008

Visiting Professor, Epidural Anatomy (Journal Club);Neuropathic Pain: Where does the Pain Happen, and what do Ions have to do with it? (Lecture), University of Cincinnati, Department of Anesthesiology, 01/2009

Gaston Labat Award Lecture, The Primary Sensory Neuron: Where it is, What it does, and Why it Matters, American Society of Regional Anesthesia, Phoenix, AZ, 04/2009

Invited Lecture, Peripheral Nerve Anatomy and Neurological Complications, American Society of Regional Anesthesia, Phoenix, AZ, 04/2009

Visiting Professor, Where does the Pain Happen, and What do Ions have to do with it?;Epidural Anatomy: Clinical Correlations, Brigham and Women's Hospital. Annual Vandam Lectureship: Neuropathic Pain, 06/2009

Visiting Professor, Mysteries of Regional Anesthesia Anatomy, Grand Rounds, University of Wisconsin Department of Anesthesiology, 07/2010

Visiting Professor, Neuropathic Pain: What's Calcium got to do with it?, University of Iowa Department of Pharmacology Pain Research Program, 04/2011

Visiting Professor, The Dorsal Root Ganglion: why this tiny organ matters to anesthesiologists, Wake Forrest University School of Medicine, 11/2011

Visiting Professor, Neuropathic pain: Ca2+ currents, T-junction filtering, and cell transplant, Pittsburgh Center for Pain Research invited seminar, 04/2012

Keynote Speaker, Why Should Anesthesiologists do Research?, , Cleveland Clinic Foundation; Anesthesia

Research Day, 06/2012
Visiting Professor, What anesthesiologists should know about the dorsal root ganglion?, Stony Brook University Department of Anesthesiology, 06/2012
Mechanisms of electrical stimulation of the DRG and physiological effects, Electrical Stimulation of the Nervous System symposium, Orlando, FL, 03/2014
Visiting Professor, Neuropathic Pain: Sensory Neuron Calcium, and Novel Therapeutic Approaches, University of Maryland Baltimore, 04/2014
Visiting Professor, Neuropathic Pain: Sensory Neuron Calcium, and Novel Therapeutic Approaches, Blaustein Pain Seminar, Johns Hopkins University, 10/2014
Visiting Professor, Neuropathic Pain, Sensory Neuron Calcium, and Novel Therapeutic Approaches, MD Anderson Anesthesiology and Neuroscience, 03/2016
Visiting Professor, The Sensory Neuron T-Junction is a Natural Impulse Filter and Potential Therapeutic Target, UCSF Department of Anesthesiology, 03/2017

International

Epidural Space: New Perspectives, University of British Columbia Anaesthesia Highlights, Vancouver, BC, 02/27/1994
New Developments in the Physiology of Pain: Implications for Therapy., Croatian World Congress of Anesthesiology, Hvar, Croatia, 09/1996
Role of Sympathetic Neural Blockade in Management of RSD (CRPS), World Foundation for Pain Relief and Research, New York, 12/1997
Epidural Anatomy, Visiting Professor, Innsbruck, Austria, 06/1998
Epidural Anatomy: It's not what you think., Canadian Anaesthetists Society, Toronto, Canada, 06/1998
Scientific Writing and Publication ; Spinal Anatomy, Visiting Professor, Graz, Austria, 06/1998
Circulatory Physiology and Resuscitation during Neural Blockade, Visiting Professor, Innsbruck, Austria, 02/22/1999 - 03/13/1999
Diagnostic and Prognostic Neural Blockade, European Society of Anesthesia, Amsterdam, 05/1999
Choice of Regional Anesthesia vs General Anesthesia., Visiting Professor, Innsbruck, Austria, 02/2000
Spinal Anatomy; Anatomy of Sympathetic Blocks, Interdisciplinary Workshop in Anatomy of Regional Anesthesia, Graz, Austria, 03/2000
Visiting Professor, Dalhousie University Department of Anaesthesia, 05/2000
Anatomy of Neuraxial Anesthesia, Invited Speaker, University of Alberta Anesthesia Course, 02/2001
Animal Models for Pain Research, European Academy of Anesthesia, Graz, Austria, 08/2001
Keynote Speaker, British Ophthalmologic Anesthesia Society, Birmingham, England, 06/2002
Invited Speaker, Anatomy of combined spinal/epidural anesthesia; Animal models in pain research, European Society of Regional Anesthesia, Malta, 09/2003
Opioids in Intensive Care, Intensive Care Medicine Update, Graz, Austria, 09/2004
Visiting Professor, Department of Anesthesiology, University of Graz, Austria, 09/2004
Fast Track Anesthesia for Ear-Nose-Throat Surgery, Athens, Greece, 03/2005
Regional Anesthesia Techniques for Fast Track Anesthesia, Athens, Greece, 03/2005
Relevant Anatomy for the Regional Anesthetist, American Society of Regional Anesthesia Annual Meeting, Toronto, Canada, 04/2005
Peripheral Nerve Toxicity of Local Anesthetics, Consensus Conference, Toronto, Canada, 04/2005
Spinal Anatomy: Myths, Reality Implications, Manitoba Anesthesiologists Society, Winnipeg, Manitoba, Canada, 04/2006
"Regional versus General: Does it Matter?, Visiting Professor, Dept. of Anesthesiology, University of Manitoba, Winnipeg, Canada, 04/2006
Foundation Visitor of the Faculty of Pain Medicine of the Australian and New Zealand College of Anaesthetists in Australia, Opioid Mechanisms; Back Pain Pathophysiology; Anatomy Relevant to Regional Anesthesia; Pathophysiology of Neuropathic Pain; Physiological Comparisons of Regional and General Anesthesia; in Sydney and Perth, Michael Cousins Foundation Visitor's Lecture to the College Annual Meeting, Sydney Convention & Exhibition Centre, Australia, 05/03/2008 - 05/07/2008
Invited Symposium, Ca2+ signaling in primary nociceptors: Mechanisms and modulation by inflammation and nerve injury, 12th World Congress on Pain, Glasgow, Scotland, 08/17/2008 - 08/22/2008
Gene Therapy for Chronic Pain, International Anesthesia Research Society, IARS annual meeting, Honolulu, Hawaii, 03/20/2010 - 03/23/2010
The Primary Sensory Neuron: Where it is, What it does, and Why it matters, University of Split, Croatia,

06/2011

Anatomical mysteries, Department of Anesthesiology Grand Rounds, University of Amsterdam Medical Center, 05/2013

The DRG, a small organ with a big future, Frederik Ruysch Lecture, University of Amsterdam Medical Center, 05/2013

Anatomy of the Dorsal Root Ganglion; Mechanisms of Electrical Stimulation of the DRG and Physiological Effects, Stimulation of the DRG Advanced Masterclass, Budapest, 10/2013

Gene therapy for pain, Japanese Society of Anesthesiology, Yokohama, 05/15/2014 - 05/17/2014

Best Abstract Award oral presentation, Functional MRI reveals analgesia by DRG stimulation in rats, International Neuromodulation Society, Montreal, 06/06/2015 - 06/11/2015

Functional Anatomy & Mechanisms of DRG Stimulation" and "Role of DRG in Pain & Mechanisms of Action of DRG Stimulation, St. Jude Medical Clinical Mentors Forum, Montreal, 06/2015

CaMKII determines whether touch is painful, Peking University Forum on Pain Medicine, Beijing, 06/2015

PEER REVIEWED WORKSHOPS/PRESENTATIONS:

Regional

NA

COMMITTEE SERVICE:

Medical College of Wisconsin

1992 Dean's Task Force on Physical Medicine and Rehabilitation
1993 - 1995 MCW Faculty Risk Advisory Panel
1993 - 1998 Anesthesia Department Clinical Competence Committee
1993 - 1997 Anesthesiology Executive Committee
2000 - 03/2005 Anesthesia Research Committee
08/2001 - 03/2004 MCW Faculty Library Committee
02/2002 - 09/2002 Faculty Council Representative
2002 Chair, Dean's Committee on Interdisciplinary Pain Clinic
2002 - 2004 Departmental Compensation Committee
08/2003 - 08/2006 MCW Rank and Tenure Committee
05/2005 - Present Chair, Departmental Rank and Tenure Committee
06/2005 - Present Departmental Faculty Development Committee
06/2005 - 11/2005 Departmental, Orthopedic Anesthesia Task Force
06/2005 - 11/2005 Departmental, Acute Pain Task Force
02/2008 - 2011 Director, Departmental Visiting Professor program
08/2012 - 03/2016 MCW Rank and Tenure Committee

MEDICAL COLLEGE TEACHING ACTIVITIES:

Medical Student Education

1989 - Present Departmental student lecture series
1997 - 1999 Lecturer, Neurosciences Course
2009 - Present Department liaison for Physician Scientist pathway

Resident and Fellow Education

1991 - 1998 Anesthesiology Department Pain Clinic; Weekly Lecture Series Coordinator and Principal Lecturer
1991 - Present Resident Core Lecture series Regional Anesthesia and Pain Block Coordinator and Lecturer
1991 - Present Resident Introductory Lecture Series
1994 - 2007 Annual fall weekend anatomy workshop (director)
1998 - Present Pain Clinic Weekly Lecture Series Lecturer

Continuing Medical Education

02/08/1994 Faculty at MCW Anesthesia Department Annual Meeting, Update on Regional Anesthesia. Copper Mountain, Colorado

EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:

Medical Students

Johnny Yi, 06/2004 - 08/2004 MS2, Summer Research
Paul Weyker, University of Wisconsin, 06/10/2006 - 08/21/2006 MS2; Foundation for Anesthesia Research and Education (FAER) Student research grant
Patrick Wagner, 2006 - 2008 Clinical Advisor
Jacob Clark, 2007 - 2009 Clinical Advisor
Robert Biechler, 2007 - 2009 Clinical Advisor
Andrew Koopmeiners, 06/2009 - 08/2012 MS2, Summer research and ongoing research
Katherine Oyster, 06/2010 - 08/2010 MS2 summer research
Glorilee Balistrieri, 2010 - 2012 Clinical Advisor
Colby Duncan, 06/2011 - Present MS2, summer research
Eric Simon, 06/2012 - 08/2012 MS2, summer research
Colby Duncan, 2012 - 2014 Clinical Advisor
Chelsea Sprick, 06/2013 - 08/2013 MS2 summer research
Hongfei Xiang MD, 10/2015 - 2016 Visiting Scholar
Hao Xu MD, PhD, 02/2016 - 2017 Visiting Scholar
Zhiyong Zhang MD, 07/2016 - 2017 Visiting Scholar
Maraika Robinson, 2016 - Present Clinical Advisor
Maraika Robinson, 2017 MS2 summer research
Yongsong Cai MD, PhD, 02/2018 - 02/2019 Visiting Scholar
Zev Khan, 2018 MS2 summer research
Chensheng Qiu, MD, PhD, 02/2019 - 07/2020 Visiting Scholar
Madeline Martell, 2019 MS3 summer research

Graduate Students

PhD

J Bruce McCallum, Research Scientist, 01/1996 - 05/2009
Qingbo Tang, Research Scientist, 07/2009 - 02/2011

MS

Fei Wang, 06/2014 - 05/2015

Postdoctoral Students

Alexander Kulier, MD, 06/1995 - 07/1996 postdoctoral fellow, research
Constantine Sarantopoulos MD, PhD, 01/1999 - 05/2010 Postdoctoral fellow, subsequently Assistant Professor
Shinji Kohro, MD, 10/1999 - 03/2000 postdoctoral fellow, research
Yuri Nakae MD, 03/2000 - 08/2002 postdoctoral fellow, research
Akifumi Kanai MD, 06/2000 - 03/2001 postdoctoral fellow, research
Damir Sapunar MD, 05/2001 - 02/2003 postdoctoral fellow, research, Currently Assoc. Prof. Dept. of Anatomy, Univ. of Split, Croatia
Philipp Lirk, MD, 07/2003 - 09/2004 postdoctoral fellow, research, Academic Medical Center, University of Amsterdam
currently Dept. of Anesthesiology, Graz, Austria, 01/2004 - 11/2005 postdoctoral fellow, research, currently Dept. of Anesthesiology, Graz, Austria
Chun-Yuan Huang, PhD, 07/2004 - 07/2005
Marcel Rigaud MD, 11/2005 - 11/2007 postdoctoral fellow, research
Geza Gemes, MD, 11/2007 - 11/2009 Postdoctoral Fellow
Madhavi Bangaru, PhD, 06/2009 - 06/2011 Postdoctoral Fellow
Yuan Guo, PhD, 06/2012 - 09/2014 Postdoctoral Fellow
Zhen Liu, MD, MS, 06/2014 - 05/2015 Postdoctoral Fellow
Mark Aason MD, Research

Clinical/Research Fellows

1990 - 2002 Pain Management Fellow supervision (total of 20 fellows)

Residents

Patrick Filip MD, 01/01/2006 - 06/30/2006 Research
Daniel Vilceanu, MD, PhD, 07/2011 - Present research during residency

Faculty

John Amuzu MD, 01/1997 - 01/1999 Assistant Professor
Christopher Pawela PhD, 10/2015 - Present Assistant Professor, Anesthesiology
Allison Ebert, 05/2016 - Present Assistant Professor, Cell Biology

DISSERTATION COMMITTEES:

04/2003 Constantine Sarantopoulos MD, Masters, Pharmacology
04/2004 Nicole Breese BS, Masters, Cell Biology
05/2010 Daniel Vilceanu MD, Doctoral, Cell Biology
04/2013 Andrew Weyer BS, Doctoral, Cell Biology
07/2015 - 2018 Francie Moehring BS, Doctoral, Cell Biology
07/2016 - 2019 Ashley Reynolds BS, Doctoral, Cell Biology

MENTOR FOR FEDERAL RESEARCH GRANT:

2005 - 2010 Costas Sarantopoulos, MD, PhD; NIH K08
2009 - 2014 Hsiang-En Wu, MD; NIH K01

PATENTS:

08/2005 - Present Inventor, Transcutaneous Electrical Nerve Locator USPTO # 7,010,352
01/2017 - Present Inventor (with Bin Pan), Directed Dorsal Root Ganglion Stimulation, USPTO #62/449,849
06/2019 - Present Inventor (with H Yu MD), Calcium Channel 3.2 Inhibitory Peptides and Uses Thereof, USPTO #62/857,041

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Hogan Q, Haddox JD, Abram S, Weissman D, Taylor ML, Janjan N. Epidural opiates and local anesthetics for the management of cancer pain. Pain 46: 1991.
2. Hogan Q. Lumbar epidural anatomy: a new look by cryomicrotome section. Anesthesiology 75:767-775, 1991.
3. Hogan Q, Erickson S. MR imaging of the stellate ganglion: Normal appearance. Am J Roentgen 158:655-659, 1992.
4. Hogan Q, Erickson S, Haddox JD, Abram S. The spread of solutions during "stellate ganglion" blockade. Reg Anesth 17:78-83, 1992.
5. Hogan Q, Haddox JD. Headache from intracranial air after a lumbar epidural injection: subarachnoid or subdural? Reg Anesth 17: 303-305, 1992.
6. Hogan Q, Erickson SJ, Abram S. Computerized tomography (CT) guided stellate ganglion blockade. Anesthesiology 77:596-599,1992.
7. Erickson SJ, Hogan Q. CT guided stellate ganglion injection: description of technique and efficacy of sympathetic blockade. Radiology 188:707-709, 1993.
8. Hogan QH, Stadnicka A, Stekiel TA, Bosnjak ZJ, Kampine JP. Effects of epidural and systemic lidocaine on sympathetic activity and mesenteric circulation in rabbits. Anesthesiology 79:1250-1260, 1993.
9. Hogan Q, Taylor ML, Goldstein M, Stevens R, Kettler R. Success rates in producing sympathetic blockade by paratracheal injection. Clin J Pain 10:139-145, 1994
10. Hogan Q, Stadnicka A, Kampine JP. Effects of epidural anesthesia on splanchnic capacitance. Adv Pharmacol 31: 471-483, 1994.
11. Hogan Q, Dotson R, Erickson S, Kettler R, Hogan K: Local anesthetic myotoxicity: a case and review. Anesthesiology 80:942-947, 1994
12. Hogan QH, Stadnicka A, Stekiel TA, Bosnjak ZJ, Kampine JP. Mechanism of mesenteric venodilatation during epidural anesthesia in rabbits. Anesthesiology 81:939-945, 1994

13. Stadnicka A, Stekiel T, Hogan Q, Bosnjak Z, Kampine JP: Hypoxic contraction of isolated rabbit mesenteric veins: contribution of endothelium and attenuation by volatile anesthetics. Anesthesiology 82:550-558, 1995.
14. Hogan QH, Stadnicka A, Stekiel TA, Bosnjak ZJ, Kampine JP. Region of epidural blockade determines sympathetic and mesenteric capacitance effects in rabbits. Anesthesiology 83:604-610, 1995
15. Hogan QH, Prost R, Kulier A, Taylor ML, Liu S, Mark L. Magnetic resonance imaging of cerebrospinal fluid volume and the influence of body habitus and abdominal pressure. Anesthesiology 84:1341-9, 1996
16. Hogan QH. Epidural anatomy examined by cryomicrotome section: influence of age, level and disease. Reg Anesth 21:395-406, 1996.
17. Hogan QH. Cardiovascular response to sympathetic blockade by regional anesthesia. Reg Anesth 21S: 26-34, 1996.
18. Hogan QH. Local anesthetic toxicity: an update. Reg Anesth 21S:43-50 1996.
19. Hogan QH. Size of human lower thoracic and lumbosacral nerve roots. Anesthesiology 85:37-42, 1996.
20. Kulier A, Woehlick HJ, Hogan QH, Hoffmann RG, Novalija E, Turner LA, Bosnjak ZJ. Epinephrine dysrhythmogenicity is not enhanced by subtoxic bupivacaine in dogs. Anesth Analg 83:62-7, 1996
21. Hogan QH, Kulier A, Bosnjak ZJ, Kampine JP. Sympathetic and mesenteric venous responses to baroreceptor or chemoreceptor stimulation during epidural anesthesia in rabbits. Anesthesiology 85: 1413-1421, 1996
22. Fouch RA, Abram SE, Hogan QH. Neural blockade for upper extremity pain. Hand Clinics 12: 791-800, 1996
23. Hogan Q, Abram S. Neural blockade for diagnosis and prognosis: a review. Anesthesiology 86:216-241, 1997
24. Amuzu J, Baig H, Tam H, Patel S, Hogan Q, Maitra-D'cruze A. Perinatal anesthetic considerations in a patient with Eisenmenger's syndrome. Am J Anesth 24:311-314, 1997
25. Hogan QH, Novalija E, Kulier AH, Turner LA, Bosnjak ZJ. Effect of thoracic epidural anesthesia on spontaneous postinfarction ventricular dysrhythmia in dogs. Reg Anesth 22:318-324, 1997
26. Hogan Q, Amuzu J, Clifford P, Bosnjak Z, Kampine JP. Hypoxia causes apnea during epidural anesthesia in rabbits. Anesthesiology 88:761-7, 1998
27. Carpenter RL, Liu S, Hogan Q, Crane B. Lumbosacral CSF volume is the primary determinate of sensory block height and duration of spinal anesthesia. Anesthesiology 89:24-9, 1998
28. Hogan QH. Epidural anatomy: New observations. Can J Anaesth 45:R40-48, 1998
29. Novalija E, Hogan QH, Kulier AH, Turner LH, Bosnjak ZJ. Effects of desflurane, sevoflurane and halothane on post-infarction spontaneous dysrhythmias in dogs. Acta Anesthesiologica Scand 42:353-7, 1998
30. McCallum JB, Boban N, Hogan Q, Schmeling WT, Kampine JP, Bosnjak ZJ. The mechanism of alpha-2 adrenergic inhibition of sympathetic ganglion transmission. Anesth Analg 87:503-10, 1998
31. Hogan Q, Stadnicka A, Bosnjak Z, Kampine JP: Effects of lidocaine and bupivacaine on isolated rabbit mesenteric veins. Reg Anesth and Pain Med 23:409-17, 1998
32. Hogan, Q. Anatomy of spinal anesthesia: some old and new findings. Reg Anesth and Pain Med 23:340-43, 1998
33. Hogan, Q. Epidural catheter tip position and distribution of injectate evaluated by computerized tomography. Anesthesiology 90:964-70, 1999
34. Hogan, Q, Toth, J. Anatomy of soft tissues of the spinal canal. Reg Anesth and Pain Med 24:303-10, 1999
35. Kulier AH, Novalija E, Hogan Q, Vicenzi MN, Woehlck HJ, Bajic J, Atlee JL, Bosnjak ZJ. The effects of the new antiarrhythmic E 047/1 on postoperative ischemia-induced arrhythmias in dogs. Anesthesia and Analgesia 89:1393-9, 1999
36. Fassoulaki A, Sarantopoulos C, Melemeni A, Hogan Q. EMLA reduces acute and chronic pain after breast surgery for cancer. Reg Anesth and Pain Med 25:350-5, 2000
37. Hogan QH, McCallum JB, Sarantopoulos C, Aason M, Mynlieff M, Kwok W-M, Bosnjak ZJ. Painful neuropathy decreases membrane calcium current in mammalian primary afferent neurons. Pain 86:43-53, 2000
38. Fassoulaki A, Sarantopoulos C, Melemeni A, Hogan Q. Regional block and mexiletine: the effect on pain after cancer breast surgery. Reg Anesth Pain Med 26:223-228, 2001
39. Krismer AC, Hogan QH, Wenzel V, Lindner, KH, Achleitner U, Oroszy S, Rainer B, Wihaidi A, Mayr VD, Spencker P, Amann A. The efficacy of epinephrine or vasopressin for resuscitation during epidural anesthesia. Anesth Analg 93:734-42, 2001
40. Kohro S, Hogan QH, Nakae Y, Yamakage M, Bosnjak ZJ. Anesthetic effects on mitochondrial ATP-

sensitive K channel. Anesthesiology 95:1435-1440, 2001
41. Hogan QH. Distribution of solution in the epidural space: examination by cryomicrotome section. Regional Anesthesia and Pain Medicine 27:150-156, 2002
42. Sarantopoulos C, McCallum JB, Kwok W-M, Hogan QH. Gabapentin decreases membrane calcium currents in injured as well as in control mammalian primary afferent neurons. Regional Anesthesia and Pain Medicine 27:47-57, 2002
43. Fassoulaki A, Patris K, Sarantopoulos C, Hogan Q. The analgesic effect of gabapentin and mexiletine after breast surgery for cancer. Anesthesia and Analgesia 95: 985-91, 2002
44. Hogan QH. Animal pain models. Regional Anesthesia and Pain Medicine 27:385-401, 2002
45. Neal JM, Hebl JR, Gerancher JC, Hogan QH. Brachial plexus anesthesia: Essentials of our current understanding. Regional Anesthesia and Pain Medicine 27: 402-428, 2002
46. Kohro S, Hogan QH, Nakae Y, Yamakage M, Bosnjak ZJ. Repeated or prolonged isoflurane exposure reduces mitochondrial oxidizing effects. Anesthesiology 98:275-8, 2003
47. McCallum JB, Kwok WM, Mynlieff M, Bosnjak ZJ, Hogan QH. Loss of T-type calcium current in sensory neurons of rats with neuropathic pain. Anesthesiology 98:209-16, 2003
48. Sarantopoulos C, McCallum JB, Kwok WM, Hogan QH. ATP-sensitive potassium channels in mammalian primary afferent neurons: the effect of neuropathic injury and gabapentin. Neuroscience Letters 343:185-9, 2003
49. Fassoulaki A, Zotou M, Pourgiezi T, Siafaka I, Hogan Q. Direction and side used to determine the extent of sensory block after subarachnoid anesthesia do not influence the level of the block. Acta Anaesth Belg 54:33-36, 2003
50. Nakae Y, Kohro S, Hogan QH, Bosnjak ZJ. Intracellular mechanism of mitochondrial adenosine triphosphate-sensitive potassium channel activation with isoflurane. Anesthesia and Analgesia 97:1025, 2003
51. Kohro S, Hogan QH, Warltier DC, Bosnjak ZJ. Protein kinase C inhibitors produce mitochondrial flavoprotein oxidation in cardiac myocytes. Anesth Analg 99:1316-22, 2004
52. Kanai A, Sarantopoulos C, McCallum JB, Hogan QH. Painful neuropathy alters the effect of gabapentin on sensory neuron excitability in rats. Acta Anaesth Scand 48:507-12, 2004
53. Hogan Q, Sapunar D, Modric-Jednacak K, McCallum JB. Detection of neuropathic pain in a rat model of peripheral nerve injury. Anesthesiology 101:476-87, 2004
54. Sarantopoulos C, McCallum JB, Kwok W-M, Hogan Q. -escin diminishes voltage-gated calcium current rundown in perforated patch-clamp recordings from rat primary afferent neurons. J Neurosci Methods 139:61-8, 2004
55. Fuchs A, Stucky C, Abram SE, Hogan QH. Painful nerve injury decreases resting cytosolic calcium levels in sensory neurons of rats. Anesthesiology 102:1217-1225, 2005 (June)
56. Sapunar D, Ljubkovic M, Lirk P, McCallum JB, Hogan QH. Distinct Membrane Effects of Spinal Nerve Ligation on Injured and Adjacent Dorsal Root Ganglion Neurons in Rats. Anesthesiology 103:360-76, 2005 (Aug)
57. Sapunar D, Modric-Jednacak K, Grkovic I, Michalkiewicz M, Hogan QH. Effect of peripheral axotomy on pain related behaviour and dorsal root ganglion neuron excitability in NPY transgenic rats. Brain Res 1063: 48-58, 2005 (Nov)
58. Feigl G, Fuchs A, Hogan QH, Weninger B, Rosmarin W. A supraomohyoidal plexus block designed to avoid complications. Surg Radiol Anat 2006 (June, Epub ahead of print)
59. McCallum JB, Kwok WM, Sapunar D, Hogan QH. Painful peripheral nerve injury decreases calcium current in axotomized and adjacent sensory neurons. Anesthesiology 105:160-168, 2006 (July)
60. Abram SE, Yi J, Fuchs A, Hogan QH. Permeability of injured and intact peripheral nerves and dorsal root ganglia. Anesthesiology 105:146-153, 2006 (July)
61. Sarantopoulos C, McCallum JB, Rigaud M, Fuchs A, Kwok WM, Hogan QH. Opposing effects of spinal nerve ligation on calcium-activated potassium currents in axotomized and adjacent intact mammalian primary afferent neurons. Brain Research 1132:84-99, 2007 (Feb)
62. Hogan QH. Role of Decreased Sensory Neuron Membrane Calcium Currents in the Genesis of Neuropathic Pain. Croat Med J 48: 9-21, 2007 (Feb)
63. Znaor L, Lovric S, Hogan Q, Sapunar D: Association of neural inflammation with hyperalgesia following spinal nerve ligation. Croat Med J 48: 35-42, 2007 (Feb)
64. Fuchs A, Rigaud M, Hogan QH. Painful peripheral nerve injury shortens the intracellular Ca2+ signal in sensory neurons of rats. Anesthesiology 107: 106-116, 2007 (July)
65. Fuchs A, Rigaud M, Sarantopoulos CD, Hogan QH, Contribution of calcium channel subtypes to the intracellular calcium signal in sensory neurons: the effect of injury. Anesthesiology 107: 117-27, 2007

(July)
66. Rigaud M, Gemes G, Barabas ME, Chernoff DI, Abram SE, Stucky CL, Hogan QH. Species and Strain Differences in Rodent Sciatic Nerve Anatomy: Implications for Studies of Neuropathic Pain. Pain 136: 188-201, 2008. PMCID:2700063
67. Hogan QH, Poroli, M. Hyperpolarization-activated current (Ih) contributes to excitability of primary sensory neurons in rats. Brain Research 1207:102-110, 2008. PMCID:2745653
68. Lirk P, Poroli M, Rigaud M, Fuchs A, Filip P, Huang C-Y, Ljubkovic M, Sapunar D, Hogan QH. Modulators of Calcium Influx Regulate Membrane Excitability in Rat Dorsal Root Ganglion Neurons. Anesthesia & Analgesia 107(2):673-685, 2008. PMCID:2872162
69. Hogan QH, Lirk P, Poroli M, Rigaud M, Fuchs A, Filip P, Ljubkovic M, Gemes G, Sapunar D. Restoration of Calcium Influx Corrects Membrane Hyperexcitability in Injured Rat Dorsal Root Ganglion Neurons. Anesthesia & Analgesia 107: 1045-51, 2008 (September). PMCID:2700057
70. Hogan QH. Pathophysiology of peripheral nerve injury during regional anesthesia. Reg Anesth Pain Med 33: 435-41, 2008
71. Neal JM, Bernards CM, Hadzic A, Hebl JR, Hogan QH, Horlocker TT, Lee LA, Rathmell JP, Sorenson EJ, Suresh S, Denise J. Wedel, DJ. ASRA practice advisory on neurologic complications of regional anesthesia and pain medicine. Reg Anesth Pain Med 33: 404-15, 2008. (PMCID: PMC2869280)
72. Rigaud R, Filip P, Lirk P, Fuchs A, Gemes G, Hogan QH. Guidance of Block Needle Insertion by Electrical Nerve Stimulation: the Resulting Distribution of Injected Solution in Dogs. Anesthesiology 109:473-8, 2008. (PMCID: PMC2700062)
73. Puljak L, Kojundzic SL, Hogan QH, Sapunar D. Targeted delivery of pharmacological agents into rat dorsal root ganglion. J Neurosci Methods 177:397-402, 2009. PMCID:2873081
74. Puljak L, Kojundzic SL, Hogan QH, Sapunar D. Lidocaine injection into the rat dorsal root ganglion causes neuroinflammation. Anesth Analg 108:1021-1026, 2009. PMCID:2869284
75. Kawano T, Zoga V, Kimura M, Liang MY, Wu HE, Gemes G, McCallum JB, Kwok WM, Hogan QH, Sarantopoulos CD: Nitric oxide activates ATP-sensitive potassium channels in mammalian sensory neurons: action by direct S-nitrosylation. Mol Pain 2009; 5: 12. PMCID:2673211
76. Rigaud, M Gemes G, Weyker PD, Cruikshank JM, Kawano T, Wu H-E, Hogan QH. Axotomy depletes intracellular calcium stores in primary sensory neurons. Anesthesiology 2009; 111: 381-92
77. Gemes G, Rigaud M, Weyker PD, Abram SE, Weihrauch D, Poroli M, Zoga V, Hogan QH. Depletion of calcium stores in injured sensory neurons: Anatomic and functional correlates. Anesthesiology 2009; 111: 393-405
78. Kawano T, Zoga V, McCallum JB, Wu HE, Gemes G, Liang MY, Abram S, Kwok WM, Hogan QH, Sarantopoulos CD: ATP-sensitive potassium currents in rat primary afferent neurons: biophysical, pharmacological properties, and alterations by painful nerve injury. Neuroscience 2009; 162: 431-43
79. Hogan KJ, Burmester JK, Caldwell MD, Hogan QH, Coursin DB, Green DN, Selzer RMR, Broderick TP, Rusy DA, Poroli M, Lutz AL, Sanders AM, Oldenburg MC, Koelbl JA, Arruda-Indig M, Halsey JL, Day SP, Domanico MJ. Perioperative genomic profiles using structure-specific oligonucleotide probes. Clin Med Res 2009; 7: 69-84. PMCID:2757430
80. Kawano T, Zoga V, Gemes G, McCallum JB, Wu HE, Pravdic D, Liang MY, Kwok WM, Hogan Q, Sarantopoulos C: Suppressed Ca2+/CaM/CaMKII-dependent K(ATP) channel activity in primary afferent neurons mediates hyperalgesia after axotomy. Proc Natl Acad Sci U S A 2009; 106: 8725-30. PMCID:2681318
81. Neal JM, Gerancher JC, Hebl JR, Ilfeld BM, McCartney CJ, Franco CD, Hogan QH: Upper extremity regional anesthesia: essentials of our current understanding, 2008. Reg Anesth Pain Med 2009; 34: 134-70. PMCID:2779737
82. Gemes G, Rigaud M, Dean C, Hopp FA, Hogan QH, Seagard J. Baroreceptor reflex is suppressed in rats that develop hyperalgesia behavior after nerve injury. Pain 2009, 146: 293-300. PMCID:2881469
83. Wu H-E, Gemes G, Zoga V, Kawano T, Hogan QH. Learned avoidance from noxious mechanical stimulation but not threshold Semmes Weinstein filament stimulation after nerve injury in rats. J Pain 2010, 11: 280-286. PMCID: 2891524
84. Kojundzic SL, Puljak L, Hogan Q, Sapunar, D. Depression of Ca(2+)/calmodulin-dependent protein kinase II in dorsal root ganglion neurons after spinal nerve ligation. J Comp Neurol 2010, 518: 64-74. PMID:19882720
85. Zoga, V, Kawano T, Liang MY, Bienengraber M, Wehrauch D, McCallum B, Gemes G, Hogan QH, Sarantopoulos C. KATP channel subunits in rat dorsal root ganglia: alterations by painful axotomy. Mol Pain 2010, 6: 6. PMCID: 2825500

86. Vilceanu D, Honore P, Hogan QH, Stucky CL. Spinal nerve ligation in mouse upregulates TRPV1 heat function in injured IB4-positive nociceptors. J Pain 2010, 11:588-99. PMCID: 2879455
87. Gemes G, Rigaud M, Koopmeiner A, Poroli MJ, Zoga V, Hogan QH. Calcium signaling in intact dorsal root ganglia: new observations and the effect of injury. Anesthesiology 2010, 113 (1): 134-46
88. Hogan, QH. Labat lecture: The primary sensory neuron: where it is, what it does, and why it matters. Reg Anesth Pain Med 2010, 35: 306-11. PMCID: 2885292
89. Rigaud M, Gemes G, Abram SE, Dean C, Hopp FA, Stucky CL, Eastwood D, Tarima S, Seagard J, Hogan QH. Pain tests provoke modality-specific cardiovascular responses in awake, unrestrained rats. Pain 2011,152:274-284. PMCID: 3022106
90. McCallum, JB, Wu H-E, Tang Q, Kwok W-M, Hogan QH. Subtype-specific reduction of voltage-gated calcium current in medium-sized dorsal root ganglion neurons after painful peripheral nerve injury. Neuroscience 2011, 179: 244-255. PMCID: 3209503
91. Gemes G, Bangaru ML, Wu HE, Tang Q, Weihrauch D, Koopmeiners AS, Cruikshank JM, Kwok WM, Hogan QH. Store-operated Ca2+ entry in sensory neurons: functional role and the effect of painful nerve injury. Journal of Neuroscience 2011, 31: 3536-3549. PMCID: 3565463
92. Fischer G, Kostic S, Nakai H, Park F, Sapunar D, Yu H, Hogan Q. Direct injection into the dorsal root ganglion: Technical, behavioral, and histological observations. J Neuroscience Methods 2011, 199: 43-55. PMCID:3742008
93. Yu H, Fischer G, Jia G, Reiser J, Park F, Hogan QH. Lentiviral gene transfer into the dorsal root ganglion of adult rats. Mol Pain 2011, 7:63. PMCID: 3179738
94. Lirk P, Birmingham B, Hogan Q. Regional anesthesia in patients with preexisting neuropathy. Int Anesthesiol Clin 2011, 49:144-165. PMID:21956084
95. Tseng LF, Hogan QH, Wu HE. (+)-Morphine attenuates the (-)-morphine-produced tail-flick inhibition via the sigma-1 receptor in the mouse spinal cord. Life Sci 2011, 89:875-877. PMCID: 3220751
96. Gemes G, Oyster KD, Pan B, Wu H-E, Bangaru MLY, Tang Q, Hogan QH. Painful Nerve Injury Increases Plasma Membrane Ca2+-ATPase Activity in Axotomized Sensory Neurons. Molecular Pain 2012, 8:46. PMCID: 3481352
97. Bangaru ML, Park F, Hudmon A, McCallum JB, Hogan QH. Quantification of gene expression after painful nerve injury: validation of optimal reference genes. J Mol Neurosci 2012, 46:497-504. PMCID: 3273664
98. Tang Q, Bangaru MLY, Wu H-E, Koopmeiners AS, Kostic S, Pan B, Yu H, Fischer GJ, McCallum JB, Kwok W-M, Hudmon A, Hogan QH. Ca2+-dependent Regulation of Ca2+ Currents in Rat Primary Afferent Neurons: Role of CaMKII and the Effect of Injury. Journal of Neuroscience 2012, 32:11737-11749. PMID: 22915116, NIHMS403439 (PMCID pending)
99. Duncan C, Mueller S, Hogan Q, Wu H-E. Painful Nerve Injury Decreases Sarco-Endoplasmic Reticulum Ca2+-ATPase activity in Axotomized Sensory Neurons. Neuroscience 2013, 231:247-257. PMID: 23219911. PMCID: PMC3715030
100. Gemes G, Koopmeiners A, Rigaud M, Lirk P, Sapunar D, Bangaru ML, Vilceanu D, Garrison SR, Ljubkovic M, Mueller SJ, Stucky CL, Hogan QH. Failure of Action Potential Propagation in Sensory Neurons: Mechanisms and Loss of Afferent Filtering in C-type Units after Painful Nerve Injury. J Physiology 2013, 591:1111-1131. PMID: 23148321. PMCID:3591718
101. Koopmeiners A, Mueller S, Kramer J, Hogan QH. Effect of electrical field stimulation on dorsal root ganglion neuronal function. Neuromodulation 2013, 16: 304-311. (PMCID pending)
102. Yu H, Fischer G, Ferhatovic L, Fan F, Light AR, Weihrauch D, Sapunar D, Nakai H, Park F, Hogan QH. Intraganglionic AAV6 results in efficient and long-term gene transfer to peripheral sensory nervous system in adult rats. PLoS ONE 2013, 8(4): e61266. doi:10.1371/journal.pone.0061266, PMCID: 3628918
103. Bangaru ML, Weihrauch D, Tang Q, Zoga V, Hogan QH, Wu H. Sigma-1 receptor expression in sensory neurons and the effect of painful peripheral nerve injury 2013, Molecular Pain 9:47.
104. Fischer G, Pan B, Vilceanu D, Hogan QH, Yu H. Sustained relief of neuropathic pain by AAV-targeted expression of CBD peptide in rat dorsal root ganglion. Gene Therapy 2014, 21:44-51.
105. Pan B, Guo Y, Kwok W-M, Hogan QH, Wu H-E. Sigma-1 receptor antagonism restores injury-induced decrease of voltage-gated Ca2+ current in sensory neurons. JPET 2014, 350:290-300.
106. Kostic S, Pan B, Guo Y Yu H, Sapunar D, Kwok W-M, Hudmon A, Wu, H-E, Hogan, QH. Regulation of voltage-Gated Ca2+ currents by Ca2+ /calmodulin-dependent protein kinase II in resting sensory neurons. Molecular and Cellular Neuroscience 2014, 62:10-18. PMCID: PMC4187344
107. Hogan QH, Sprick C, Guo Y, Mueller S, Bienengraeber M, Pan B, Wu HE. Divergent effects of painful

nerve injury on mitochondrial Ca2+ buffering in axotomized and adjacent sensory neurons. Brain Res 2014, 1589: 112-125. PMCID: PMC4254330
108. Pan B, Yu H, Park J, Yu Y, Luo ZD, Hogan QH. Painful nerve injury upregulates thrombospondin-4 expression in dorsal root ganglia, Journal of Neuroscience Research 2015, 93(3): 443-453. PMCID: PMC4293337
109. Yu H, Fischer G, Ebert AD, Wu H-E, Bai X, Hogan QH. Analgesia for neuropathic pain by dorsal root ganglion transplantation of genetically engineered mesenchymal stem cells: initial results. Molecular Pain 2015, 11:5.
110. Bangaru M, Meng J, Kaiser DJ, Yu H, Fischer G, Hogan Q, Hudmon A. Differential expression of CaMKII isoforms and overall kinase activity in rat dorsal root ganglia after injury. Neuroscience 2015, 300: 116-127. PMCID 4485599
111. Yu H, Pan B, Weyer A, Wu H-E, Meng J, Fischer G, Vilceanu D, Light AR, Stucky C, Rice FL, Hudmon A, Hogan QH. CaMKII controls whether touch is painful. Journal of Neuroscience 2015, 35: 14086 -14102.
112. Yu H, Fischer G, Hogan QH. Ch. 18: AAV-mediated gene transfer to the dorsal root ganglion. In Fredric P. Manfredsson (ed.), Gene Therapy for Neurological Disorders: Methods and Protocols, Methods in Molecular Biology 2016, 1382: 251-61.
113. Liu Z., Wang F, Fischer G, Hogan QH, Yu H. "Peripheral nerve injury induces loss of nociceptive neuron-specific Galphai-interacting protein in neuropathic pain rat." Mol Pain, 2016, 12.
114. Heschl S, Hallmann B, Zilke T, Gemes G, Schoerghuber M, Auer-Grumbach M, Quehenberger F, Lirk P, Hogan Q, Rigaud, M. "Diabetic neuropathy increases stimulation threshold during popliteal sciatic nerve block." Br J Anaesth 2016, 116(4): 538-545.
115. Dean C, Hillard CJ, Seagard JL, Hopp FA, Hogan, QH. "Components of the Cannabinoid System in the Dorsal Periaqueductal Gray Are Related to Resting Heart Rate." Am J Physiol Regul Integr Comp Physiol: 2016, ajpregu 00154 02016.
116. Pan B, Guo Y, Wu HE, Park J, Trinh VN. Luo ZD, Hogan QH. "Thrombospondin-4 divergently regulates voltage gated Ca2+ channel subtypes in sensory neurons after nerve injury." Pain. (in press, 2016)
117. Wang F, Xiang H, Fischer G, Liu Z, Dupont MJ, Hogan QH, Yu H. "HMG-CoA synthase isoenzymes 1 and 2 localize to satellite glial cells in dorsal root ganglia and are differentially regulated by peripheral nerve injury." Brain Research. (in press, 2016)
118. Pan G, Yu H, Fischer GJ, Kramer JM, Hogan QH. "Dorsal root ganglionic field stimulation relieves both spontaneous and induced neuropathic pain in rats." J Pain. (in press, 2016)
119. Xiang H, Xu H, Fan F, Shin SM, Hogan QH, Yu H. Glial fibrillary acidic protein promoter determines transgene expression in satellite glial cells following intraganglionic adeno-associated virus delivery in adult rats. J Neurosci Res. 2018 Mar;96(3):436-448. PMCID: PMC5766685
120. Pan B, Zhang Z, Chao D, Hogan QH. Dorsal Root Ganglion Field Stimulation Prevents Inflammation and Joint Damage in a Rat Model of Rheumatoid Arthritis. Neuromodulation. 2018 Apr;21(3):247-253.
121. Fischer G, Wang F, Xiang H, Bai X, Yu H, Hogan QH. Inhibition of neuropathic hyperalgesia by intrathecal bone marrow stromal cells is associated with alteration of multiple soluble factors in cerebrospinal fluid. Exp Brain Res. 2017 Sep;235(9):2627-2638. PMCID: PMC6688185
122. Guo Y, Zhang Z, Wu HE, Luo ZD, Hogan QH, Pan B. Increased thrombospondin-4 after nerve injury mediates disruption of intracellular calcium signaling in primary sensory neurons. Neuropharmacology. 2017 May 01;117:292-304. PMCID: PMC5414309
123. Dean C, Hillard CJ, Seagard JL, Hopp FA, Hogan QH. Upregulation of fatty acid amide hydrolase in the dorsal periaqueductal gray is associated with neuropathic pain and reduced heart rate in rats. Am J Physiol Regul Integr Comp Physiol. 2017 Apr 01;312(4):R585-R596. PMCID: PMC6668034
124. Pawela CP, Kramer JM, Hogan QH. Dorsal root ganglion stimulation attenuates the BOLD signal response to noxious sensory input in specific brain regions: Insights into a possible mechanism for analgesia. Neuroimage. 2017 Feb 15;147:10-18.
125. Wu HE, Gemes G, Hogan QH. Recording SOCE Activity in Neurons by Patch-Clamp Electrophysiology and Microfluorometric Calcium Imaging. Methods Mol Biol. 2018;1843:41-53.
126. Kent AR, Min X, Hogan QH, Kramer JM. Mechanisms of Dorsal Root Ganglion Stimulation in Pain Suppression: A Computational Modeling Analysis. Neuromodulation. 2018 Apr;21(3):234-246.
127. Yu H, Shin SM, Wang F, Xu H, Xiang H, Cai Y, Itson-Zoske B, Hogan QH. Transmembrane protein 100 is expressed in neurons and glia of dorsal root ganglia and is reduced after painful nerve injury. Pain Rep. 2019;4(1):e703. PMCID: PMC6370145
128. Yu H, Shin SM, Xiang H, Chao D, Cai Y, Xu H, Khanna R, Pan B, Hogan QH. AAV-encoded

Ca_V2.2 peptide aptamer CBD3A6K for primary sensory neuron-targeted treatment of established neuropathic pain. Gene Ther. 2019 Aug;26(7-8):308-323. PMCID: PMC6707887
129. Yu H, Shin SM, Wang F, Xu H, Xiang H, Cai Y, Itson-Zoske B, Hogan QH. Transmembrane protein 100 is expressed in neurons and glia of dorsal root ganglia and is reduced after painful nerve injury. Pain Rep. 2019;4(1):e703. PMCID: PMC6370145
130. Shin SM, Wang F, Qiu C, Itson-Zoske B, Hogan QH, Yu H. Sigma-1 receptor activity in primary sensory neurons is a critical driver of neuropathic pain. Gene Ther. 2022 Feb;29(1-2):1-15. PMCID: PMC7671947
131. Chao D, Zhang Z, Mecca CM, Hogan QH, Pan B. Analgesic dorsal root ganglionic field stimulation blocks conduction of afferent impulse trains selectively in nociceptive sensory afferents. Pain. 2020 Dec;161(12):2872-2886. PMCID: PMC7669706
132. Shin SM, Itson-Zoske B, Cai Y, Qiu C, Pan B, Stucky CL, Hogan QH, Yu H. Satellite glial cells in sensory ganglia express functional transient receptor potential ankyrin 1 that is sensitized in neuropathic and inflammatory pain. Mol Pain. 2020;16:1744806920925425. PMCID: PMC7268132
133. Yu G, Segel I, Zhang Z, Hogan QH, Pan B. Dorsal Root Ganglion Stimulation Alleviates Pain-related Behaviors in Rats with Nerve Injury and Osteoarthritis. Anesthesiology. 2020 Aug;133(2):408-425. PMCID: PMC8195267
134. Wang SM, Goguadze N, Kimura Y, Yasui Y, Pan B, Wang TY, Nakamura Y, Lin YT, Hogan QH, Wilson KL, Su TP, Wu HE. Genomic Action of Sigma-1 Receptor Chaperone Relates to Neuropathic Pain. Mol Neurobiol. 2021 Jun;58(6):2523-2541. PMCID: PMC8128747
135. Shin SM, Cai Y, Itson-Zoske B, Qiu C, Hao X, Xiang H, Hogan QH, Yu H. Enhanced T-type calcium channel 3.2 activity in sensory neurons contributes to neuropathic-like pain of monosodium iodoacetate-induced knee osteoarthritis. Mol Pain. 2020;16:1744806920963807. PMCID: PMC7570798
136. Wang SM, Goguadze N, Kimura Y, Yasui Y, Pan B, Wang TY, Nakamura Y, Lin YT, Hogan QH, Wilson KL, Su TP, Wu HE. Correction to: Genomic Action of Sigma-1 Receptor Chaperone Relates to Neuropathic Pain. Mol Neurobiol. 2021 Jun;58(6):2542. PMCID: PMC8496664
137. Feng Y, Li K, Roth E, Chao D, Mecca CM, Hogan QH, Pawela C, Kwok WM, Camara AKS, Pan B. Repetitive Mild Traumatic Brain Injury in Rats Impairs Cognition, Enhances Prefrontal Cortex Neuronal Activity, and Reduces Pre-synaptic Mitochondrial Function. Front Cell Neurosci. 2021;15:689334. PMCID: PMC8383341
138. Sherman K, Woyach V, Eisenach JC, Hopp FA, Cao F, Hogan QH, Dean C. Heterogeneity in patterns of pain development after nerve injury in rats and the influence of sex. Neurobiol Pain. 2021;10:100069. PMCID: PMC8339380
139. Shin SM, Moehring F, Itson-Zoske B, Fan F, Stucky CL, Hogan QH, Yu H. Piezo2 mechanosensitive ion channel is located to sensory neurons and nonneuronal cells in rat peripheral sensory pathway: implications in pain. Pain. 2021 Nov 01;162(11):2750-2768. PMCID: PMC8526381
140. Mecca CM, Chao D, Yu G, Feng Y, Segel I, Zhang Z, Rodriguez-Garcia DM, Pawela CP, Hillard CJ, Hogan QH, Pan B. Dynamic Change of Endocannabinoid Signaling in the Medial Prefrontal Cortex Controls the Development of Depression After Neuropathic Pain. J Neurosci. 2021 Sep 01;41(35):7492-7508. PMCID: PMC8412994
141. Yu G, Segel I, Tran H, Park HJ, Ross E, Hogan QH, Pan B. Analgesic Effects of Tonic and Burst Dorsal Root Ganglion Stimulation in Rats With Painful Tibial Nerve Injury. Neuromodulation. 2022 Oct;25(7):970-979. PMCID: PMC8645661
142. Saber M, Schwabe D, Park HJ, Tessmer J, Khan Z, Ding Y, Robinson M, Hogan QH, Pawela CP. Tonic, Burst, and Burst Cycle Spinal Cord Stimulation Lead to Differential Brain Activation Patterns as Detected by Functional Magnetic Resonance Imaging. Neuromodulation. 2021 Jun 02.
143. Chao D, Mecca CM, Yu G, Segel I, Gold MS, Hogan QH, Pan B. Dorsal root ganglion stimulation of injured sensory neurons in rats rapidly eliminates their spontaneous activity and relieves spontaneous pain. Pain. 2021 Dec 01;162(12):2917-2932. PMCID: PMC8486885
144. Woyach V, Sherman K, Hillard CJ, Hopp FA, Hogan QH, Dean C. Fatty acid amide hydrolase activity in the dorsal periaqueductal gray attenuates neuropathic pain and associated dysautonomia. Am J Physiol Regul Integr Comp Physiol. 2022 Nov 01;323(5):R749-R762. PMCID: PMC9639763
145. Chao D, Tran H, Hogan QH, Pan B. Analgesic dorsal root ganglion field stimulation blocks both afferent and efferent spontaneous activity in sensory neurons of rats with monosodium iodoacetate-induced osteoarthritis. Osteoarthritis Cartilage. 2022 Nov;30(11):1468-1481. PMCID: PMC9588581
146. Itson-Zoske B, Shin SM, Xu H, Qiu C, Fan F, Hogan QH, Yu H. Selective block of sensory neuronal T-

type/Cav3.2 activity mitigates neuropathic pain behavior in a rat model of osteoarthritis pain. Arthritis Res Ther. 2022 Jul 16;24(1):168. PMCID: PMC9287929

147. Shin SM, Lauzadis J, Itson-Zoske B, Cai Y, Fan F, Natarajan GK, Kwok WM, Puopolo M, Hogan QH, Yu H. Targeting intrinsically disordered regions facilitates discovery of calcium channels 3.2 inhibitory peptides for adeno-associated virus-mediated peripheral analgesia. Pain. 2022 Dec 01;163(12):2466-2484. PMCID: PMC9562599
148. Saber M, Schwabe D, Park HJ, Tessmer J, Khan Z, Ding Y, Robinson M, Hogan QH, Pawela CP. Tonic, Burst, and Burst-Cycle Spinal Cord Stimulation Lead to Differential Brain Activation Patterns as Detected by Functional Magnetic Resonance Imaging. Neuromodulation. 2022 Jan;25(1):53-63.
149. Roberts CJ, Hopp FA, Hogan QH, Dean C. Anandamide in the dorsal periaqueductal gray inhibits sensory input without a correlation to sympathoexcitation. Neurobiol Pain. 2022;12:100104. PMCID: PMC9755024
150. Tran H, Feng Y, Chao D, Liu QS, Hogan QH, Pan B. Descending mechanism by which medial prefrontal cortex endocannabinoid signaling controls the development of neuropathic pain and neuronal activity of dorsal root ganglion. Pain. 2024 Jan 01;165(1):102-114. PMCID: PMC10787817
151. Waltz TB, Chao D, Prodoehl EK, Ehlers VL, Dharanikota BS, Dahms NM, Isaeva E, Hogan QH, Pan B, Stucky CL. Schwann cell release of p11 induces sensory neuron hyperactivity in Fabry disease. bioRxiv. 2023 May 28. PMCID: PMC10245981
152. Shin SM, Itson-Zoske B, Fan F, Gani U, Rahman M, Hogan QH, Yu H. Peripheral sensory neurons and non-neuronal cells express functional Piezo1 channels. Mol Pain. 2023;19:17448069231174315. PMCID: PMC10240879

Books, Chapters, and Reviews

1. Abram S, Hogan QH. Complications of nerve blocks. In Benumof J, Saidman L (eds.) Anesthesia and Perioperative Complications. Mosby - Year Book, St. Louis, 1992, pp.52-76.
2. Hogan QH. Ch. 26: Stellate ganglion. In: Regional Anesthesia, an Atlas of Anatomy and Techniques. Hahn M, McQuillan PM, Sheplock GJ Eds. Mosby, St.Louis, 1996, pp169-173
3. Hogan QH. Ch. 30: Spinal Anatomy. In: Regional Anesthesia, an Atlas of Anatomy and Techniques. Hahn M, McQuillan PM, Sheplock GJ Eds. Mosby, St.Louis, 1996, pp205-212
4. Hogan QH. Ch. 31: Epidural. In: Regional Anesthesia, an Atlas of Anatomy and Techniques. Hahn M, McQuillan PM, Sheplock GJ Eds. Mosby, St.Louis, 1996, pp213-220
5. Hogan QH. A reexamination of anatomy in regional anesthesia. In D. Brown (ed.) Regional Anesthesia, WB Saunders, Philadelphia. 1996, pp50-83.
6. Hogan QH, Abram S. Nerve blocks for diagnosis and prognosis. In M Cousins and P Bridenbaugh (eds.) Neural Blockade, 3rd Ed, Lippincott, Philadlphia, 1997.
7. Hogan QH. Injection for diagnosis and therapy of back disease. In H. An (ed.) Principles and Techniques of Spine Surgery. Williams and Wilkins, Baltimore. Pp. 707-29, 1998.
8. Hogan QH, Riley L. Back pain. In Atlas of Anesthesia (RD Miller, ed.), Vol VI Pain Management (SE Abram, ed.) Current Medicine, Philadelphia, 1998.
9. Hogan QH. Neural blockade for diagnosis and treatment of painful conditions. In. Ashburn MA and Rice LJ (eds.) The Management of Pain. Churchill Livingstone, New York. pp275-298, 1998
10. Hogan QH, Hendrix L, Jaradeh S. Evaluation of neurologic injury after regional anesthesia. In BT Finucane (ed.) Complications of Regional Anesthesia. Churchill Livingstone, New York. 1999, pp271-291
11. Hogan QH. Anatomy of the epidural space. Norris M (ed.), Obstetric Anesthesia. 2nd Ed. Lippincott Williams and Wilkins, Philadelphia, 1999
12. Hogan QH. Gross anatomy of the human vertebral column. Yaksh T (ed.) Spinal Drug Delivery. Elsevier, Amsterdam, 1999, pp97-113
13. Hogan QH. Postoperative peripheral neuropathy. Atlee JL(ed.). Complications in Anesthesia. WB Saunders, Philadelphia, 1999.
14. Hogan QH. Back pain. In. Abram SE (ed.) Pain Clinic Manual. Lippincott Williams and Wilkins, 2000
15. Hogan QH. Diagnostic and prognostic neural blockade In. Abram SE (ed.) Pain Clinic Manual. Lippincott Williams and Wilkins, 2000
16. Hogan Q. Diagnostic injection. In Turk DC and Melzack R. Handbook of Pain Assessment. Guilford Press, New York, 2001, pp225-247
17. Hogan QH. Local Anesthetics. In A. Fassoulaki (ed.) Anesthesiology. Athens, Greece, 2005, pp. 117-133.
18. Hogan QH. Autonomic Nervous System. In A Fassoulaki (ed.) Anesthesiology. Athens, Greece, 2005, pp. 199-213.

19. Hogan QH. Regional Anesthesia. In A Fassoulaki (ed.) Anesthesiology. Athens, Greece, 2005, pp. 532-561.
20. Lirk P, Hogan Q. Spinal and Epidural Anatomy. In C Wong (ed.) Spinal and Epidural Anesthesia. McGraw-Hill, New York. 2007, pp. 1-25.
21. Hogan, QH. Myotoxicity. In JM Neal and JP Rathmell (ed.s) Complications in Regional Anesthesia and Pain Medicine. Saunders, Philadelphia. 2007, pp. 141-146.
22. Hogan QH, Hendrix L, Jaradeh S. Ch. 22: Evaluation of neurologic injury after regional anesthesia. In BT Finucane (ed.) Complications of Regional Anesthesia. 2nd ed., Churchill Livingstone, New York. 2007, pp 386-409
23. Ummenhofer W, Gabrielli A, Hogan QH, Soreide E, Zuercher M. Cardiac arrest during anesthesia. In Paradis NA, Halperin HR, Kern KB, Wenzel V, and Chamberlain DA (eds.) Cardiac Arrest, 2nd ed. Cambridge University Press, Cambridge UK, 2007, pp1043-1075.
24. Hogan QH. Ch. 9:Anatomy of the neuraxis. In M Cousins and P Bridenbaugh (eds.) Neural Blockade, 4th Ed, Lippincott, Philadelphia, 2009.
25. Hogan QH, Abram S. Ch. 38: Diagnostic and prognostic neural blockade. In M Cousins and P Bridenbaugh (eds.) Neural Blockade, 4th Ed, Lippincott, Philadelphia, 2009.
26. Hogan QH. Myotoxicity. In JM Neal and JP Rathmell (ed.s) Complications in Regional Anesthesia and Pain Medicine, 2nd Ed. Saunders, Philadelphia. 2013, pp. 170-176.
27. Hogan QH, McCollister K, Harmelink M, Kohl L, Collins M. Ch. 7: Evaluation of neurologic injury following regional anesthesia. In BT Finucane and CH Tsui (eds.) Complications of Regional Anesthesia. 3rd ed., Churchill Livingstone, New York. 2017, pp 113-137.

Editorials, Letters to Editor, Other

1. Invited Editorials
2. Hogan Q, Abram S. Epidural steroids and the outcomes movement. Pain Digest 1:269-270, 1992.
3. Hogan Q. The sympathetic nervous system in post-herpetic neuralgia. Reg Anesth 18:271-273, 1993.
4. Hogan Q., Haughton V. Posterior lumbar epidural fat as a functional structure; Point of view. Spine 22: 1269, 1997
5. Hogan Q. Back pain: beguiling physiology (and politics). Reg Anesth 22:395-399, 1997
6. Hogan Q. No Preemptive Analgesia: Is that so bad? Anesthesiology 96:526-7, 2002
7. Hogan Q. Finding nerves is not simple. Reg Anesth Pain Med 28:367-71, 2003
8. Hogan Q. Trying to understand spinal anesthesia. Can J Anaesth 2007;54:607-12.
9. Hogan Q, Mark L. Subdural injection: what's the gold standard. Reg Anesth Pain Med 2009; 34: 10-1. (PMCID: PMC2872160)
10. Abram SE, Hogan QH. Avoiding catastrophic complications from epidural steroid injections. Anesthesia Patient Safety Foundation Newsletter, pp 8-9, Spring/Summer 2011
11. Hogan QH. Phrenic nerve function after interscalene block revisited: now, the long view. Anesthesiology 2013; 119:250-252.
12. Letters to Editor
13. Hogan Q. Reply to the letter of Cherry, Plummer and Gourlay. Pain 48:469, 1992.
14. Hogan Q. The true epidural space: possible consequences for administered material-based drug delivery systems. Anesthesiology 76: 866, 1992.
15. Hogan Q. Reply to the letter of Korsten et al. Anesthesiology
16. Hogan Q. Loculated? Encapsulated? Indented? Pain 52:371-372, 1993.
17. Hogan Q. "Migration" of an epidural catheter? Anesth Analg 76:910-1, 1993.
18. Hogan Q, Mark L. Were they subdural injections? Anesthesiology 78:605-606, 1993.
19. Hogan Q. The cardiac risks of non-cardiac surgery. JAMA 269:2083, 1993
20. Olson E, Hogan Q, Abram S. Local clonidine vasoconstriction. Pain 54:361, 1993
21. Hogan Q. Tuffier's line: the normal distribution of anatomic parameters. Anesth Analg 78:194, 1994.
22. Hogan Q. Venous Capacitance Changes in the Lower Extremities During Spinal Anesthesia. Reg Anesth 21:376-377, 1996
23. Hogan Q. Reply to Dr. Carrero. Reg Anesth Pain Med 29:70, 2004
24. Hogan, QH. Re: Most reported subdural injections are not in the subdural space, they are intradural; Reply to Dr. Collier. Reg Anesth Pain Med 2010, 35: 117
25. Hogan, QH. Re: Phrenic nerve function after interscalene block revisited: now, the long view; Reply to Bellew et al. Anesthesiology 2014, 120: 1057-1058
26. NON-REFEREED JOURNAL PUBLICATIONS/ORIGINAL PAPERS: NA

Abstracts

1. Hogan Q. Erickson S. Imaging of the stellate ganglion with MR: the spread of injected solution. Regional Anesthesia 15:S58, 1991.
2. Hogan Q, Weissman D, Haddox D, Abram S, Taylor ML, Janjan N. Epidural opiates and local anesthetics for the management of cancer pain. Proc. Am Soc Clin Onc 1991.
3. Hogan Q. Lumbar epidural anatomy: a new look by cryomicrotome section. Anesthesiology 75:A716, 1991.
4. Hogan Q, Taylor ML, Goldstein M. "Successful" sympathetic blockade after "stellate ganglion" blockade. American Pain Society, San Diego, Oct 23,1992.
5. Hogan Q. Lumbar epidural anatomy: Human cadavers examined by cryomicrotome section. Medical College of Wisconsin Anesthesia Update, Copper Mountain, Colo, Feb. 1993.
6. Hogan Q. Stadnicka A, Stekiel T, Bosnjak Z, Kampine JP. Epidural blockade decreases rabbit sympathetic efferent nerve activity (SENA) and dilates mesenteric veins. FASEB 7:A779, 1993.
7. Stadnicka A, Hogan Q, Stekiel T, Bosnjak Z, Kampine JP. Dose-dependent effects of lidocaine in isolated small mesenteric veins of the rabbit. Reg Anesth 18(S): 89, 1993.
8. Hogan Q, Stadnicka A, Stekiel T, Bosnjak Z, Kampine JP. A new epidural anesthesia (EA) model: hemodynamic responses to graded concentrations of epidural and systemic lidocaine. Reg Anesth 18(S): 48, 1993.
9. Hogan Q, Stadnicka A, Stekiel T, Bosnjak Z, Kampine JP. The response of rabbit sympathetic efferent nerve activity (SENA) and mesenteric vein diameter (VD) to graded concentrations of epidural and IM lidocaine. Reg Anesth 18(S): 47, 1993.
10. Hogan Q, Erickson S. Success rates of sympathetic blockade: CT guided T1 injection vs C6 paratracheal injection. Reg Anesth 18(S): 23, 1993.
11. Grover P, Babus G, Hogan Q. Unilateral epidural block: a new technique. Reg Anesth 18(S): 58, 1993.
12. Hogan Q, Lynch K, Lacitis I. Histologic features of epidural soft tissue and its relation to the dura and canal wall. Reg Anesth 18(S): 54, 1993.
13. Stadnicka A, Hogan Q, Stekiel TA, Bosnjak ZJ, Kampine JP. Inhibitory effect of lidocaine and bupivacaine on endogenous norepinephrine responses in isolated mesenteric capacitance veins of rabbit. FASEB 8:A886, 1994.
14. Stadnicka A, Hogan Q, BosnjakZJ, Kampine JP. Role of potassium channels in hypoxic contraction of rabbit mesenteric veins: effects of volatile anesthetics. Anesthesiology 81:A676, 1994
15. McCallum JB, Hogan Q, Seagard JL, Bosnjak ZJ. The quantitative sensitivity of sympathetic ganglion transmission to volatile anesthetics. Soc for Neuroscience 21, 1565, 1995.
16. Hogan Q, Size of lower thoracic and lumbosacral nerve roots. Reg Anesth 21(Suppl):54, 1996
17. Hogan Q, Prost Robert, Taylor ML, Liu S, Mark L. CSF volume: normal values and influence of body habitus by magnetic resonance imaging. Reg Anesth 21(Suppl):55, 1996
18. Hogan Q, Amuzu J, Kulier A, Bosnjak Z, Kampine J. Sympathetic activity and splanchnic vein responses to decreased FIO2 during epidural anesthesia in rabbits. Reg Anesth 21(Suppl):58, 1996
19. Hogan Q, Amuzu J, Kulier A, Bosnjak Z, Kampine J. Sympathetic activity and splanchnic vein responses to baroreceptor activation during epidural anesthesia. Reg Anesth 21(Suppl):57, 1996
20. Carpenter R, Hogan Q, Liu S, Crane B. Spinal CSF volume is the primary determinate of sensory block height and duration of spinal anesthesia. Anesthesiology 85:A736, 1996
21. McCallum JB, Hogan QH, Bosnjak ZJ. The muscarinic postsynaptic effect of dexmedetomidine (DMT) on sympathetic ganglionic transmission. Soc for Neuroscience Abstr 22: 787, 1996
22. Novalija E, Hogan Q, Kulier A, Bosnjak Z. Minimal effect of thoracic epidural anesthesia on spontaneous postinfarction ventricular dysrhythmia in awake dogs. Reg Anesth 22: S33, 1997
23. Amuzu J, Hogan Q, Bosnjak Z, Kampine JP. Hemodynamic response to hemorrhage during epidural anesthesia in awake rabbits. Aesth Analg 84: S282, 1997
24. Hogan Q, Amuzu J, Clifford P, Bosnjak Z, Kampine JP. Hypoxia causes apnea during epidural anesthesia in rabbits. Reg Anesth 22: S2, 1997
25. Kulier AH, Novalija E, Rakic M, Takahata O, Hogan Q. Suppression of postinfarct ventricular dysrhythmias does not prevent sudden cardiac death in conscious dogs. Anesthesiology 85:A619, 1997
26. McCallum B, Hogan QH, Aason M, Kwok WM, Bosnjak Z. Calcium channel changes in a rat model of peripheral neuropathy. Soc Neuroscience Abstr 23: 1187, 1997
27. McCallum B, Hogan QH, Kwok WM, Bosnjak Z. T-type calcium currents are lost after peripheral nerve injury in the rat. Soc Neuroscience Abstr 24: 83, 1998
28. Kohro S, Hogan QH, Bosnjak ZJ. Mechanism of isoflurane induced myocardial preconditioning. Anesthesiology. 1999;91:A627

29. Kohro S, Hogan Q, Bosnjak Z. Interaction between inhalational and intravenous anesthetics on mitochondrial oxidation associated with cardiac preconditioning. Anesth Analg. 2000;90:S438
30. McCallum JB, Kwok WM, Bosnjak ZJ, Hogan Q. Calcium currents in rat peripheral sensory neurons during neuropathic pain. Anesth Analg 2000; 90:S326 (Best Abstract of Meeting Award)
31. Hogan QH, McCallum JB, Seagard JL. Blockade of Ca2+ current excites dorsal root ganglion (DRG) neurons. Soc Neuroscience Abstr 26:893, 2000
32. Sarantopoulos CD, McCallum JB, Kwok WM, Clifford PS, Hogan QH. Gabapentin decreases membrane voltage-activated calcium currents in injured and intact mammalian DRG neurons. Soc Neuroscience Abstr 26: 1216, 2000
33. McCallum JB, Kwok WM, Bosnjak ZJ, Hogan QH. Neuropathic injury reduces T-type calcium current but not R-type in rats. Soc Neuroscience Abstr 26: 893, 2000
34. Kohro S, Hogan QH, Nakae Y, Bosnjak ZJ. Intracellular signal transduction of isoflurane induced mitochondrial oxidation, implications for preconditioning. Anesthesiology 93:A638, 2000
35. Hogan QH, Kanai A, Sarantopoulos C, McCallum JB, Hopp F. Nerve injury alters gabapentin effects on sensory neuron excitability. Soc Neurosci Abstr, 2001
36. McCallum JB, Kwok WM, Bosnjak ZJ, Hogan QH. Sensory nerve injury results in increased proportion of ICa sensitive to nisoldipine. Soc Neurosci Abstr, 2001
37. Sarantopoulos C, McCallum JB, Kwok WM, Clifford PS, Hogan QH. Glucocorticoid effects on membrane voltage-activated Ca currents in injured and intact mammalian DRG neurons. Soc Neurosci Abstr, 2001
38. Nakae Y, Kohro S, Hogan QH, Bosnjak ZJ. Role of adenosine on mitochondrial ATP-sensitive potassium channel activation with isoflurane. Am Soc Anesthesiology 2001
39. Kanai A, Sarantopoulos C, McCallum JB, Hogan Q. Effect of gabapentin on excitability of injured and control sensory neurons. Am Soc Anesthesiology 2001
40. McCallum JB, Hogan Q. The future of computer-based training (CBT) in anesthesia rotations. MCW Teaching and Technology Fair. 8/2002
41. Sarantopoulos C, McCallum JB, Kwok WM, Bosnjak ZJ, Hogan QH. ATP-sensitive potassium currents in mammalian primary afferent neurons: the effects of neuropathic injury and gabapentin. Society for Neuroscience, 11/2002
42. Sapunar D, Kwok WM, Clifford PS, Hogan QH. ATP-sensitive potassium currents in sensory neurons: influence on excitability. Society for Neuroscience, 11/2002
43. McCallum JB, Jednacak K, Seagard JL, Hogan QH. Loss of ICa in sensory neurons after spinal nerve ligation and sham surgery. Society for Neuroscience, 11/2002
44. Hogan QH, Modric-Jednacak K, Sapunar D, Michalkiewicz M, Bosnjak Z. Sensory responses in transgenic rats with upregulated neuropeptide Y production: effect of peripheral nerve injury. American Pain Society annual meeting, Chicago, 3/2003
45. Sarantopoulos, C, Fassoulaki A, Patris K, Hogan QH, Gabapentin as analgesic after breast surgery for cancer. American Pain Society annual meeting, Chicago, 3/2003
46. C.D. Sarantopoulos, J. McCallum, W. Kwok, Q.H. Hogan. -escin eliminates calcium current rundown in neuronal perforated patch recordings. Program No. 166.5. 2003: Society for Neuroscience, 2003.
47. Q.H. Hogan, D. Sapunar, K. Modric-Jednacak, M. Ljubkovic, J.B. McCallum. Hyperalgesia response but not withdrawal from tactile stimulation identifies neuropathic pain in rats. Program No. 178.3. 2003: Society for Neuroscience, 2003.
48. D. Sapunar, K. Modric-Jednacak, M. Ljubkovic, Z. Bosnjak, M. Michalkiewicz, Q. Hogan. Altered excitability of injured DRG neurons in transgenic rats overexpressing neuropeptide Y. Program No. 483.3. 2003: Society for Neuroscience, 2003.
49. M. Ljubkovic, D. Sapunar, J. McCallum, Z.J. Bosnjak, Q.H. Hogan. Divergent membrane effects of spinal nerve ligation on L4 and L5 DRG and emergence of a novel cell category. Program No. 483.7. 2003: Society for Neuroscience, 2003.
50. J.B. McCallum, Q.H. Hogan. Nerve injury selectively diminishes L-type high-voltage activated ICa in rat primary sensory neurons. Program No. 586.9. 2003: Society for Neuroscience, 2003.
51. A. Fuchs, A. Abram, M Bode, Q.H. Hogan. Resting cytosolic calcium in injured sensory neurons. Society for Neuroscience, 2004
52. P. Lirk, D, Sapunar, J.B. McCallum, Q.H. Hogan. Effects of spinal nerve ligation upon repetitive firing behavior. Society for Neuroscience, 2004
53. C. Sarantopoulos, J.B. McCallum, W.M. Kwok, Q.H. Hogan. Dexamethasone rapidly inhibits voltage-gated calcium currents in intact and injured rat DRG neurons after spinal nerve ligation. Society for

Neuroscience, 2004
54. J. McCallum, A. Fuchs, M. Poroli, Q. Hogan. NERVE INJURY DECREASES CAV2.2 CONDUCTANCE Program No. 35.12. 2005 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2005.
55. S.E. Abram, J. Yi, A. Fuchs, C. Dean-Bernhoft, Q.H. Hogan. DRUG ACCESS TO THE RAT DORSAL ROOT GANGLION Program No. 293.14. 2005 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2005.
56. C.D. Sarantopoulos, J. McCallum, W. Kwok, Q.H. Hogan. CALCIUM-ACTIVATED POTASSIUM CURRENTS IN MAMMALIAN PRIMARY AFFERENT NEURONS: THE EFFECT OF NEUROPATHIC INJURY AFTER SPINAL NERVE LIGATION (SNL) Program No. 513.9. 2005 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2005.
57. A. Fuchs, P. Lirk, Q.H. Hogan. CALCIUM TRANSIENTS IN INJURED SENSORY NEURONS Program No. 860.22. 2005 Abstract Viewer/Itinerary Planner. Washington, DC: Society for Neuroscience, 2005.
58. Fuchs A, Sarantopoulos CD, Hogan QH. Calcium Channel Subtypes and the Intracellular Calcium Signal in Sensory Neurons after Injury. American Soc. Anesthesiology Abstracts A799, 2006
59. Hogan K, Domanico M, Caldwell M, Hogan Q, Burmester J. Perioperative Genomic Profiles by Structure-Specific Cleavage of Oligonucleotide Probes. American Soc. Anesthesiology Abstracts A1624, 2006
60. Rigaud M, Fuchs A, Filip P, Hogan QH. CaMKII mediates injury effect on peripheral sensory neurons in rats. Society for Neuroscience, Program #443.9, 2006
61. McCallum JB, Hogan QH. Loss of ICa after nerve injury mediated by inhibition of CaMKII Society for Neuroscience, Program #443.8, 2006
62. Abram SE, Poroli MJ, Hogan QH. Reduced Ca2+ currents in dorsal root ganglion neurons produce hyperalgesic behavior in rats. Society for Neuroscience, Program #803.2, 2006
63. Rigaud M, Chernoff S, Abram S, Stucky CL, Hogan QH. Mouse lumbar spinal segmentation: inter- and intra-strain variability. Program No. 181.15. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2007. Online.
64. Sarantopoulos C, McCallum B, Rigaud M, Kwok W-M, Hogan Q. Neuropathic pain behavior after spinal nerve ligation is mediated by loss of ATP-sensitive potassium current in axotomized primary afferent neuronal somata. Program No. 285.21. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2007. Online.
65. McCallum J, Kwok W-M, Hogan Q, Sarantopoulos C. Localization of Katp subunits in the soma of primary sensory neurons Program No. 509.9. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2007. Online.
66. Rigaud M, Weyker P, Fuchs A, Hogan QH. Peripheral nerve injury results in decreased intracellular Ca2+ stores. ASA annual meeting abstracts, 2007.
67. Rigaud M, Poroli M, Hogan QH. New technique for intracellular Ca2+ recording in intact sensory ganglia at physiologic firing rates. ASA annual meeting abstracts, 2007.
68. Sarantopoulos C, McCallum JB, Rigaud M, Kwok WM, Hogan QH. ATP-Sensitive potassium channels in rat dorsal root ganglion neuronal somata: The effect of spinal nerve ligation. Proceedings of the Anaesthetic Research Society Meeting, November 23-24, 2006, Royal College of Anaesthetists, London, UK; published in Br J Anaesth 98: 290P-291P, 2007.
69. Sarantopoulos C, McCallum JB, Kwok WM, Rigaud M, Hogan QH. Axotomy alters sodium and ATP-sensitive potassium currents elicited by action potential waveform voltage commands in mammalian primary afferent neurons. (Presented at the Annual Meeting of the European Society of Anaesthesiology, Munich, Germany, June 9-12, 2007). European Journal of Anaesthesiology 2007; 24, Supplement 39, 172
70. McCallum JB, Liang MY, Rigaud M, Kwok WM, Hogan Q, Sarantopoulos C. Identification and distribution of ATP-sensitive potassium channel isoform subunits in rat primary afferent neurons after painful nerve injury. Proceedings of the Anaesthetic Research Society Meeting, January 2008, Royal College of Anaesthetists, London, UK
71. C Sarantopoulos, B. McCallum, M. Liang, W. Kwok, Q. Hogan. Electrophysiological parameters specifically mediating neuropathic pain behavior after spinal nerve ligation in the rat European Journal of Anaesthesiology 2008; 25: 6, Best Abstract-Runner-up 2: ESAAP2-6
72. C Sarantopoulos, B. McCallum, M. Liang, W. Kwok, Q. Hogan. ATP-sensitive potassium (KATP) channels in peripheral sensory neurons: alterations after nerve injury that results in pain behavior in the rat AUA 55th Annual Meeting, Duke University, North Carolina, May 15-18 2

73. McCallum J, Wu H, Hogan Q. Sensitivity of Ica to CaMKII blockers after axotomy of rat DRG neurons. Program No. 268.1. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
74. Hogan QH, Poroli M, Rigaud M. Hyperpolarization-activated current (Ih) contributes to excitability of primary sensory neurons in rats. Program No. 268.7. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
75. Zoga V, Liang M, Kawano T, Gemes G, Wu H, Abram, Hogan Q, Sarantopoulos C. Morphological distribution of sulfonylurea receptor 1 (SUR1) in peripheral sensory neurons: the effect of nerve injury. Program No. 268.12. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
76. Liang M, Zoga V, Kawano T, Gemes G, McCallum J, Weihrauch D, Hogan Q, Sarantopoulos C. Alterations of primary afferent neuronal subpopulations expressing SUR1 immunofluorescence after spinal nerve ligation. Program No. 268.13. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
77. Kawano t, Zoga V, Gemes G, McCallum B, Kwok W-M, Hogan Q, Sarantopoulos C. Single channel parameters of KATP current in primary afferent neurons: the effect of painful nerve injury. Program No. 268.14. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
78. Wu H, Gemes G, Kawano T, Zoga V, Hogan Q. Place preference validates sustained lifting/grooming as selective indicator of rat pain after peripheral nerve injury. Program No. 267.4. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
79. Gemes G, Rigaud M, Hogan QH. Decreased Ca2+ stores in axotomized rat DRG neurons. Program No.368.7. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2008. Online.
80. Wu H-E, Gemes G, Kawano T, Zoga V, Hogan QH; Paw withdrawal from von Frey filament stimulation is not aversive after peripheral nerve injury Program No. 267.13. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2009. Online.
81. Hogan QH, Gemes G, Rigaud M, Dean C, Seagard J, Baroreceptor reflex is suppressed in rats that develop hyperalgesia behavior after nerve injury Program No. 458.11. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2009. Online.
82. Liang M-Y, Zoga V, Kawano T, Sikka J, McCallum G, Hogan Q, Wells CW, Xarantopoulos C. Schmidt-Lanterman incisures in mammalian peripheral sensory axons are altered after painful nerve injury Program No. 763.17. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2009. Online.
83. Zoga V, Kawano T, Gemes G, Liang M-Y, Hogan Q, Sarantopoulos C. Activation of KATP channels in intact and axotomized primary afferent neurons by NO via direct S-nitrosylation Program No. 856.11. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2009. Online.
84. Gemes G, Wu H-E, McCallum B, Cruikshank J, Hogan Q. Store-operated Ca2+ entry in DRG neurons that is amplified by painful nerve injury Program No. 856.12. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience, 2009. Online.
85. Hogan, QH, Rigaud M, Gemes G, Stucky C, Abram S, Dean C, Seagard J. Pain tests provoke modality-specific cardiovascular responses in awake, unrestricted rats. Program No. 79.1. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
86. Bangaru ML, Zoga V, Wu H-E, McCallum B, Park F, Hogan QH. Identification of suitable normalization genes for transcript expression analysis in injured sensory neurons. Program No. 176.2. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
87. Wu H-E, Tang Q, Zoga V, Kwok W-M, Hogan Q. Sigma receptor agonists inhibit voltage-gated calcium current in rat sensory neurons. Program No. 376.6. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
88. Wu H-E, Bangaru MLY, Gemes G, Kwok W-M, Hogan QH. Effect of peripheral nerve injury on Icrac in rat sensory neurons. Program No. 376.13. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
89. Tang Q, Wu H-E, Kwok W-M, Hogan Q. Calcium-dependent regulation of calcium currents in rat primary afferent neurons: Effect of injury and role of CaMKII. Program No. 376.18. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2010. Online.
90. Bangaru MLY, Kaiser DJ, Hudmon A, Hogan QH. Differential expression of CaMKII isoforms and overall kinase activity in rat dorsal root ganglia after injury. Program No. 162.10. Neuroscience Meeting

Planner. Washington, DC: Society for Neuroscience, 2011. Online.

91. Wu HE, Bangaru M, Tang Q, Weihrauch D, Hogan Q. Effect of spinal nerve injury on sigma-1 receptor distribution and regulation of Ca2+ signaling in rat sensory neurons. Program No. 275.07. Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.
92. Bangaru MLY, Kostic S, Tang Q, Wu HE, Ashpole N, Mueller S. Hudetz AG, Kwok WM, Hudmon A, Hogan QH. Ca2+-dependent facilitation of Ca2+ current in sensory neurons: Loss of excitability regulation after nerve injury. Program No. 275.08. Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.
93. Yu H, Fischer G, Reiser J, Park F, Hogan Q. Differential neurotropism of lentivector-mediated gene transfer to adult rat DRG Program No. 617.26. Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.
94. Hogan, QH, Rigaud M, Gemes G, Stucky C, Abram S, Dean C, Seagard J. Pain Bangaru MLY, Kaiser DJ, Hudmon A, Hogan QH. Differential expression of CaMKII isoforms and overall kinase activity in rat dorsal root ganglia after injury. Program No. 162.10. Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011. Online.
95. Koopmeiners A, Kramer J, Hogan, Q. Neurophysiological effects of electrical stimulation of the dorsal root ganglion: In vitro electrophysiology. North American Neuromodulation Society, Las Vegas, December 2011.
96. Gemes G, Oyster K, Wu H-E, Hogan QH. Painful nerve injury increases PMCA activity in axotomized neurons. European Society of Anesthesiology, Paris, June 2012.
97. Pan B, Mueller S, Hogan Q, Wu, H. Effects of sigma-1 receptor on voltage-gated Ca2+ current and Ca2+ signaling in rat sensory neurons after spinal nerve injury. Program No. 82.14. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online
98. Yu H, Fischer G, Hogan QH. Targeted inhibition of Ca2+/calmodulin-dependent protein kinase II in primary afferent neurons results in mechanical hypersensitivity in rat. Program No. 82.16. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
99. Wu H, Duncan C, Mueller S, Hogan QH. Painful nerve injury diminishes sarco-endoplasmic reticulum Ca2+-ATPase activity in axotomized sensory neurons. Program No. 82.17. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
100. Fischer G, Fan F, Park F, Nakai H, Hogan QH, Yu H. Differential properties of AAV6- and AAV8-mediated gene transfer to primary sensory neurons in adult rat. Program No. 297.03. 2012 Neuroscience Meeting Planner. New Orleans, LA: Society for Neuroscience, 2012. Online.
101. Fischer G, Pan B, Vilceanu D, Hogan QH, Yu H. Sustained relief of traumatic neuropathic pain by AAV-targeted expression of CBD3 peptide in rat dorsal root ganglion. Program No. 740.05. 2013 Neuroscience Meeting Planner. San Diego, Ca: Society for Neuroscience, 2013. Online.
102. Guo Y, Pan B, Hogan QH, Wu H-E. Sigma-1 receptor decreases intracellular calcium stores and increases neuronal excitability in rat sensory neurons. Program No. 370.16. 2013 Neuroscience Meeting Planner. San Diego, Ca: Society for Neuroscience, 2013. Online.
103. Pan B, Guo Y, Simon E, Mueller S, Wu H-E, Luo Z, Hogan QH. Bidirectional effects of thrombospondin-4 on HVA and LVA calcium currents in primary sensory neurons. Program No. 740.05. 2013 Neuroscience Meeting Planner. San Diego, Ca: Society for Neuroscience, 2013. Online.
104. Hogan QH, Pan B, Yu H, Subbaroyan J. Ca2+-Calmodulin kinase II regulation of sensory neuron excitability - A hypothesis to explain dorsal root ganglion stimulation analgesia. Electrical Stimulation of the Nervous System: MOA Conference. March 2014.
105. Dean-Bernhoft C, Hillard CJ, Seagard JL, Hopp FA, Hogan QH. Altered endocannabinoid signaling influences baseline heart rate. Program No. 77.20. 2014 Neuroscience Meeting Planner. Washington, D.C. Society for Neuroscience, 2014. Online.
106. Guo Y, Wu H, Luo Z, Hogan QH, Pan B. Thrombospondin-4 increase mediates disruption of intracellular calcium signaling in injured primary sensory neurons. Program No. 241.11. 2014 Neuroscience Meeting Planner. Washington, D.C. Society for Neuroscience, 2014. Online.
107. Wu H, Guo Y, Pan B, Hogan QH. Sigma-1 receptor regulates sarco-endoplasmic reticulum Ca2+-ATPase and store-operated Ca2+ entry activity in axotomized sensory neurons. Program No. 241.12. 2014 Neuroscience Meeting Planner. Washington, D.C. Society for Neuroscience, 2014. Online.
108. Pan B, Luo Z, Hogan QH. Thrombospondin-4 elevates sensory neuron excitability by decreasing N-type and increasing T-type calcium currents. Program No. 241.14. 2014 Neuroscience Meeting Planner. Washington, D.C. Society for Neuroscience, 2014. Online.
109. Hogan QH, Sprick C, Guo Y, Mueller S, Bienengraeber M, Pan B, Wu H. Painful nerve injury reduces

mitochondrial calcium buffering in axotomized sensory neurons but elevates calcium buffering in adjacent sensory neurons. Program No. 242.14. Neuroscience Meeting Planner. Washington, D.C. Society for Neuroscience, 2014. Online.

110. Simon E, Wu H-E, Hogan QH. "Thrombospondin-4, a glycoprotein overexpressed After Injury, Disrupts Ca2+ Homeostasis in Sensory Neurons" International Anesthesia Research Society 2015 Annual Meeting, Honolulu, Hawaii [first place for the best resident abstract presentation]
111. Pawela C, Li Z, Pillay S, Subbaroyan J, Kramer J, Hudetz A, Hogan QH. Functional MRI reveals analgesia by DRG stimulation in rats. International Neuromodulation Society annual meeting, Montreal, June 2015. [Best Abstract award]
112. Pawela C, Li Z, Kaczmarowski A, Hogan Q. Field stimulation of the dorsal root ganglion reduced noxious stimulation-induced cortical activation. Program No. 62.13. Neuroscience Meeting Planner. Chicago IL, Society for Neuroscience, 2015. Online.
113. Yu H, Liu F, Wang G, Fischer G, Hogan Q. Nerve injury promotes loss of nociceptive neuron-specific G?i-interacting protein (Ginip) expression in neuropathic pain rat. Program No. 152.12. Neuroscience Meeting Planner. Chicago IL, Society for Neuroscience, 2015. Online.
114. Dean C, Hillard CJ, Seagard JL, Hopp FA, Hogan QH. Endocannabinoid signaling in the dorsal periaqueductal gray influences the development of neuropathic pain. Experimental Biology, 2016.
115. Dean C, Roberts CJ, Hopp FA, Hogan Q. Involvement of anandamide in differential sympatho-sensory control. Society for Neuroscience, 2016.
116. PEER REVIEWED EDUCATIONAL PRODUCTS: NA
117. Pan B, Yu H, Fischer G, Kramer JM, Hogan QH. Dorsal root ganglionic field stimulation relieves both spontaneous and induced neuropathic pain in rats. Program No. 145.19. Neuroscience Meeting Planner. San Diego CA. Society for Neuroscience, 2016. Online.
118. Wu H-E, Pan B, Yu H, Hogan QH, Su T-P. Sigma-1 receptor affects neuropathic pain by modulating neuronal excitability in the primary sensory neurons. Program No. 614.17. Neuroscience Meeting Planner. San Diego CA. Society for Neuroscience, 2016. Online
119. Fischer G, Wang F, Liu Z, Bai X, Yu H, Hogan QH. Analgesic effects of intrathecal MSCs in nerve-injured rats is associated with changes in levels of multiple cytokines in CSF. Program No. 615.17. Neuroscience Meeting Planner. San Diego CA. Society for Neuroscience, 2016. Online
120. Yu H, Liu Z, Wang F, Xiang G, Pan B, Hogan QH. Alleviating neuropathic pain by selective expression of trpv1 interfering peptide aptamer in primary sensory neurons. Program No. 233.09. Neuroscience Meeting Planner. San Diego CA. Society for Neuroscience, 2016. Online
121. Hogan Q, Zhang Z, Chao D, Pan B. Dorsal root ganglionic stimulation prevents inflammatory arthritis in the rat CIA model. Program No. 595.11. Neuroscience Meeting Planner. Washington DC. Society for Neuroscience, 2017. Online
122. Pan B, Zhang Z, Hillard C, Hogan QH. Changed endocannabinoid signaling in the medial prefrontal cortex is related to chronic pain induced depression. Program No. 330.22. Neuroscience Meeting Planner. Washington DC. Society for Neuroscience, 2017
123. Yu H, Xiang H, Xu H, Hogan QH. GFAP promoter determines gene transfer to satellite glial cells following intraganglionic delivery in adult rats. Program No. 581.17. Neuroscience Meeting Planner. Washington DC. Society for Neuroscience, 2017. Online
124. Pan B, Chao D, Hogan QH. Dorsal root ganglionic field stimulation selectively blocks nociceptive sensory afferents. Program No. 572.14. Neuroscience Meeting Planner. Washington DC. Society for Neuroscience, 2018. Online
125. Saber M, Schwabe D, Tessmer J, Khan Z, Kent A, Robinson M, Hogan Q, Pawela C. Rat fMRI brain responses to noxious stimulation during tonic, burst, and burst-microdosing spinal cord stimulation. New York City. NANS Summer Conference, 2018
126. Yu H, Xiang H, Shin SM, Hao X, Brandon, IZ, Khanna R, and Hogan Q. Enhanced analgesic effect of AAV-encoded mutant CBD3 peptide (CBD3A6K) for primary sensory neuron-targeted treatment of established neuropathic pain in rat. American Society of Gene & Cell Therapy (ASGCT) 21stAnnual meeting, Chicago, IL. May 16 - 19, 2018
127. Pan B, Zhang Z, Chao D, Hillard CJ, Hogan QH. Changed endocannabinoid Signaling in the Medial Prefrontal Cortex is related to Chronic Pain Induced Depression. 28th Annual Symposium of the International Cannabinoid Research Society, 2018, Leiden, Netherlands
128. Pawela C, Saber M, Schwabe D, Kent A, Park H-J, Hogan Q. Rat fMRI Brain Responses to Noxious Stimulation During Tonic, Burst, and Burst-Microdosing Spinal Cord Stimulation American Society for Peripheral Nerve, Fort Lauderdale FL 7/2019

129. Pawela C, Saber M, Schwabe D, Kent A, Park H-J, Hogan Q. Rat fMRI Brain Responses to Noxious Stimulation During Tonic, Burst, and Burst-Microdosing Spinal Cord Stimulation. International Neuromodulation Society, Sydney Australia, May 2019
130. Pan B, Chao D, Yu Q, Hogan Q. Ectopic activity from injured dorsal root ganglion neurons triggers hyperalgesia and allodynia in rats with spinal nerve ligation. Program No. 220.26. Neuroscience Meeting Planner. Chicago IL. Society for Neuroscience, 2019. Online
131. Shin S, Yu H, Hogan Q, Pan B, Itson-Zoski B, Wang G, Cai Y, Stucky CL. Satellite glial cells in sensory ganglia express functional TRPA1 that is sensitized in neuropathic and inflammatory pain. Program No. 740.07. Neuroscience Meeting Planner. Chicago IL. Society for Neuroscience, 2019. Online
132. Yu H, Shin S, Wang F, Xiang H, Itson-Zoske B, Hogan QH. Pain pathology-dependent differential alteration of sensory ganglia Tmem100 in inflammatory pain and neuropathic pain. Program No. 749.17. Neuroscience Meeting Planner. Chicago IL. Society for Neuroscience, 2019. Online

Non-Peer Reviewed Educational Products

1. Hogan Q. Computerized anatomy: reconstructing 3D images from 2D data. American Society of Anesthesiologists annual meeting, San Francisco, 1991.
2. Hogan Q. Cryomicrotome section and three dimensional computer reconstruction. American Society of Regional Anesthesia annual meeting, Tampa, 1992.