

# Gilles C.J. Pinault, MD FACS

## Curriculum Vitae

### **Business Address**

Louis Stokes, Cleveland Department of Veterans Affairs Medical Center  
Department of Surgery  
10701 East Boulevard  
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### **Appointments**

1. Assistant Professor of Surgery, Case Western Reserve University
2. Clinical Instructor, Department of Anesthesiology, Case Western Reserve University
3. Affiliate Staff, Department of Orthopedics, MetroHealth Medical Center, Case Western Reserve University

### **Hospital Affiliations**

1. University Hospitals of Cleveland, Cleveland Ohio
2. Wade Park Veterans Hospital, Cleveland Ohio

### **Certifications**

1. American Board of Surgery – General Surgery
2. American Board of Surgery – Vascular Surgery
3. American Board of Surgery – Surgical Critical Care
4. Fellow-American College of Surgery

### **Post Graduate Medical Education**

1. Department of Vascular Surgery Vascular Surgery Fellow, University Hospitals of Cleveland 1999 – 2001
2. Critical Care Fellow Department of Anesthesia
3. University Hospitals of Cleveland 1998 – 1999
4. General Surgery Resident Department of Surgery, University Hospitals of Cleveland 1991 – 1998
5. Allen Research Scholar, Department of Surgery, MetroHealth Medical Center 1993 - 1995

### **Medical Education**

1. McGill University School of Medicine, Montreal, Quebec, 1987 – 1991

### **Undergraduate Education**

1. McGill University, Montreal, Quebec, Bachelor of Science, Interdepartmental Honors in Immunology, 1984 – 1987
2. John Abbott College, Ste. Anne de Bellevue, Quebec, Diploma of Collegial Studies in Health Sciences, School Community Service Award, 1982 – 1984
3. Beaconsfield High School, Beaconsfield, Quebec 1977 – 1982

### **Languages**

1. English
2. French

### **Professional Experience**

1. 2008-present: Medical Director Advanced Platform Technology Center- Rehabilitation R&D Service, US Department of Veterans Affairs
2. 2005-2009: Acting Medical Director- Surgical ICU, Wade Park VA Hospital, Cleveland, Ohio
3. 2004-present: Co-Director of Vascular Lab, Wade Park VA Hospital, Cleveland, Ohio
4. 2003-present: Vascular Surgeon (Full Time), Department of Surgery, Wade Park VA Hospital, Cleveland, Ohio
5. 2001-2003: Vascular Surgeon, Department of Vascular Surgery, University Hospitals of Cleveland, Cleveland, Ohio
6. 1999 – present: Intensivist, Surgical Critical Care, Department of Anesthesia, University Hospitals of Cleveland, Cleveland, Ohio
7. 1994 – 1995, Flight Physician, Metro Life Flight, Cleveland, Ohio

### **Committees**

1. Residency Committee, Case Surgery, University Hospitals of Cleveland
2. Pharmacy and Therapeutics Committee, Wade Park Veterans Hospital
3. Ethics Committee, Wade Park Veterans Hospital
4. Local Selection Committee, ACS, Anthony Stallion, Chairman

### **Education**

1. Surgical Clerkship Director ( VA Hospital, Wade Park VA Hospital, Cleveland )  
Case Western Reserve School of Medicine

## RESEARCH SUPPORT

### ACTIVE

C3819C (Medical Director) 1/10-12/14

Department of Veterans Affairs

“Advanced Platform Technology (APT) Center of Excellence”

The purpose of this Center of Excellence is to develop advanced, cross-cutting technologies that serve the clinical needs of veterans with motor and sensory deficits and limb loss to provide clinician-researchers within the VA with new tools for rehabilitation, treatment and scientific inquiry. Recent advances in nanotechnology, micro-machined electro-mechanical systems (MEMS) and new biologically inspired materials (polymers) will be brought to bear on the most pressing rehabilitation needs of the disabled veteran as determined through a systemic and formal assessment of the field.

B0608R (Co-Investigator, PI: Kobetic) 01/13 – 12/16

Department of Veterans Affairs

“Hybrid Neuroprosthesis with a Variable Knee Control for Walking in SCI”

The main objective of the proposed study is to restore functions normally provided by eccentric muscle contractions during walking, stair descend and stand-to-sit maneuver in individuals with paraplegia from thoracic spinal cord injury (SCI) by means of a novel hybrid neuroprosthesis (HNP). The proposed HNP combines advantages of functional neuromuscular stimulation (FNS) for generating power for forward propulsion with the user’s own musculature and stability provided by a controllable lower extremity brace with a variable impedance knee mechanism (VIKM).

B7692R (Co-Investigator, PI: Kobetic) 10/12-10/15

Department of Veterans Affairs

“Improving Ambulatory Community Access after Paralysis”

The goal of this project is to correct or enable gait with multichannel implanted FNS system in persons with paresis of lower extremities to better their societal participation and quality of life through improved ambulatory community access.

B7368R (Co-Investigator, PI: Triolo) 4/12-3/14

Department of Veterans Affairs

“Long-Term Follow-Up of Lower Extremity Neuroprosthesis Users”

This goal of this project is to determine the long-term performance of implanted neuroprostheses for standing and stepping after paralysis from spinal cord injury. Longitudinal data on functional performance, satisfaction and reliability of the implanted components will be collected and analyzed to inform the design of future implanted systems.

Overlap: NONE

B6406R (Co-Investigator, PI: Triolo) 1/10 - 6/13

Department of Veterans Affairs “

“A Neuroprosthesis for Seated Posture and Balance”

Purpose is to establish the requirements & determine the performance of neuroprosthetic systems for controlling the torso of seated wheelchair operators by stimulating the paralyzed trunk & hip muscles. Effects of stimulation on spinal alignment, pulmonary function, reaching ability, seated stability & prevention of falls are being investigated.

R01 EB001189 (Co-Investigator, PI: Triolo) 9/07 – 6/13 (no cost extension)

NIH/NIBIB

“Enhancing Neuroprosthesis Performance with Nerve Cuff Electrodes”

The purpose of this study is to initiate the clinical evaluation of new, multicontact Flat Interface Nerve Electrodes (FINE) on the human femoral nerve trunk and incorporate them into second-generation implanted neuroprostheses for standing and stepping after motor complete spinal cord injury. In addition, the project will complete the pre-clinical development and validation testing of FINEs designed specifically for the lower sciatic, tibial or fibular nerves to control ankle plantar/dorsiflexion and in/eversion.

“Infra-Inguinal Occlusive Disease: A Single Center Retrospective Analysis of Outcomes using the Silverhawk Directional Atherectomy Device.” Co-Investigator with P. Kang.

VA Cooperative Study #498: The VA Open versus Endovascular Repair of Abdominal Aortic Aneurysms (AAA) Trial.” Co-Investigator with J.M. Jean-Claude.

“An Observational Study of Patients with Abdominal Aortic Aneurysms.” Co-Investigator with J.M. Jean-Claude.

## **PENDING**

TBA (Co-Investigator, PI: Triolo) 7/13 – 6/17

Department of Veterans Affairs

“A Neuroprosthesis for Seated Posture and Balance”

The purpose of this project is to implement implanted neuroprostheses that activate the paralyzed trunk and hip musculature and modulate stimulation in response to environmental and task demands. Effects on functional activities such as seated bimanual reach, ability to perform righting maneuvers, and manual wheelchair propulsion will be assessed.

TBA (Co-Investigator, PI: Triolo) 7/13-7/17

Department of Veterans Affairs

“Exploiting Selective Recruitment to Prolong Standing after SCI”

The purpose of this project is to optimize and automate advanced stimulation paradigms that take advantage of the selectivity of multicontact stimulating nerve cuff electrodes to alternate between synergistic motor unit pools to delay fatigue and extend standing times with implanted neuroprostheses.

### **Peer Reviewed Publications**

1. To C, Kobetic R, Bulea TC, Audu ML, Schnellenberger JR, Pinault GC, Triolo RJ, Sensor-based stance control with orthosis and functional neuromuscular stimulation for walking after spinal cord injury, *Journal of Prosthetics and Orthotics*, 24(3):124-132, 2012.
2. To CS, Kobetic R, Bulea TC, Audu ML, Schnellenberger JR, Pinault G, Triolo RJ. Stance control knee mechanism for lower-limb support in hybrid neuroprosthesis. *Journal of Rehabilitation Research & Development*, 48(7):839-850, 2011.
3. Nogan Bailey S, Hardin EC, Kobetic R, Boggs LM, Pinault G, Triolo RJ: Neurotherapeutic and Neuroprosthetic effects of implanted functional electrical stimulation for ambulation after incomplete spinal cord injury. *Journal of Rehabilitation Research & Development*, 47(1):1-16, 2010.
4. Schiefer MA, Polasek KH, Triolo RJ, Pinault GC, Tyler DJ, Selective stimulation of the common human femoral nerve with a flat interface nerve electrode, *Journal of Neural Engineering*, 7(2010): 1-9; 026006, 2010.
5. Polasek KH, Schiefer MA, Pinault GCJ, Triolo RJ, Tyler DJ. Intraoperative evaluation of the spiral nerve cuff electrode for a standing neuroprosthesis. *Journal of Neural Engineering*, 6(2009) 066005, 1-6, 2009.
6. Gustafson KJ, Pinault GCJ, Neville J, Syed I, Davis JA, Jean-Claude J, Triolo RJ. Fascicular anatomy of the human femoral nerve: implications for standing neural prostheses utilizing nerve cuff electrodes,” *Journal of Rehabilitation Research & Development*, 46(7):973-984, 2009.
7. Kobetic R, To CS, Schnellenberger JR, Audu ML, Bulea TC, Gaudio R, Pinault G, Tashman S, Triolo RJ: Development of hybrid orthosis for standing, walking, and stair climbing after spinal cord injury. *Journal of Rehabilitation Research & Development*, 46(3):447-462, 2009.
8. Hardin E, Kobetic R, Murray L, Corado-Ahmed M, Pinault G, Sakai J, Nogan S, Ho C, Triolo R. Ambulation after incomplete spinal cord injury with an implanted FES system,” *Journal of Rehabilitation Research and Development*, 44(3):333-346, 2007.
9. Pinault G, Sanson A, Malangoni MA. Inhibition of Xanthine Oxidase does not Influence Immunosuppression following Hemorrhagic Shock. 1997: *Journal of Trauma*, 43:911-915.

## Book Chapters

1. Pinault GCJ, Goldstone J. Upper Extremity Occlusive Disease. Current Surgical Therapy, 7<sup>th</sup> Ed.

## Abstracts:

1. "Efficacy of Multicontact Spiral Nerve Cuff Electrodes for Standing with an Implanted Neuroprosthesis," R. Triolo, J. Anderson, H. Hoyen, G. Pinault, L. Fisher, L. Lombardo, M. Miller. International Spinal Cord Society (ISCoS) & American Spinal Injury Association (ASIA) Meeting, Washington DC, June 4-6, 2011.
2. "Innovative Approaches to Restoring Motor Function for Individuals with Paralysis Using Functional Electrical Stimulation (FES)," J.S. Anderson, A.M. Bryden, J.A. Davis, L.E. Fisher, R.L. Hart, H. Hoyen, M.W. Keith, K.L. Kilgore, M.E. Miller, G.C. Pinault, L.M. Rohde, K. Tabbaa, R.J. Triolo. Congress of Neurological Surgeons 2010 Annual Meeting, San Francisco CA, October 16-21, 2010.
3. "Intraoperative Evaluation of the Flat Interface Nerve Electrode for Selective Recruitment of Anterior Thigh Muscles in Humans," M. Schiefer, K. Polasek, G. Pinault, R. Triolo, D. Tyler, *Research ShowCase*, CWRU, April 2008. *First Place, Biomedical Engineering Departmental Student Paper Competition*
4. "Neuroprosthetic and Neurotherapeutic Effects of Implanted Electrical Stimulation for Ambulation after Incomplete SCI," SN Bailey, RJ Triolo, EC Hardin, R Kobetic, LM Boggs, LR Murray, BA Seitz, G Pinault, *12th Annual Conference of the International FES Society*, November 2007, Philadelphia PA
5. "Models of Selective Stimulation and Intraoperative Testing of a Flat Interface Nerve Electrode," Matthew Schiefer, Ronald Triolo, Gilles Pinault, Dustin Tyler, *Research ShowCase*, CWRU, April 2007 – *Honorable Mention student paper competition*
6. "Intraoperative Evaluation of the First Flat Interface Nerve Electrode for a Standing Neuroprosthesis," M.A. Schiefer, K.H. Polasek, G.C. Pinault, R.J. Triolo, D.J. Tyler, *4<sup>th</sup> International IEEE/EMBS Conference on Neural Engineering*, Kona Coast, Hawaii 2007.
7. Gilles Pinault MD, Preet Kang MD, Matt Eiseman RN, Elizabeth Kemp NP, Jessie Jean-Claude MD. Use of Atherectomy and other Endovascular Techniques for Salvage Following Failed Infra-inguinal bypass, Presented as poster at the Society of VA Surgeons, Little Rock, Arkansas, May 10<sup>th</sup>-12<sup>th</sup>, 2007
8. "Intraoperative Evaluation of the Spiral Nerve Cuff Electrode for a Standing Neuroprosthetic," K.H. Polasek, M.A. Schiefer, G.C. Pinault, R.J. Triolo, D.J. Tyler, *4<sup>th</sup> International IEEE/EMBS Conference on Neural Engineering*, Kona Coast, Hawaii 2007.
9. "Walking Mechanics after Training with an Implanted Functional Electrical Stimulation System for Incomplete Spinal Cord Injury." E.C. Hardin, R. Kobetic, L. Murray, M. Corado-Ahmed, G. Pinault, S. Nogan, R.J. Triolo – *World Congress of Biomechanics*, Munich Germany, 2006

10. "Walking after Incomplete Spinal Cord Injury with an Implanted Functional Electrical Stimulation System," R. Kobetic, RJ Triolo, G. Pinault, M Corado-Ahmed, L Murray, C Ho, E Hardin – *American Paraplegia Society*, Las Vegas NV 2006.  
*Winner: Top 10 Poster Presentations*
11. "Facilitating Ambulation after Incomplete Spinal Cord Injury with Implanted FES System: A Case Report," R. Kobetic, R.J. Triolo, G. Pinault, L. Murray, M. Corado-Ahmet, E. Hardin, J. Sakai, S. Nogan, E.B. Marsolais, Chester Ho, *10<sup>th</sup> Annual Conference of the International Functional Electrical Stimulation Society*, July 2005, Montreal Canada.

### **Presentations**

1. Research Fellow, 1999 – 2000, "A Comparison of Aorto-renal with Hepato and Spleno-renal Reconstruction" Cleveland Vascular Society, Annual Scientific Meeting June 2000
2. Allen Research Scholar, 1993 – 1995, Abstract "Inhibition of Xanthine Oxidase does not influence Immunosuppression following Hemorrhagic Shock." Presented at the Tenth Annual Meeting of the Eastern Association for the Surgery of Trauma, January 1997
3. Allen Research Scholar, 1993 – 1995, Abstract "Immunosuppression following Hemorrhage and Shock is Site Specific." Presented at SUS Residents Session Feb. 1995
4. Pinault G, Kobetic R, Triolo R, Murray L, Corado-Ahmed M, Hardin E, Sakai J, Nogan S, Marsolais EB, Ho C. Facilitating ambulation after incomplete spinal cord injury with implanted FES system: A case report. Presented at the 10<sup>th</sup> Annual Conference of the International FES Society, Montreal, Canada, 2005.
5. Jessie Jean-Claude MD, Preet S Kang MD, Gilles Pinault MD, Matthew Eiseman RN, Elizabeth Kempe RN, Short Term Results of Single Site Infrainguinal Silverhawk Athrectomy, Presented as poster at the Society of VA Surgeons, Little Rock, Arkansas, May 10<sup>th</sup>-12<sup>th</sup>, 2007

### **Citizenship**

United States, Canada



5/24/13