

September 18, 2018

CURRICULUM VITAE
ANDREW JOSEPH FUGLEVAND

Date of Birth: May 25, 1958
USA

Place of Birth: Havre, MT,

Present Position:
Professor

Citizenship: USA
Work Address:

Departments of Physiology
College of Medicine
University of Arizona
PO Box 245051
Tucson, AZ 85724-5051
tel. 520-621-6983
email: fuglevan@email.arizona.edu

Education

Montana State University, Bozeman	B.S.	Biomechanics	1980
University of Washington, Seattle	M.S.	Kinesiology	1983
University of Waterloo, Canada	Ph.D.	Kinesiology	1989

Dissertation Title: A Population Model of the Motor Unit Pool: Relationship of Neural Control Properties to Isometric Muscle Tension and the Electromyogram
Dissertation Directors: David A. Winter, Ph.D. and Aftab E. Patla, Ph.D.

Career History

University of Washington, Seattle, Department of Kinesiology	Teaching & Research Assistant	1980-1982
Cumberland College of Health Sciences, Sydney, Australia, Department of Biological Sciences	Lecturer	1983-1984
University of Waterloo, Canada, Department of Kinesiology	Teaching & Research Assistant	1985-1989
University of Arizona, Tucson, Motor Control Group	Postdoctoral Fellow	1989-1992
John B. Pierce Laboratory, Affiliate of Yale University, New Haven	Postdoctoral Associate	1992-1993
John B. Pierce Laboratory, Affiliate of Yale University, New Haven	Assistant Fellow	1993-1996
University of Arizona, Tucson, Department of Physiology	Research Assistant Professor	1996 - 1997
University of Arizona, Tucson, Departments of Physiology	Assistant Professor	1997-2003
Department of Neuroscience	Associate Professor	2003-2010
Departments of Physiology and Neuroscience	Associate Professor	2005
Graduate Programs in Neuroscience, Physiological Sciences, Biomedical Engineering	Professor	2010-
	Member	1997-

Major Fields of Research

Neurophysiology, Motor Control, Biomechanics

Honors and Awards

University of Waterloo Graduate Student Scholarship	1987-1988
Engineering Foundation Conference Student Scholarship	1987
National Institutes of Health, NRSA Postdoctoral Fellowship	1990-1992
Distinguished Visiting Scholar, Faculty of Science, University of Adelaide	1999
Distinguished Visiting Research Professor Women's Board, Rehabilitation Institute of Chicago	2002
Associate Editor, Neuroscience Letters	2004 – present
Associate Editor, Frontiers in Neuroscience	2018
Associate Editor, Journal of Neurophysiology	2012-2014
University of Arizona Motor Board Senior Honorary Teaching Recognition Award	2005, 2007
Delsys Prize for Innovation in Electromyography	2006
Member, NIH Musculoskeletal & Rehabilitation Sciences Study Section	2007-2011

Teaching Experience

University of Washington, Seattle

Kinesiology 205 - Biomechanics	90 students	1982
Kinesiology 331 - Kineoenergetics	60 students	1982
Kinesiology 580 - Digital Computing Techniques	8 grad students	1982

Cumberland College of Health Sciences, Sydney, Australia

Biological Sciences 11312 - Biomechanics for Occupational Therapy	90 students/class	1983-1984
Biological Sciences 11313 - Biomechanics for Physiotherapy	20 students/class	1983-1984
Human Movement Analysis 11407	25 grad students	1984
Biomechanics of Human Motion 11410	15 grad students	1984

University of Arizona, Tucson

Motor Control Colloquium - Modeling in Motor Control	20 grad students/postdocs	1991
Neuroscience 589 -Principles of Systems Neurobiology	14 grad students/year	1997-2006
Physiology 464 – Neurophysiology: Sensori- Motor Perspective (course developer and sole instructor)	80 undergraduates/year	1998-2012
Physiology 564 – Neurophysiology: Sensori- Motor Perspective	8 graduates/year	1998-2012
Neuroscience 588 – Cellular/Molecular Neuro.	24 graduate students/year	2011-
Neuroscience 560 – Systems Neuroscience (course developer and coordinator)	15 graduate students/year	2012-
Physiology 465 – Neurophysiology (course developer and sole instructor)	>200 students/year	2013-
Psychology 506B – Cognitive Neuroscience	20 students/year	2015-

Short Course Instructor

Neurophysiology Laboratory Course, Graduate Program in Physiology, Oregon Health Sciences
University, Portland, (2000-2003)

Neural Control of Movement Summer Course, University of Waterloo, Canada, June 20-23, 2004

IGERT, Applied Mathematics Biophysics Lab Course, University of Arizona, 2005

University Service

Membership on University Committees

University of Arizona Graduate College Representative for Comprehensive Examinations

University of Arizona Outcomes Assessment Committee

University of Arizona Undergraduate Writing Proficiency Examination Assessment

Institutional Animal Care and Use Committee (2005-2008)

Committee to Evaluate Head of Physiology (2011)

Membership on College of Medicine Committees

College of Medicine Continuing Medical Education Committee (2004-2005)

Membership on Departmental Committees

Teaching Committee, Chair, Physiological Sciences Graduate Program (2003-2004)

Executive Committee, Physiological Sciences Graduate Program (2003-2004)

Self-Study Committee, Academic Program Review, Program in Neuroscience (2003)

Long-range Planning Committee, Physiological Sciences Graduate Program (2003)

Executive Committee, Graduate Program in Neuroscience (2004-2008)

Liaison Committee Department Head Search, Department of Physiology (2004-2005)

Promotion and Tenure Committee, ARL Division of Neurobiology (2006)

Post-Tenure Review Committee, Department of Physiology (2005 – 2007)

Assistant Professor Search Committee, Department of Physiology (2007)

Master's Degree Coordinator, Physiological Sciences Graduate Program (2007-2009)

Executive Committee, Graduate Program in Physiological Sciences (2009 - 2010)

Resources Committee Chair, Graduate Program in Physiological Sciences (2009 -2010)

Curriculum Committee, Department of Physiology (2009)

Curriculum Committee, Department of Neuroscience (2009)

Recruitment Committee, Graduate Program in Physiological Sciences (2010)

Promotion and Tenure Committee, Department of Physiology (2011-)

Executive Committee, Graduate Program in Neuroscience (2012-2014)

Recruitment Committee, Graduate Program in Physiological Sciences (2013-)

Executive Committee, Graduate Program in Neuroscience (2015-)

Graduate Student Advisor, Graduate Program in Neuroscience (2015-)

Advising Postdoctoral Fellows

Douglas Keen (2003-2005)

Li-Wei Chou (2007-2008)

Robert Tibold (2012-2013)

Brad Harwood (2013-2014)

Doctoral Dissertations Supervised

Douglas A. Keen, Ph.D. (2002) Graduate Program in Physiological Sciences, University of Arizona “Neural and Muscular Control of the Human Extensor Digitorum Muscle”

Tara L. McIsaac, Ph.D. (2006) Graduate Program in Neuroscience, University of Arizona
“Neural Mechanisms Underlying Muscle Synergies Involved in the Control of the Human Hand”

Patrick L. Marcus, Ph.D. (2006) Graduate Program In Biomedical Engineering, University of Arizona
“Electrotactile Feedback System Using Psychophysical Mapping Functions”

Chad V. Anderson, Ph.D. (2007) Electrical and Computing Engineering, University of Arizona,
“Probabilistic Control: Implications for the Development of Upper Limb Neuroprosthetics”

Marco A. Herrera-Valdez, Ph.D. (2008) Physiological Sciences, University of Arizona,
“Relationship between nearly coincident spiking and common excitatory input in motor neurons.”

Lise A. Johnson, Ph.D. (2010) Biomedical Engineering, University of Arizona,
“Decoding electric fields of the nervous system: investigations of information storage and transfer in the central and peripheral nervous system”

Ann R. Revill, Ph.D. (2011) Physiological Sciences, University of Arizona
“Role of synaptic and non-synaptic mechanisms underlying motor neuron control.”

Advising/Mentoring Graduate Students

Elizabeth Peters (1996 – 1998) masters program, Physiological Sciences
David Schach (1996 – 1999) masters program, Physiological Sciences
Tara Robinson (1997-1999) masters program, Physiological Sciences
Chandelle Rose (1998-2000) masters program, Physiological Sciences
Greg Hockensmith (1998-2000) masters program, Physiological Sciences
Heather Siefert (1999-2001) masters program, Biomedical Engineering
Douglas Keen (1997-2002) doctoral program, Physiological Sciences
Tara McIsaac (2000 – 2006) doctoral program, Neuroscience
Patrick Marcus (2001 - 2006) doctoral program, Biomedical Engineering
Chad Anderson (2001 – 2007) doctoral program, Electrical and Computing Engineering
Richard Johns (2002 – 2006) doctoral program, Physiological Sciences
Ann Revill (2006-2011) doctoral program, Physiological Sciences
Hilary Wakefield (2007-2011) doctoral program, Physiological Sciences
Marco Herrera-Valdez (2007-2008) doctoral program, Physiological Sciences
Lise Johnson (2008-2010) doctoral program, Biomedical Engineering
Alie Buckmire (2010-2011) masters program, Physiological Sciences
Alie Buckmire (2011-2016) doctoral program, Neuroscience
M.J. Rameriz (2013-2014) masters program, Physiological Sciences
Jacob Cena (2013-2014) masters program, Biomedical Engineering
Shaun Tay (2015-2016) masters program, Physiological Sciences
Tapas Arakeri (2015-2016) masters program, Biomedical Engineering
Brady Hasse (2017-2018) doctoral program, Neuroscience
Erik Larsen (2017-2018) doctoral program, Neuroscience
Chloe Larkin (2017-2018) masters program, Physiological Sciences

Advising/Mentoring Undergraduate Research

Kimmey Hardesty (2000-2001) – Undergraduate Biology Research Program
Andrea Neary Dutoit (2000-2001) – Honors Thesis, Physiological Sciences
Brook Tlougan (2001-2002) – Honors Thesis, Physiological Sciences
Luisa Gonenberg (2001-2002) – Undergraduate Biology Research Program
Monique Leon (2001-2002) – Honors Thesis, Physiology and Molecular & Cell Biology
Heather Nicolls (2002) – Independent Study, Physiology
Michael Hopson (2002) – Independent Study, Physiology
Fred Buckhold (2002) – Independent Study, Physiology
Michelle Prior (2003) – Independent Study, Physiology
Nicole Mah (2003) – Independent Study, Physiology
Rachit Kumar (2003-2004) – Honors Thesis, Physiology
Cynthia Carter (2004) – Independent Study, Physiology
Ann Floyd (2004) – Independent Study, Physiology
Stephanie Gilbert (2004) – Independent Study, non-degree student
Sibeso Namakando (2005) – Independent Study, Physiology
Lauren Jacobsen (2008) – Independent Study, Physiology
Valarie Dean (2009-2010) – Honors Thesis, Physiology
Connie Leung (2010) – Independent Study, Physiology
Julianne Kmetzo (2010-2011) – Honors Thesis, Psychology
Danielle Lockwood (2011-2013) – Biomedical Engineering
Whitney Burns (2011) – Physiology
Donovan Lockwood (2011-2012) – Flinn Scholar Mentor
Hayley Kiernan (2012-2013) - Physiology
Alina Sironen (2012-2013) - Physiology
Matthew Fritzie (2012-2013) - Biomedical Engineering
Pareena Kaur (2014-2016) – Physiology
Harrison Stovall (2014-2015) – Biomedical Engineering
Anshula Prasad (2015) – Physiology
Chloe Larkin (2016) – Physiology
Tesneem Jalal Tamimi (2016) - Physiology
Daniel Macias (2016-2018) – Molecular & Cellular Biology
Yezan Hassan (2017-2018) – Physiology & Neuroscience
Nicole Holly (2017 – 2018) – Physiology & Neuroscience
Peyton Mierau (2018) – Physiology & Nutrition
Siyi Shao (2018) - Physiology

Doctoral Dissertation Committee Member (non-supervisory role)

Cole Galloway (Physiological Sciences)
George Hornby (Physiological Sciences)
Arthur Lo (Applied Math)
Davide Dulcis (Neuroscience)
Tyson Kinnick (Physiological Sciences)
Karen Sweazea (Physiological Sciences)
Connie Kientz (Speech & Hearing Sciences)
Marsha Penner (Neuroscience)
Michelle Cuicci (Speech & Hearing Sciences)

Donald Gates (Physiological Sciences)
Brooke McGuire (Biomedical Engineering)
Paul Greenberg (Psychology)
Kevin Spitler (Neuroscience)
Jill Roberts (Neuroscience)
Marco Herrera (Physiological Sciences)
Jason Worrell (Physiological Sciences)
Christopher Theal (Neuroscience)
Tracy Perry (Music)
Adam Baker (Linguistics)
Trevor Cardinal (Physiological Sciences)
Erin McKiernan (Physiological Sciences)
Timothy Elmore (Cognitive Science)
Stephen Moore (Biomedical Engineering)
Jen Throne Schaefer (Physiological Sciences)
Lise Johnson (Neuroscience)
Christopher Laine (Physiological Sciences)
Subha Srinivasan (Physiological Sciences)
Kyle Flann (Physiological Sciences)
Brian Monson (Speech & Hearing Sciences)
Zanetta Navratolova (Neuroscience)
Amy Lederle (Speech & Hearing Sciences)
Robin Samlan (Speech & Hearing Sciences)
Stuti Jaiswal (Neuroscience)
Alex Thome (Neuroscience)
Don Gates (Physiological Sciences)
Earlphia Sells (Molecular and Cellular Biology)
Greg Powell (Physiological Sciences)
Lilian Patron (Neuroscience)
Sarah MacNamee (Neuroscience)
Clayton Mosher (Neuroscience)
Jennifer Vranish (Physiological Sciences)
Reece Mazade (Physiological Sciences)
Philip Putnam (Neuroscience)
Rebekah Keating (Neuroscience)
JJ Morrow (Neuroscience)
Jean-Paul Wigand (Neuroscience)
Kim Neeley (Speech Language and Hearing Sciences)
Dan Hill (Physiological Sciences)
Lisa So (Neuroscience)
Samer Masri (Neuroscience)
Michael Flood (Physiological Sciences)
Andrew Flores (Physiological Sciences)
Claire De Lucia (Physiological Sciences)
Tim Maley (Physiological Sciences)

Masters Project Committee Member (non-supervisory role)

Anthony Peth (Physiological Sciences)
Paige Holm (Physiological Sciences)
Tyson Kinnick (Physiological Sciences)
Stephanie Russ (Physiological Sciences)

Ryan Donnely (Physiological Sciences)
Corina Brack (Physiological Sciences)
O.C Franck (Physiological Sciences)
Kelly Brooks (Physiological Sciences)
Jennifer Huang (Physiological Sciences)
Stephanie Gilbert (Physiological Sciences)
Ann Floyd (Physiological Sciences)
Earlphia Sells (Physiological Sciences)
Nizhoni Denipah (Physiological Sciences)
Mary Adde (Physiological Sciences)
Lora Pittman (Physiological Sciences)
Sabina Satpathi (Physiological Sciences)
Candice North (Physiological Sciences)
Leslie Zuniga (Physiological Sciences)
Amber Rice (Physiological Sciences)
Patrick Richardson (Physiological Sciences)
Alaina Glattig (Physiological Sciences)
Laurel Watkins (Neuroscience)
Andrew Flores (Physiological Sciences)
Christopher Love (Biomedical Engineering)
Dan Hill (Physiological Sciences)
Katherine Bullock (Physiological Sciences)
Jordan Clarke (Physiological Sciences)

Technical Training for Visiting Scholars

Kirkwood Personius, Ph.D., University of Pennsylvania, April 15-20, 1999
Derek Kamper, Ph.D., Northwestern University, April 20 – May 9, 1999
Alex Ng, Ph.D., University of California San Francisco, September 20-27, 1999
Marco Santello, Ph.D., Arizona State University, September, 2000
George Hornby, Ph.D., Northwestern University, February 2001
Francisco Vega, M.D., Ph.D., Johns Hopkins University, June 2002
Michael Nordstrom, Ph.D., Adelaide University, December 7 – 18, 2002
Pedram Afshar, M.D., Carnegie Mellon University, November 4-5, 2004
Bridget Waller, Portsmouth University, UK, November 13 – 20, 2004
Sarah-Jane Vick, Ph.D. Sterling University, UK, November 13 – 20, 2004
Lisa Parr, Ph.D., Emory University, November 13 – 20, 2004
Michael Nordstrom, Ph.D., University of Adelaide, Jan 2007 – July 2007
Parveen Bawa, Ph.D., Simon Fraser University, Nov 2007 – Jan 2008
Penelope McNulty, Ph.D., University of Sydney, November 8 – 25, 2007
Hiske van Duinen, Ph.D., Prince of Wales Medical Research Institute, May 9-June 30,
2009
James Potvin, PhD, McMaster University, June 20 – July 6, 2013

External Examiner for Doctoral Dissertation or Comprehensive Examination

Anne M. Taylor, University of Colorado (2000-2003)
Paul M. Kennedy, University of British Columbia (2004)
Kevin Terry, University of Texas at Austin (2007)
Peter G. Martin, University of New South Wales (2007)
Trisha Kesar, University of Delaware (2009)

Wei Shin Yu, University of New South Wales (2009)
 Francesco Negro, Aalborg University, Denmark, (2011)
 Chandan Kalra, University of Sydney (2014)
 Luke Kelly, University of Queensland (2014)
 Francesco Petrini, University of Rome, Biomedical Campus (2015)
 Lara McManus, University College Dublin (2016)
 Michael Leitch, University of Western Sydney (2016)

Research Grants Awarded

Multitask assessment of motor unit fatigue A.J. Fuglevand, P.I., \$561,628	NIH R29AR42893	1995-2000
Neural and muscular control of finger movements A.J. Fuglevand, P.I., \$460,168	NIH 5R01 NS39489	2000-2004
Neural and muscular control of finger movements A.J. Fuglevand, P.I., \$904,500	NIH 2R01 NS39489	2004-2008
Restoration of limb movement using probabilistic control of functional electrical stimulation A.J. Fuglevand, PI, \$50,000	BIO5	2004-2005
Probabilistic Control of Functional Electrical Stimulation A.J. Fuglevand, P.I., \$457,109	NIH R21NS061146	2008-2011
Synaptic Integration in Motor Neurons A.J. Fuglevand, PI, \$337,500	NIH 1R56NS070897	2011-2012
Physiological Significance of Persistent Inward Currents in Motor Neurons AJ Fuglevand, PI \$575,976	NIH R01NS079147	2013-2017
Machine-Learning Based Control of Functional Electrical Stimulation A.J. Fuglevand, PI \$371,219	NIH R56NS096064	2017-2018
University of Arizona Bridge Funding Award A.J. Fuglevand, PI \$72,000	AHSC	2017-2018
Machine-Learning Based Control of Functional Electrical Stimulation A.J. Fuglevand, PI \$ 1,601,118	NIH R01 NS102259	2018-2022
The Role of The Amygdala in Affective and Social Touch A.J. Fuglevand, Co-Investigator \$2,244,684	NIH R01 MH115681	pending

Professional Organizations and Assignments

Membership in National Societies
 Society for Neuroscience

Guest Referee for Scientific Journals

Journal of Neuroscience	Journal of Applied Physiology
Journal of Neurophysiology	Experimental Brain Research
Journal of Physiology	Journal of Psychophysiology
Motor Control	Experimental Physiology
Neuroscience Letters	Canadian Journal of Applied Physiology
Neurobiology of Aging	Journal of Gerontology
Muscle & Nerve	Annals of Biomedical Engineering
IEEE Transactions Biomedical Engineering	Journal of Neuroscience Methods
Encyclopedia of Biomedical Engineering	Journal of Neural Engineering

Journal of Computation Neuroscience
Spinal Cord
Frontiers in Neuroscience

Current Biology
Medical Engineering & Physics

Grant Reviews

Ad Hoc Reviewer for National Sciences and Engineering Research Council of Canada 2000-2006
Ad Hoc Reviewer for Gaylord Research Institute
Ad Hoc Reviewer for NIH Geriatrics and Rehabilitation Medicine Study Section, 2003
Ad Hoc Reviewer for Canadian Institutes of Health Research, 2003
Ad Hoc Reviewer for Yale Core Center for Musculoskeletal Disorders, 2003
Merit Review Board, Rehabilitation Research, Department of Veterans Affairs, 2003
Ad Hoc, Musculoskeletal Rehabilitation Science Study Section, NIH, 2004
Ad Hoc Natural Sciences and Engineering Research Council of Canada (NSERC) 2006
Ad Hoc Special Emphasis Panel/Scientific Review Group NIH, NSD-C 2006, 2012
Ad Hoc, Musculoskeletal Rehabilitation Science Study Section, NIH, 2006-2007
Member, Musculoskeletal Rehabilitation Science Study Section, NIH, 2007-2011
Ad Hoc, Merit Review Board, Department of Veterans Affairs, 2011
Ad Hoc, Special Emphasis Panels, NIH 2011-2016
Ad Hoc, Pre- and Postdoctoral Fellowship, Neuroscience, NIH, 2012-2013
Ad Hoc, Motor Function and Speech Rehabilitation, NIH, 2015
Ad Hoc, Musculoskeletal Rehabilitation Sciences, NIH, 2015-2016
Ad Hoc, BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System, NIH 2016
Ad Hoc, Exploratory Clinical Trials, NIH, 2017
Ad Hoc, Special Emphasis Panel/R21 Trail Blazer Program, NIH 2017
Ad Hoc, NINDS Exploratory Clinical Trials, NIH 2018
Ad Hoc, Special Emphasis Panel, NIH 2018
Ad Hoc, Motor Function and Speech Rehabilitation, NIH, 2018

Editorial Assignments

Associate Editor, *Journal of Neurophysiology* (2012- 2014)
Section Editor, *Comprehensive Physiology* (2014-2016)
Editorial Board, *Journal of Neurophysiology* (2014 – present)
Associate Editor, *Neuroscience Letters* (2004 – present)
Associate Editor, *Neuroprosthetics Section, Frontiers in Neuroscience* (2018)

Industry & Private Sector

Scientific Board, *StimAire, Inc.* (2017-2018)

Other Professional Activities

Presentations:

Invited Presentations

American College of Sports Medicine Symposium: Adaptive Properties of the Sensorimotor System	Seattle, WA	1993
Second World Congress of Biomechanics Symposium: Modeling the Neuromuscular System	Amsterdam, The Netherlands	1994

Neural and Neuromuscular Aspects of Muscle Fatigue	Miami, FL	1994
New England American College of Sports Medicine Annual Meeting	Boxborough, MA	1994
Experimental Biology Cellular and Molecular Signals Governing Energy Transduction During Exercise	Atlanta, GE	1995
Gaylord Hospital Research Institute Current Issues in Rehabilitation Research	Wallingford, CT	1995
Canadian Society for Exercise Physiology Issues in Exercise Neuroscience	Toronto, ONT	1997
European Community Master's of Biology Short Course: Neuromuscular Performance Advanced Research Methods	Leuven, Belgium	1998
Plateau Potentials and the Repetitive Discharge of Motoneurons	Boulder, CO	2000
Neural Control of Movement	Naples, FL	2002
Motoneurons and Muscles: the Output Machinery	Groningen, The Netherlands	2002
Movement Analysis and Therapy After Central Nervous Damage	Sicily, Italy	2003
University of Waterloo, Summer Neural Control Of Movement Course	Waterloo, Canada	2004
Active Dendrites in Motor Neurons	Boulder, CO	2004
Motor Control	Darwin, Australia	2007
Neural Interfaces Conference	Cleveland, OH	2008
Mechanisms of Plasticity and Disease in Motoneurons	Seattle, WA	2008
Brain Sciences Symposium (Keynote Address)	Sydney, Australia	2008
Towards Translational Research In Motoneurons	Paris, France	2010
The Motor Unit. Polish Academy of Sciences	Warsaw, Poland	2011
Human Hand Function, Oxford University	Oxford, UK	2011
International Society of Electromyography & Kinesiology (Keynote Lecture)	Brisbane, Australia	2012
Motoneurons and Beyond	Sydney, Australia	2012
International Motoneuron Society	Halifax, Canada	2014
Polish Neuroscience Society (Plenary Lecture)	Gdansk, Poland	2015
International Motoneuron Society	Boulder, CO	2018

Presentations at International Congresses

International Society of Biomechanics	Umeå, Sweden	1986
IEEE Engineering in Medicine & Biology Society 11th International Conference	Seattle, WA	1989
Third International Brain Research Organization World Congress of Neuroscience	Montreal, Canada	1991
Current Problems of Neuromuscular Fatigue	Amsterdam, The Netherlands	1992
International Society of Electrophysiology & Kinesiology	Brisbane, Australia	2012
International Society of Electrophysiology &	Chicago, IL	2016

Kinesiology International Society of Electrophysiology & Kinesiology	Dublin, Ireland	2018
----------------------------------------------------------------------------	-----------------	------

Presentations at Annual Meetings of National Societies

Society for Neuroscience	Phoenix, Arizona	1989
Society for Neuroscience	St. Louis, Missouri	1990
American Society of Biomechanics	Miami, Florida	1990
Society for Neuroscience	New Orleans, Louisiana	1991
Society for Neuroscience	Washington, D.C.	1993
Society for Neuroscience	Miami, Florida	1994
Society for Neuroscience	San Diego	1995
Society for Neuroscience	Washington, D.C.	1996
Society for Neuroscience	New Orleans, Louisiana	1997
Society for Neuroscience	Los Angeles, California	1998
Society for Neuroscience	Miami, Florida	1999
Society for Neuroscience	New Orleans, Louisiana	2000
Society for Neuroscience	San Diego, California	2001
Society for Neuroscience	New Orleans, Louisiana	2003
Society for Neuroscience	San Diego, California	2004
Society for Neuroscience	Washington, D.C.	2005
Society for Neuroscience	Atlanta, Georgia	2006
Society for Neuroscience	San Diego, California	2007
Society for Neuroscience	Washington, DC	2008
Society for Neuroscience	Chicago, Illinois	2009
Society for Neuroscience	San Diego, California	2010
Society for Neuroscience	New Orleans, Louisiana	2012
Society for Neuroscience	Washington, DC	2014
Society for Neuroscience	Washington, DC	2017

Seminars at Universities and Institutes

University of Waterloo	Waterloo, Ontario, Canada	1985-1989
University of Arizona	Tucson, Arizona	1989-1992
John B. Pierce Laboratory	New Haven, Connecticut	1992-1993
Yale University	New Haven, Connecticut	1993
University of Massachusetts	Amherst, Massachusetts	1993
Boston University	Boston, Massachusetts	1994
University of Colorado	Boulder, Colorado	1995
Cleveland Clinic	Cleveland, Ohio	1995
Ohio University	Athens, Ohio	1995
University of Arizona	Tucson, Arizona	1996-1998
University of Colorado	Boulder, Colorado	1997
University of Edinburgh	Edinburgh, Scotland	1998
Oregon Health Sciences University	Portland, Oregon	1998
Arizona State University	Tempe, Arizona	2000
University of Colorado	Boulder, Colorado	2000
Rehabilitation Institute of Chicago	Chicago, Illinois	2002
Johns Hopkins University	Baltimore, MD	2002
Marquette University	Milwaukee, WI	2006
University of Delaware	Newark, DE	2007
Université Paul-Sabatier	Toulouse, France	2007
University of British Columbia	Vancouver, Canada	2008

McMaster University	Hamilton, Canada	2009
University of Newcastle	Newcastle, Australia	2010
University of Lethbridge	Lethbridge, Canada	2011
Pazmany Peter University	Budapest, Hungary	2011
Georgia Institute of Technology	Atlanta, Georgia	2012
University of Missouri	Columbia, MO	2013
University of Oregon	Eugene, OR	2014
Poznan University	Poznan, Poland	2015
University of Colorado	Boulder, CO	2017
University of Arizona	Tucson, AZ	2018

Publications

A. Manuscripts Published in Refereed Journals

- A1. Fuglevand, A.J. (1987). Resultant muscle torque, angular velocity, and joint angle relationships and activation patterns in maximal knee extension. In Jonsson, B (Ed.), **Biomechanics X-A**, Champaign, IL: Human Kinetics, pp. 559-566.
- A2. Munro, C.F., Miller, D.I., Fuglevand, A.J. (1987). Ground reaction forces in running: a reexamination. **Journal of Biomechanics**, 20: 147-155.
- A3. Nordstrom, M.A., Fuglevand, A.J., & Enoka, R.M. (1992). Estimating the strength of common input to motoneurons from the cross-correlogram. **Journal of Physiology (Lond.)**, 453: 547-574.
- A4. Fuglevand, A.J., Winter, D.A., Patla, A.E., & Stashuk, D. (1992). Detection of motor unit action potentials with surface electrodes: influence of electrode size and spacing. **Biological Cybernetics**, 67: 143 - 153.
- A5. Fuglevand, A.J., Zackowski, K.M., Huey, K.A., & Enoka, R.M. (1993). Impairment of neuromuscular propagation during human fatiguing contractions at submaximal forces. **Journal of Physiology (Lond.)**, 460: 549-572.
- A6. Galganski, M.E., Fuglevand, A.J., & Enoka, R.M. (1993). Reduced control of motor output in a human hand muscle of elderly subjects during submaximal contractions. **Journal of Neurophysiology**, 69: 2108-2115.
- A7. Fuglevand, A.J., Winter, D.A., & Patla, A.E. (1993). Models of recruitment and rate coding organization in motor unit pools. **Journal of Neurophysiology** . 70: 2470-2488
- A8. Winter, D.A., Fuglevand, A.J., & Archer, S. (1994) Crosstalk in surface electromyography: theoretical and practical estimates. **Journal of Electromyography and Kinesiology**, 4: 15-26.
- A9. Fuglevand, A.J., Bilodeau, M., & Enoka, R.M. (1995). Short-term immobilization has a minimal effect on the strength and fatigability of a human hand muscle. **Journal of Applied Physiology**, 78: 847-855.
- A10. Howell, J.N., Fuglevand, A.J., Walsh, M.L., Bigland-Ritchie, B. (1995). Motor unit activity during isometric and concentric-eccentric contractions of human first dorsal interosseus muscle. **Journal of Neurophysiology**, 74: 901-904.

- A11. Yue, G., Fuglevand, A.J., Nordstrom, M.A., & Enoka, R.M (1995). Limitations of the surface-EMG technique for estimating motor unit synchronization. **Biological Cybernetics**, 73: 223-233..
- A12. Fuglevand, A.J. (1995). The role of the sarcolemma action potential in fatigue. **Advances in Experimental Medicine and Biology**, 384: 101-108.
- A13. Macefield V.G., Fuglevand A.J., Bigland-Ritchie B. (1996). Contractile properties of single motor units in human toe extensors assessed by intraneural motor-axon stimulation. **Journal of Neurophysiology**, 75: 2509-2519.
- A14. Fuglevand A. J. (1996). Neural aspects of fatigue. **The Neuroscientist**, 2: 203-206.
- A15. Fuglevand, A.J., Segal, S.S (1997). Simulation of motor unit recruitment and microvascular unit perfusion: spatial considerations. **Journal of Applied Physiology**, 83:1223-1234, 1997.
- A16. Bigland-Ritchie, B., Fuglevand, A.J., and Thomas, C.K.(1998). Contractile properties of human motor units: is man a cat? **The Neuroscientist**, 4: 240-249.
- A17. Fuglevand, A.J., Macefield, V.G., & Bigland-Ritchie, B. (1999). Force-frequency and fatigue properties of motor units in muscles that control digits of the human hand. **Journal of Neurophysiology**, 81: 1718-1729.
- A18. Peters, E.J.D. and Fuglevand, A.J. (1999). Cessation of human motor unit discharge during sustained maximal voluntary contraction. **Neuroscience Letters**, 274: 66-70.
- A19. Yao, W., Fuglevand, A.J., and Enoka, R.M. (2000). Motor unit synchronization increases EMG amplitude and decreases force steadiness in simulated contractions. **Journal of Neurophysiology**, 83: 441-452.
- A20. Macefield, V.G., Fuglevand, A.J., Howell, J.N., Bigland-Ritchie, B. (2000) Discharge behavior of single motor units during maximal voluntary contractions of a human toe extensor. **Journal of Physiology (Lond.)**, 528: 227-234.
- A21. Enoka, R.M., and Fuglevand, A.J. (2001). Motor unit physiology: some unresolved issues. **Muscle and Nerve**, 24: 4 - 17.
- A22. Seifert H.M., and Fuglevand, A.J. (2002). Restoration of movement using functional electrical stimulation and Bayes' theorem. **Journal of Neuroscience**, 22:9465-9474.
- A23. Fuglevand, A.J. and Keen, D.A. (2003). Re-evaluation of muscle wisdom in human adductor pollicis using physiological rates of stimulation. **Journal of Physiology (Lond.)**, 549: 865-875.
- A24. Lo, A., Fuglevand, A.J., Secomb, T.W. (2003) Oxygen delivery to skeletal muscle fibers: Effects of microvascular unit structure and control mechanisms. **American Journal of Physiology: Heart and Circulatory Physiology**, 285: H955-H963.

- A25. Keen, D.A., and Fuglevand, A.J. (2003). Role of inter-tendonous connections in distribution of force in human extensor digitorum. **Muscle & Nerve**, 28: 614-622.
- A26. Keen, D.A., and Fuglevand, A.J. (2004). Common input to motor neurons innervating the same and different compartments of the human extensor digitorum muscle. **Journal of Neurophysiology**, 91: 57-62.
- A27. Keen, D.A., and Fuglevand, A.J. (2004). Distribution of motor unit force in human extensor digitorum assessed by spike-triggered averaging and intraneural microstimulation. **Journal of Neurophysiology**, 91: 2515-2523, 2004.
- A28. Lo, A, Fuglevand, A.J., and Secomb, T.W. (2004). Theoretical simulation of potassium-based mechanisms for regulation of capillary perfusion in skeletal muscle. **American Journal of Physiology: Heart and Circulatory Physiology**, 287: H833-H840.
- A29. Santello, M., and Fuglevand, A.J. (2004) Role of across-muscle motor unit synchrony for the coordination of forces. **Experimental Brain Research**, 159: 501-508.
- A30. Hockensmith GB, Lowell SY, Fuglevand, AJ (2005) Common input across motor nuclei mediating precision grip in humans. **Journal of Neuroscience**, 25:4560-4564.
- A31. Waller BM, Vick SJ, Parr L, Smith Pasqualini MC, Bard KA, Gothard KM, Fuglevand AJ (2006) Intramuscular electrical stimulation of facial muscles in humans and chimpanzees: Duchenne revisited and extended. **Emotion**, 6:367-382.
- A32. Fuglevand AJ, Dutoit AP, Johns RK, Keen DA (2006) Evaluation of plateau-potential mediated 'warm up' in human motor units. **Journal of Physiology**, 571: 683-693.
- A33. McIsaac TL, Fuglevand AJ (2006) Influence of tactile afferents on the coordination of motor nuclei involved in the precision grip. **Experimental Brain Research**, 174:769-774.
- A34. Bailey EF, Rice AD, Fuglevand AJ (2007) Firing patterns of human genioglossus motor units during voluntary tongue movements. **Journal of Neurophysiology**, 97: 933-936.
- A35. McIsaac TL, Fuglevand AJ (2007) Motor unit synchrony within and across compartments of the human flexor digitorum superficialis. **Journal of Neurophysiology**, 97: 550-556.
- A36. Anderson CV, Fuglevand AJ (2008) Probability-based prediction of activity in multiple arm muscles: implications for functional electrical stimulation. **Journal of Neurophysiology**, 100: 482-494.

- A37. Waller BM, Parr LA, Gothard KM, Burrows AM, Vick S-J, Fuglevand AJ (2008) Mapping the contribution of single muscles to facial movements in the Rhesus macaque. **Physiology & Behavior**, 95: 93-100.
- A38. McIsaac TL, Fuglevand AJ (2008) Common synaptic input across motor nuclei supplying intrinsic muscles involved in the precision grip. **Experimental Brain Research**, 188: 159-164.
- A39. Johnson LA, Fuglevand AJ (2009). Evaluation of probabilistic methods to predict muscle activity: implications for neuroprosthetics. **Journal of Neural Engineering**, 6: 055008 (13 pgs).
- A40. Marcus PL, Fuglevand AJ (2009) Perception of electrical and mechanical stimulation of the skin: implications for electrotactile feedback systems. **Journal of Neural Engineering**, 6 066008 (12pp).
- A41. Johnson LA, Fuglevand AJ (2011) Mimicking muscle activity with electrical stimulation. **Journal of Neural Engineering**, 8: 016009 (15 pp).
- A42. Pilarski JQ, Wakefield HM, Fuglevand AJ, Levine RB, Fregosi RF (2011) Chronic nicotine exposure during early development alters neurotransmission and motor neuron excitability in a brainstem circuit for breathing. **Journal of Neurophysiology**, 105:423-433.
- A43. Johns RK, Fuglevand AJ (2011) Number of motor units in human abductor hallucis. **Muscle & Nerve**, 43:895-896.
- A44. Rice A, Fuglevand AJ, Laine CM, Fregosi RF (2011) Synchronization of presynaptic input to motor units of tongue, inspiratory intercostal and diaphragm muscles. **Journal of Neurophysiology**, 105:2330-2336.
- A45. Revill AL, Fuglevand AJ (2011) Effects of persistent inward currents, accommodation, and adaptation on motor unit behavior: a simulation study. **Journal of Neurophysiology**, 106: 1467-1479.
- A46. Fuglevand AJ (2011) Mechanical properties and neural control of human hand motor units. **Journal of Physiology**, 589: 5595–5602.
- A47. Pilarski JQ Wakefield HM, Fuglevand AJ, Levine RB, Fregosi RF (2012) Increased time-dependent nicotinic receptor desensitization in hypoglossal motor neurons following chronic developmental nicotine exposure. **Journal of Neurophysiology**, 107:257-264, 2012.
- A48. Keen DA, Chou L-W, Nordstrom MA, Fuglevand AJ (2012) Short-term synchrony in diverse motor nuclei presumed to receive different extents of direct cortical input. **Journal of Neurophysiology**, 108:3264-3275 [[Faculty of 1000 Recommended Article](#)].
- A49. Tadros MA, Farrell KE, Schofield PR, Brichta AM, Graham BA, Fuglevand AJ, Callister RJ (2014) Intrinsic and synaptic homeostatic plasticity in motoneurons

- from mice with glycine receptor mutations. **Journal of Neurophysiology**, 111:1487-1498.
- A50. Tibold R, Fuglevand AJ (2015) Prediction of muscle activity during loaded movements of the upper limb. **Journal of NeuroEngineering and Rehabilitation**, 12:1-12.
- A51. Fuglevand AJ, Lester RA, Johns RK (2015) Distinguishing intrinsic from extrinsic factors underlying firing rate saturation in human motor units. **Journal of Neurophysiology**, 113:1310-1322.
- A52. Pham TT, Fuglevand AJ, McEwan AL, Leong PH (2015) Unsupervised discrimination of motor unit action potentials using spectrograms. Conference **Proceedings of IEEE Engineering in Medicine & Biological Society**, doi: 10.1109/EMBC.2014.6943514, 1-4.
- A53. Wakefield HE, Fregosi RF, Fuglevand AJ (2016). Current injection and receptor-mediated excitation produce similar maximal firing rates in hypoglossal motor neurons. **Journal of Neurophysiology**, 115:1307-1313.
- A54. Tadros MA, Fuglevand AJ, Brichta AM, Callister RJ (2016). Intrinsic excitability differs between murine hypoglossal and spinal motoneurons. **Journal of Neurophysiology** 115: 2672–2680.
- A55. Mosher CP, Zimmerman PE, Fuglevand AJ, Gothard KM (2016). Tactile stimulation of the face and the production of facial expressions activate neurons in the primate amygdala. **ENeuro**, 3:e0182, 1-9.
- A56. Revill AL, Fuglevand AJ (2017) Inhibition linearizes firing rate responses in human motor units: implications for the role of persistent inward currents. **Journal of Physiology**, 595: 179-191.
- A57. Pham TT, Fuglevand AJ, McEwan AL, Leong PHW (2017) Freezing of gait detection in parkinson's disease: a subject-independent detector using anomaly scores. **IEEE Transactions in Biomedical Engineering**, doi: 10.1109/TBME.2017.2665438.
- A58. Potvin JR, Fuglevand AJ (2017). A motor-unit based model of muscle fatigue. **PLOS Computational Biology** 13: e1005581.
- A59. Gothard KM, Mosher CP, Zimmerman PE, Putnam PT, Morrow JK, Fuglevand AJ (2017) New perspectives on the neurophysiology of primate amygdala emerging from the study of naturalistic social behaviors. **WIRES Cognitive Science**, e1449. doi: 10.1002/wcs.1449.
- A60. Buckmire AJ, Lockwood DR, Doane CJ, Fuglevand AJ (2018). Distributed stimulation increases force elicited with functional electrical stimulation. **Journal of Neural Engineering**, 15: 026001 (14 pp).
- A62. Arakeri TJ, Hasse BA, Fuglevand AJ (2018) Object discrimination using electrotactile feedback. **Journal of Neural Engineering**, 15: 046007 (12pp).

- A63. Buckmire AJ, Arakeri TJ, Reinhard JP, Fuglevand AJ (2018). Mitigation of excessive fatigue associated with functional electrical stimulation. **Journal of Neural Engineering**, 15:066004 (11pp)

B. Book Chapters and Reviews Published by Editorial Invitation

- B1. Enoka, R.M., Barreto, P.M., & Fuglevand, A.J. (1991) Neurologic impairment of movement capability in older persons. In: S.T. Kuna, J.E. Remmers, & P.M. Suratt (Eds.), **Sleep and Respiration in Aging Adults**. New York: Elsevier, pp. 39-45.
- B2. Enoka, R.M., & Fuglevand, A.J. (1993). Neuromuscular basis of the maximum voluntary force capacity of muscle. In: M.D. Grabiner (Ed.), **Current Issues in Biomechanics**. Champaign, IL: Human Kinetics, pp. 215-235.
- B3. Fuglevand, A.J., & Enoka, R.M. (1993). Fatigue-related impairment of neural drive to muscle. In: A.J. Sargeant, & D. Kernell (Eds.), **Neuromuscular Fatigue**, Amsterdam: North Holland, pp. 167-168.
- B4. Schieber, M.H., & Fuglevand, A.J. (2003). Motor areas of the cerebral cortex. In: **Encyclopedia of Cognitive Science**, Volume 3, Nature Publishing Group, London, pp. 111 - 121.