CURRICULUM VITAE

EBERHARD ERICH FETZ

Current appointments

Professor Emeritus, Department of Neurobiology and Biophysics and DXARTS Core Staff Emeritus, Washington National Primate Research Center University of Washington Seattle, WA 98195-7290

Tel: 206- 543-4839 Cell: 206-914-5894 Fax: 206-685-8606 <u>fetz@uw.edu</u> Lab website: <u>https://depts.washington.edu/fetzweb/index.html</u>

Personal Data:

Date of Birth: February 5, 1940 Place of Birth: Zwenkau, Germany Citizenship: United States

Education:

- B.S. Rensselaer Polytechnic Institute, Troy, N.Y.; Physics, 1961
- Ph.D. Massachusetts Institute of Technology, Cambridge, Massachusetts;
 Physics, 1966
 Ph.D. Dissertation: Pyramidal Tract Effects on Spinal Cord Interneurons. Thesis advisor: Prof. Patrick D. Wall

Postgraduate Training:

1957-59	Rensselaer Fellow, Physics Department, Rensselaer Polytechnic Institute, Troy,
	New York
1959-61	I.T.&T. Fellow, Physics Department, Rensselaer Polytechnic Institute, Troy, New
	York
1961-66	National Science Foundation Graduate Fellow, Physics Department,
	Massachusetts Institute of Technology, Cambridge, Massachusetts
1965	Neurosciences Program, Harvard Medical School
1966-67	Postdoctoral Fellow, Biology Department, Massachusetts Institute of Technology,
	Cambridge, Massachusetts
1967-69	Postdoctoral Fellow, Department of Physiology and Biophysics, University of
	Washington School of Medicine, Seattle, Washington

Faculty Positions Held:

1969-75	Assistant Professor, Departments of Neurological Surgery and Physiology &
	Biophysics, University of Washington School of Medicine, Seattle, Washington
1969-	Core Staff, Regional Primate Research Center, University of Washington, Seattle,
	Washington
1970-75	NINDS Teacher-Investigator Fellow
1975-80	Associate Professor, Department of Neurological Surgery and Physiology &
	Biophysics, University of Washington School of Medicine, Seattle, Washington
1977-78	Macy Faculty Scholar, Department of Physiology, Harvard Medical School and
	Department of Physiology, University of Göteborg
1980-2022	Professor, Department of Physiology and Biophysics, University of Washington
	School of Medicine
1987	Visiting Professor, Department of Physiology, Kyoto Prefectural University of
	Medicine, Kyoto, Japan
1995 -99	Head of Neuroscience Division, Regional Primate Research Center, University of
	Washington, Seattle, Washington
1999 - 2005	Associate Director for Neuroscience, Washington National Primate Research
	Center, University of Washington, Seattle, Washington
2002	Visiting Professor, College de France, Paris, France
2004-5	Fellow, Wissenschaftskolleg zu Berlin, Berlin, Germany
2010-2022	Adjunct Professor, Department of Bioengineering, University of Washington
2012-2015	Head of Neuroscience Division, Washington National Primate Research Center,
	University of Washington, Seattle, Washington
2013-2017	Affiliate Faculty, DXARTS, University of Washington
2017-2019	Adjunct Professor, DXARTS, University of Washington
2019-2022	Professor, DXARTS, University of Washington
2022-	Professor Emeritus, Departments of Physiology [currently Neurobiology] &
	Biophysics and DXARTS, University of Washington

<u>Honors</u>: Sigma Xi

NINDS Teacher-Investigator Award, 1970-75 Josiah Macy Faculty Scholar Award, 1977-78 Sloan Research Fellow, 1972-74 NSF US-Japan Cooperative Science Program Award, 1985-86 Visiting Professor, College de France, Paris, France, 2002 Fellow, Wissenschaftskolleg zu Berlin, 2004-2005 NIH Javits Award 1986-1992 and 2006-2013 Associate, The Neurosciences Research Program, 2008-2015 Contributing member, Faculty of 1000, 2009-2012 Humboldt Research Award, 2010-2011 New York Academy of Sciences and Aspen Brain Forum first Prize in Neurotechnology, 2010 Fellow, American Association for the Advancement of Science, inducted 2/13/2021. Marquis Who's Who, 2022. Distinguished Career Award, Society for Neural Control of Movement, 2024

Hobbies:

Multimedia art Private pilot Scuba diving

Organizations:

American Association for the Advancement of Science (life member and Fellow) American Society of Primatologist, 1977 Society for Neuroscience (Program Committee, 1988-1991) International Association for the Study of Pain, 1974 International Brain Research Organization Neural Control of Movement (Board Member, 1997-2001)

Editorial Responsibilities:

Associate Editor, Neuroscience Letters, 1976 - 2001 Member, Behavioral Neurosciences Study Section, NIH, 1985-89 Editorial Board, Journal of Neurophysiology, 1986-1992; 1995 - 2003 Board of Editors, Experimental Brain Research, 1986 - 2000 Editorial Board, Somatosensory and Motor Research, 1988 - 1997 Associate Editor, Somatosensory and Motor Research, 1997 - present Editorial Board, Journal of Computational Neuroscience, 1994 - 2017 Editorial Board, Neural Computation, 1995 - present International Editorial Adviser, Japanese Journal of Physiology, 1999 - present Guest Editor, Neural Networks Special Issue on Brain-Computer Interfaces, 2008 Associate Editor, Frontiers in Neuroprosthetics, 2008 – present Guest Editor, Special Topics issue on "Closing the loop around neural systems" Frontiers in Neuroscience, 2012. Reviewer for Nature, Science, PLoS, Neuron, Nature Neuroscience, Journal of Neurophysiology, Journal of Neuroscience, Journal of Neural Engineering, etc. Special Local Responsibilities: University Physical Biology Curriculum Committee, 1971-73

Graduate School Research Fund: Biomedical Science Research Project Committee, 1978-80 Faculty Senate, 1985-87 School of Medicine Research Proposals Study Section, Alcohol and Drug Abuse Institute, 1976-77 Department of Physiology & Biophysics Teaching Evaluation Committees (Chairman six years) Graduate School Fund Committee (Chairman), 1984-85 Issues in Neurobiology seminar series organizer, 1988-1998 Chairman, Search Committee for Primate Neuroscientist faculty member, 2012. Neurobiology and Behavior Interdisciplinary Program Seminar series organizer, 1998-1999 Washington National Primate Research Center Scientific Advisory Committee 1995-2000 Search Committee Neuroscience Core Staff, member 1994-5 Search Committee for Director of RPRC 1995 Head of Neuroscience Division 1995 - 99 Chairman, Search Committee for Cognitive Neuroscientist Core Staff, 1997 Associate Director for Neuroscience, 1999 – 2005 Head of Neuroscience Division 2012-2015 Scientific Steering Committee, 2012-2015 Chairman, Search Committee for Cognitive Neuroscientist Core Staff, 2011-2013 Search Committee for Director of WaNPRC, 2012-2013 Allen Institute for Brain Science, Center Advisory Council, 2008 Thrust Leader, (Experimental Neuroscience) Center for Sensorimotor Neural Engineering/ Center for Neurotechnology (NSF-ERC) 2016 - 2022 <u>Previous Research Support (selected)</u> Neural Control of Muscle Activity; Fetz (PI); NIH/NINDS RO1 NS12542 09/30/1978 – 06/30/2023 Washington National Primate Research Center; Sullivan (PI); NIH/NCRR RR00166

5/1/16-4/30/26

- Center for Neurotechnology; Rao (PI); NSF Engineering Research Center; 07/11/2011-07/14/2021
- Vagus Nerve Stimulation to Augment Targeted Cortical Plasticity and Sensory Discrimination; Fetz (co-PI); DARPA 03/01/2018-06/10/2019
- Implantable Computers to Augment Brain Function; Fetz (PI); W. M. Keck Foundation 1/1/11-12/31/13

Alfred P. Sloan Research Fellowship, 9/16/1972-9/15/1974.

Neural Network Models of the Primate Motor System; Fetz (PI) Office of Naval Research, 1/12/1988-6/30/1991.

Symposia Organized and Chaired

- Symposium on "Properties of Single Cells in Vertebrate Motor Systems Revealed by Spike-Triggered Averaging"; Society for Neuroscience 8th Annual Meeting, St. Louis, MO, 1978
- Pacific Cascade Chapter of Society for Neuroscience Annual Meeting, Seattle, WA, 1981 Symposium on "Cortical Involvement in Movement", XXIXth Congress of IUPS, Sydney,
- Australia, 1983
- Workshop on "Effectiveness of Synaptic Connections: New Evidence from the Ia-motoneuron Synapse"; Winter Conference on Brain Research, Vail, Colo., Jan 28-Feb 1, 1984
- International Symposium on Neural Control of Limb Movement (Satellite of XXXth Congress of IUPS); Seattle, WA, July 9-11, 1986
- Symposium on "Neural network modelling and mechanisms of distributed parallel processing" American Physiological Society Fall Meeting, San Diego, CA, Oct. 11- 15, 1987
- Symposium on "Mechanisms of Voluntary Movement", XXXI Congress of IUPS, Helsinki, Finland, July 9-14, 1989
- Symposium on "Neural network models of motor systems", Conference on Neural Control of Movement, Marco Island, Florida, April 6-11, 1991.
- Debate forum on "Does the cortex use temporal coding?" Fourth IBRO World Congress, Kyoto, Japan, July 9-14, 1995.

- Symposium: Distinguishing Reflex Responses and Triggered Reactions. Sensory and Biomechanical Contributions to Posture and Gait, Cozumel, Mexico, April 13-16, 1997.
- Symposium on "Representation and Distributed Coding" Computational Motor Control Meeting, Key West, FL, April 19 22.
- Panel on "Spinal cord mechanisms mediating behavior: new perspectives" Neural Control of Movement Meeting, Kauai, HI, April 11-15, 1999.

Symposia Participation:

- Winter Conference for Brain Research [first meeting], Tahoe City, California, January, 1968 Neural Control of Motor Performance (IUPS Satellite); Zürich, Switzerland, August 7-8, 1971 Autoregulation of Electrical Activity of the Brain; Santa Ynez, California, Aug. 1-4, 1972
- International Symposium on Pain; Issaquah, WA, May 21-26, 1973
- International Symposium on "Control of Posture and Locomotion"; Edmonton, Canada, Aug. 20-22, 1973
- NATO Symposium on "Biofeedback and Behavior"; Munich, Germany, July 27-30, 1976
- Winter Conference for Brain Research, Keystone, Colorado January 26, 1978
- IBRO Symposium on "Reflex Control of Posture and Movement"; Pisa, Italy, September 11-14, 1978
- European Neuroscience Meeting, Florence, Italy, September 5-8, 1978
- Taneguchi Symposium on "Neurobiological Basis of Learning and Memory"; Ohtsu-shi, Japan, Oct. 23-25, 1978
- Symposium on "Properties of Single Cells in Vertebrate Motor Systems Revealed by Spike-Triggered Averaging" (organizer and speaker); Society for Neuroscience 8th Annual Meeting, St. Louis, MO, Nov. 5-9, 1978
- Cold Spring Harbor Neurobiology Course; Long Island, NY, June, 1981
- Symposium on "Conditioning; Representation of Involved Neural Function"; Asilomar, CA, Oct. 25-27, 1981
- Behavioral Correlates of Identified Cortical Neuronal Types; Neuroscience Institute Conference, Rockefeller Univ., NY, June 14-16, 1982
- Multidisciplinary Approach to Motor Behavior; Zuoz Winterschool, Zuoz, Switzerland, 1982
- Dynamic Aspects of Neocortical Function, Salk Institute, La Jolla, CA, Oct. 3-7, 1982
- Physiological Society Symposium on "Synchrony of Discharge in the Nervous System", University College, London, England, March 28, 1983
- Symposium on "Functional Organization of Spinal Cord and its Descending Control", Canberra, Australia, August 22-26, 1983
- Symposium on "Cortical Control of Movement" (organizer), IUPS Physiology Congress, Sydney, Australia, September Aug 28 Sept.2, 1983
- Invited participant, International Symposium on "Oculomotor and Skeletal Motor Systems", Düsseldorf Germany, Sept. 15 21, 1984
- Winter Conference for Brain Research, Vail, Colorado, Jan 26-Feb 2, 1985 (workshop organizer)
- Co-organizer, International Symposium on "Neural Control of Limb Movement", Seattle, WA, July 9 11, 1986
- Symposium on Neural Networks, Fogarty Center, National Institutes of Health, Bethesda, Nov. 17-19, 1986
- Winter Conference for Brain Research, Vail, Colorado, Jan 24-31, 1987.

- Ciba Foundation Symposium on "Motor Areas of Cerebral Cortex", London, England, Feb. 23-26, 1987
- Symposium on "Neurobiology of Learning", Tallahassee, FL, April 1-3, 1987
- Symposium on "Neural network modeling and mechanisms of distributed parallel processing" (organizer), American Physiological Society Fall Meeting, San Diego, CA, Oct. 11- 15, 1987
- Symposium on "Neural Information Processing Systems", Denver, CO Nov. 8-12, 1987.
- Symposium on "Afferent Control of Posture and Locomotion", Rheinfelden, Switzerland, September 1-4, 1988.
- Symposium on "Sensorimotor Integration", European Neuroscience Association Annual Meeting, Zürich, Switzerland, September 6, 1988.
- International Symposium on "Neuroscience inspired by Pat Wall", Woods Hole, May 8-11, 1989.
- Symposium on "Mechanisms of Voluntary Movement" (co-organizer and speaker), XXXI Congress of IUPS, Helsinki, Finland, July 9-14, 1989.
- Goetz Symposium on Biocybernetics and Neuroinformatics, University of Zürich, Zürich, Switzerland, November 9-10, 1989.
- IBRO Second Intensive Workshop on Basic Neuroscience, Shanghai, China, Sept. 11-22, 1989.
- First Australian Conference on Neural Networks, Sydney, Australia, January 29-31, 1990 (invited keynote speaker).
- International Symposium on "Neural Networks for Sensory and Motor Systems", Düsseldorf, Germany, March 22-24, 1990.
- International Joint Conference on Neural Networks, San Diego, CA, June 17-21, 1990.
- Symposium on "Controversies in Neurosciences: Motor Control", Portland Oregon, September 22-23, 1990.
- Symposium on "Neural network models of motor systems" (organizer), Conference on Neural Control of Movement, Marco Island, Florida, April 6-11, 1991.
- International Joint Conference on Neural Networks, Seattle, WA, July 8-12, 1991.
- Workshop on "Neural Computation" European Neuroscience Association 14th Annual Meeting, Cambridge, England, September 8, 1991
- Symposium on "Reaching and Manipulation" European Neuroscience Association 14th Annual Meeting, Cambridge, England, September 9-12, 1991
- Symposium on "Neural network models of sensorimotor systems", Society for Neuroscience 21st Annual Meeting, New Orleans, LA, Nov. 10-15, 1991.
- Symposium on "Neural Control of Movement in Vertebrates", Fondacion Juan March, Madrid, Spain, Nov. 27-30, 1991.
- Two symposia on motor control, Conference on Neural Control of Movement, Marco Island, Florida, April 21-25, 1992.
- International Conference on "Functional Analysis of the Brain Based on Multiple-Site Recording" Aussois, France, Oct. 12-14, 1992.
- VIII TMIN International Symposium on "Role of the Cerebellum and Basal Ganglia in Voluntary Movement", Tokyo, Japan, Nov. 17-20, 1992.
- Winter Conference on Brain Research, Whistler B.C., Canada, January 23-30, 1993
- Bat Sheva Seminar on "Neurons and Neuronal Networks in the Motor System", Jerusalem, Israel, March 14-25, 1993.
- Gentner Symposium on "Neurophysiology and Neuroinformatics", Schellerhau, Germany, Oct. 17-22, 1993.

- Symposium on "Cortical Control of Limb Movement" SUNY Health Science Center, Syracuse, New York, Nov. 13, 1993.
- Winter Conference on Brain Research, Snowbird, Utah Jan 22-29, 1994.
- Alberta Motor Control Meeting, Kananaskis, Alberta, Cananda, March 25-27, 1994.
- Symposium on "Dynamics of Neural Processing", Washington DC. June 6-8, 1994.
- European Neuroscience Association Annual Meeting, Vienna, Austria, September 4-8, 1994.
- Winter Conference on Brain Research, Steamboat Springs, Colorado, Jan 21-28, 1995.
- Neural Control of Movement, Key West, Florida, April 18-25, 1995
- Conference on "Visuomotor Control", Montreal, Quebec, May 11 12, 1995
- Fourth IBRO World Congress, (Symposium organizer), Kyoto, Japan, July 9-14, 1995.
- Supraspinal Control of Movement in Cats and Primates" Panum Institute, Copenhagen, Denmark October 6-7, 1995
- Workshop on Glutamate Toxicity in ALS, San Francisco, CA, January 18-19, 1996.
- Neural Control of Movement, Cancun, Mexico, April 8-13, 1997
- Sensory and Biomechanical Contributions to Posture and Gait, Cozumel, Mexico, April 13-16, 1997.
- Symposium on "From Attention to Action", Center for Neural Science, NYU, New York, June 9-12, 1997
- Novartis Foundation Symposium on "Sensory Guidance of Movement", London, England, Jan. 20 22, 1998.
- International Titisee Conference on "The Role of Time in Neuronal Processing", Titisee, Germany, March 4 8, 1998.
- Neural Control of Movement, Key West, FL, April 14-19, 1998.
- Computational Motor Control Meeting, Key West, FL, April 19 22, 1998.
- European Neuroscience Association meeting, Berlin, Germany, June 26- July 1, 1998.
- UW/MSR Summer Institute on Intelligent Systems, Seattle and Friday Harbor Labs, WA, August 17-22, 1998
- Winter School on "Neurophysics and Physiology of the Motor System", Les Houches, France, Feb. 7 13, 1999.
- Neural Control of Movement Meeting, Kauai, HI, April 11-15, 1999.
- International Workshop "Aspects of Neuronal Dynamics", Delmenhorst, Germany, April 5-9, 2000
- Satellite Symposium: "Synchrony 2000", London, UK, June 23, 2000
- Federation of European Neuroscience Societies, Brighton, UK, June 24-28, 2000
- Symposium on "Command Signals from the Brain", University of Southern California, Los Angeles CA, July 8, 2000.
- Workshop on "Mechanisms of Persistent Neural Activity", Banbury Center, Cold Spring Harbor Laboratory, Long Island, NY, October 1-4, 2000.
- International Union of Physiological Sciences, Christchurch, New Zealand, August 26-31, 2001. International Symposium on "Movement and Sensation", Cairns, Australia, Sept, 3-6, 2001.
- Segerfalk Symposium on "Principles of Spinal Cord Function, Plasticity and Repair", Ystad Saltsjöbad, Sweden, September 22-25, 2001.
- Trimester in Computational Neuroscience: Functional representations and dynamics of neural assemblies, Institut Henri Poincare, Paris, France, March-April, 2002.
- International Symposium on "Motor Control and Proprioception", Paris, France, July 9-12, 2002. Neural Prosthesis Workshop, Bethesda, MD, October 21-23, 2003.

- "In the Scientist's Mind" Group artwork exhibit, Gallery at the Shoreline Center, Shoreline, WA May 3 July 1, 2002.
- International Symposium on "Multidisciplinary Approaches to Sensorimotor Integration", Okazaki, Japan, March 15-18, 2004.
- British Neuroscience Association, Brighton, England, April 4, 2005
- American Society of Neurophysiological Monitoring Annual Meeting, Seattle, WA, May 4-7, 2006
- Symposium on "Physiology of brain-computer interfaces", Atlanta GA, October 13, 2006
- Symposium on "Brain-Machine Interfaces", Kyoto, Japan, November 7-8, 2006.
- 2nd International Institute for Neuroscience of Natal Neuroscience Symposium, Natal, Brazil, February 22-25, 2007.
- OIST Workshop on Cognitive Neurobiology, Okinawa, Japan, March 8-15, 2007

Pacific Cascade Chapter of Society for Neuroscience Spring Meeting, University of Washington, Seattle, WA April 6, 2007

- Symposium on "Promoting Neural Plasticity", Arizona State University, Tempe, AZ, Feb. 15, 2008.
- Christopher and Dana Reeve Foundation Spinal Cord Symposium, Atlanta, GA, May 9-11, 2008.
- Workshop on "Real-time brain interfacing applications", Mathematical Biosciences Institute, Ohio State University, Columbus, OH, May 12-15, 2008.
- Symposium on Translational Neuroscience, University of Chicago, Chicago, Illinois, May 22-23, 2008.
- Pacific Northwest Center for Neural Engineering Workshop, invited keynote speaker, Microsoft, Redmond, WA, October 9-11, 2008.
- Workshop on "Translational Research in Sensorimotor Integration and Transformation", Washington DC, November 14–15, 2008.
- Workshop on "Harnessing Neuroplasticity for Human Applications", Washington DC, April 21-22, 2009.
- Neural Control of Movement Satellite Meeting, Waikoloa, HI April 26-29, 2009

Inaugural Lecture, Neurosciences Research Program 75th Meeting, The Neurosciences Institute, San Diego, CA March 1-4, 2009

- Keynote Address, Society for Neuroscience Northwest Chapter Meeting, Western Washington University, Bellingham WA, October 3, 2009
- Neurosciences Research Program 76th Meeting, The Neurosciences Institute, San Diego, CA March 14-17, 2010
- Meeting on "Analysis of Multi-electrode Neural Recordings and Modeling of Neuronal Ensemble Activity", UCLA, Los Angeles, CA, May 8, 2010
- Keynote Address, Lehman Symposium, University of Washington, Seattle, May 13, 2010
- Fourth International Brain-Computer Interface Meeting, Asilomar, Monterey, CA, May 31-June 4, 2010
- AREADNE Conference, Santorini, Greece, June 17-21, 2010
- Brain-Machine Interfaces Symposium, Ystad, Sweden, August 26-29, 2010
- Aspen Brain Forum "Building Better Brains", Aspen, CO September 23-25, 2010.
- Brain Computer Interfacing in 2011, University Medical Center, Utrecht, The Netherlands, May 20 & 21, 2011.
- Neurosciences Research Program 77th Meeting, The Neurosciences Institute, San Diego, CA, April 15-17, 2012

- The Versatile Brain: Structures, Functions and Pathologies, Inaugural Conference of the Institut de Neurosciences de la Timone, Marseille, France, September 20-21, 2012.
- International Symposium on Cognitive Neuroscience Robotics, University of Washington, Seattle, WA, January 31-February 1, 2013.
- The Neurosciences Institute, La Jolla, CA, March 12-13, 2013.
- International Workshop on Clinical BMI Systems, Houston, TX, February 25-27, 2013.
- Keynote Address, New Approaches to Nervous System Rehabilitation, Dallas, TX, April 26, 2013.
- Organization for Human Brain Mapping Annual Meeting, Seattle, WA, June 16-20, 2013.
- Symposium on Nano and Micro Systems, Seattle, WA, July 8, 2013.
- Symposium on "Motor Control from neural circuits and diseases to neuroprosthetics" Lausanne, Switzerland, August 28-30, 2013.
- Barcelona Cognition, Brain and Technology Summer School, Barcelona, Spain, September 2-7, 2013.

ESF-FENS Conference on "The Dynamic Brain – The Neurobiology of Action", Stresa, Italy, October 20-23, 2013.

- Bial Foundation Symposium on "Behind and Beyond the Brain" Porto, Portugal, March 26, 2014. Keynote lecture.
- Symposium on Sensorimotor Rehabilitation, University of Montreal, Canada, May 12, 2014, Plenary lecture.
- Symposium commemorating Dr. George A. Ojemann, University of Washington, Seattle, WA September 26, 2014.
- 2014 Austin Translational Neuroscience Symposium, Austin, Texas, December 5-6, 2014. Keynote Address.
- Real-time Functional Imaging and Neurofeedback, University of Florida, Gainesville, FL, February 12-13, 2015.
- 2015 International Workshop on Clinical Brain-Machine Interfaces, Tokyo, Japan, March 13-15, 2015.
- British Neuroscience Association Meeting, Edinburgh, Scotland, April 12-16, 2015.
- 2015 Alberta Motor Control Meeting, Jasper, Alberta, Canada, September 25, 2015.
- The Neuroscience Workshop Saclay: "New Concepts in Neuronal Pattern Encoding" Gif-Sur-Yvette, France, January 28-29, 2016.
- Brain-Computer Interfaces Past Present and Future, Asilomar, California May 30-June 2, 2016. Keynote Address
- Federation of Neuroscience Societies (FENS) meeting, Copenhagen, Denmark, July 5, 2016.
- Primate Neuroscience Symposium, Deutsches Primatenzentrum, Göttingen, Germany, March 6-8, 2017
- Neural Interfaces Conference 2018, Minneapolis MN, June 25-27, 2018
- Neurofutures Conference, Seattle, WA June 29-29, 2018
- Society for Neuroscience 2018, Special Lecture, San Diego, CA November 4, 2018
- DARPA Targeted Neuroplasticity Training Symposium, Boulder CO, March 13-15, 2019.
- Symposium on "Functional Significance of Oscillatory Brain Activity and Closed-loop Stimulation", UC Davis, May 9, 2019.
- H.D. Patton Departmental Retreat, Leavenworth WA, September 12-13, 2019.
- Neuroprosthetics Symposium [international Zoom meeting] July 22, 2020
- Neuroscience and Artificial Intelligence, University of Washington, Seattle, WA, September 27-30, 2022

Society for Neural Control of Movement, Dubrovnik, Croatia, April 15-19, 2024

Invited Lectures:

University of California, San Francisco, California, September 7, 1977 Johns Hopkins University, Baltimore, MD, October 14, 1977 Brown University, Providence, RI, October 21, 1977 Columbia University, New York, NY, November 28, 1977 University of Massachusetts, Amherst, Mass, December 5, 1977 Massachusetts Institute of Technology, Cambridge, Mass, December 15, 1977 Harvard Medical School, Brookline, Mass., January 5, 1978 Upstate Medical Center, SUNY, Syracuse, NY, January 15, 1978 University College London, London UK, February 6, 1978 University of Goteborg, Goteborg, Sweden, February 13 & 20, 1978 Sherrington School of Medicine, London, May 2, 1978 Karolinska Institute, Stockholm, Sweden, June 20, 1978 Sechenov Institute, Leningrad, Russia, June 23, 1978 University of Zurich, Zurich, Switzerland, July 5, 1978 University of Fribourg, Fribourg, Switzerland, July 19, 1978 University of Lausanne, Lausanne, Switzerland, July 20, 1978 University of Heidelberg, Heidelberg, Germany, August 4, 1978 Neurological Surgery, University of Washington, Seattle, WA, April 18, 1979 University of Toronto, Toronto, Canada, May 27, 1980 Emory University, Atlanta, Georgia, February 10, 1981 Electrical Engineering Dept., University of Washington, Seattle, WA, November 7, 1990 University of California, San Diego, San Diego, CA, May 16, 1991 University of Calgary, Calgary Canada, March 24, 1994 Marburg University, Marburg, Germany, May 29, 1997 Sherrington School, St. Thomas' Hospital, London, June 6, 1997 Emory University, Atlanta, GA, April 23, 1998 Max Planck Institut für Hirnforschung, Frankfurt, Germany, June 23, 1998 Johns Hopkins University, Baltimore, MD, Sept. 27, 1999 California Institute of Technology, Pasadena, CA, Jan. 20, 2000 University of Texas Medical Branch, Galveston, TX, Feb. 16, 2000 Zen Center of Los Angeles, Nov. 11, 2000 Institute of Neurology, Queen Square, London, Jan. 18, 2001 Northwestern University, Chicago, IL May 3, 2001 Northwestern University, Evanston, IL May 4, 2001 College de France, Paris, France, March 12 & 26, 2002 Institut Henri Poincare, Paris, France, April 3 & 10, 2002 Institut des Sciences Cognitives, Lyon, France, April 5, 2002 Duke University, Durham, NC, May 23, 2002 Oregon Primate Center, Beaverton, OR, June 3, 2002 University of Chicago, Chicago, IL, June 6, 2002 University of Arizona, Tucson, AZ, Sept. 27, 2002 University of Rochester, Rochester, NY, March 6, 2003

State University of New York, Syracuse, NY, March 7, 2003 University of Pittsburgh, Pittsburgh PA, August 21, 2003 University of Pennsylvania, Philadelphia PA, August 23, 2003 Neural Prosthesis Workshop, NIH, Bethesda, MD, October 23, 2003 Primate Research Institute, Inuyama, Japan, April 7, 2004 National Institute for Physiological Sciences, Okazaki, Japan, April 8, 2004 University of California, Los Angeles, CA, August 12, 2004 Wissenschaftkolleg zu Berlin, Berlin, Germany, November 11, 2004 University of Sussex, Brighton, England, April 5, 2005 Max Planck Institut für Hirnforschung, Frankfurt, Germany, April 18, 2005 Zentrum für Literaturforschung, Berlin, Germany, June 15, 2005 Wadsworth Center, Albany, NY, June 8, 2006 Brown University, Providence, RI, June 13, 2006 Massachusetts Institute of Technology, Cambridge, MA, June 14&15, 2006 Zen Center of Los Angeles, Los Angeles, CA, October 1, 2006. RIKEN, Tokyo, Japan, November 16, 2006 Case Western University, Cleveland Ohio, December 7 & 8, 2006. California Institute of Technology, Pasadena, CA, January 12, 2007 Bioengineering Department, University of Washington, Seattle, WA, February 8, 2007 2nd Neuroscience Symposium, International Institute for Neuroscience of Natal, Natal, Brazil, February 23, 2007 Okinawa Institute of Science and Technology, Okinawa, Japan, March 12, 2007 Inaugural CCNS Invited Lecture, Washington University, St. Louis MO, April 25, 2007 University of Southern California, Los Angeles, CA, May 17, 2007 Neurological Surgery Grand Rounds, University of Washington, Seattle, WA, Sept. 12, 2007 University of Maryland, Baltimore, MD, October 11, 2007 The Johns Hopkins University, Baltimore, MD, October 12, 2007 Neurological Sciences Institute, Beaverton, OR, October 23, 2007 Northwestern University, Evanston, IL December 13, 2007 Northwestern University, Chicago, IL December 14, 2007 Physiology & Biophysics Departmental Seminar, University of Washington, Seattle WA, January 9, 2008 Stanford University, Palo Alto, CA, February 7, 2008 Physics Departmental Seminar, University of Washington, Seattle WA, March 10, 2008 University of Tennessee, Memphis, Tennessee, March 25, 2008. Translational Neuroscience Symposium, University of Chicago, Chicago, Illinois, May 23, 2008 University of California, Berkeley, California, June 16-17, 2008. Society for Neuroscience Symposium on "Advanced Neurotechnologies", Washington DC, November 17, 2008. University of California, Irvine, California, January 8, 2009. Washington State University, Pullman, WA January 29, 2009. Neurosciences Research Program, San Diego, CA, March 2, 2009 UW Photographers Group, Seattle, WA, April 14, 2009 Department of Rehabilitation Medicine Seminar, University of Washington, Seattle WA, May 11.2009 Eberhard-Karls-Universität Tübingen, Germany, May 19, 2009 Bernstein Center, Freiburg, Germany, May 20, 2009

- University of Lund, Lund, Sweden, May 25, 2009
- University of Alberta, Edmonton, Alberta, Canada, July 20, 2009
- Western Washington University, Bellingham, WA, October 3, 2009
- The Neurosciences Institute, La Jolla, CA, November 11, 2009
- The Miami Project, Miami, FL, December 2, 2009
- University of Utah, Salt Lake City, UT, December 18, 2009
- University of Florida, Gainesville, FL, February 4, 2010
- Emory University, Atlanta, GA, February 19, 2010
- The Neurosciences Institute, La Jolla, CA, March 16, 2010
- Oregon Health Sciences University, Portland, OR, April 27, 2010
- Lehman Symposium, Department of Rehabilitation Medicine, University of Washington, Seattle, May 13, 2010
- Eberhard-Karls-Universität Tübingen, Tübingen, Germany, June 30, 2010
- Grand Rounds, University of South Carolina School of Medicine, Charleston, South Carolina, November 4, 2010
- Zen Center of Los Angeles, Nov. 18, 2010
- Fred Samson Lecture, University of Kansas Medical School, Kansas City, KS, March 7, 2011
- Universität Zürich, Zürich, Switzerland, May 25, 2011
- École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, May 26, 2011
- Erasmus University, Rotterdam, Netherlands, June 6, 2011
- Max Planck Institute for Biological Cybernetics, Tübingen, Germany, June 20, 2011
- Patton Symposium, Leavenworth, WA, September 15, 2011
- Tomorrow Today Symposium, UW Medicine, Seattle, WA, September 21, 2011.
- Wadsworth Center, Albany, NY, October 20, 2011
- Keynote presentation, Carnegie Mellon "2012 Bioimage and Biosignal Processing Day", Pittsburgh, PA, February 21, 2012.
- 50th Anniversary of Neurosciences Research Program invited talk, The Neurosciences Institute, La Jolla, CA, April 17, 2012.
- Seattle Robotics Society, Renton Technical College, Renton, WA, August 11, 2012.
- The Salk Institute, La Jolla, CA, August 27, 2012.
- IEEE EMBC meeting, San Diego, CA, August 28, 2012.
- PULSe seminar, Purdue University, West Lafayette, IN, November 12, 2012.
- University of Florida, Gainesville, FL, February 28, 2013.
- Neurosciences Institute, La Jolla, CA, March 27, 2013.
- Medtronic Company, Minneapolis, MN, May 1, 2013.
- University of Minnesota, Minneapolis, MN, May 2, 2013.
- Center for Integrative Brain Research, Seattle Children's Research Institute, Seattle, WA, June 28, 2013.
- 11th NAMIS Workshop, University of Washington, July 7-10, 2013.
- Italian Institute of Technology, Genoa, Italy, October 25, 2013.
- University of Parma, Parma, Italy, October 28, 2013.
- Bial Foundation Symposium on "Behind and Beyond the Brain" Porto, Portugal, March 26, 2014. Keynote lecture.
- Symposium on Sensorimotor Rehabilitation, University of Montreal, Canada, May 12, 2014, Plenary lecture.
- Neurofutures Meeting, Seattle, Washington, June 17, 2014.

Public Lecture on "Art and the Brain", University of Freiburg, Freiburg, Germany, July 14, 2014. Brain Machine Interface Workshop, Freiburg, Germany, July 22, 2014. Seminar, Bernstein Center, Freiburg, Germany, July 28, 2014. Japanese Society for Neuroscience, Yokohama, Japan, September 11, 2014. Keynote Lecture for "Frontiers of System Neuroscience of Motor Control" an "Honorary Symposium for Dr. Eberhard Fetz", National Center of Neurology and Psychiatry, Tokyo, Japan, September 14, 2014. Keynote Lecture for Pavlovian Society Annual Meeting, Seattle, Washington, September 20, 2014. Invited lecture, Zhejiang University, Hangzhou, China October 28, 2014. Keynote Lecture for 2014 Austin Translational Neuroscience Symposium, Austin Texas, December 5, 2014. Keynote Lecture for symposium on Real-time Functional Imaging and Neurofeedback, University of Florida, Gainesville, FL, February 12-13, 2015. Seminar, National Institute of Physiological Sciences, Okazaki, Japan, March 11, 2015. Seminar, Advanced Telecommunications Research Institute TR, Kyoto, Japan, March 12, 2015. 2015 International Workshop on Clinical Brain-Machine Interfaces, Tokyo, Japan, March 13-15, 2015. British Neuroscience Association Meeting, Edinburgh, Scotland, April 12-16, 2015. Two seminars, University of Newcastle, Newcastle, England. April 16 & 17, 2015. Seminar, University College London, England, April 27, 2015. 2015 Alberta Motor Control Meeting, Jasper, Alberta, Canada, September 25, 2015. Seminar, University of Alberta, Edmonton, Alberta, Canada, September 29, 2015. Seminar, Columbia University, New York, N.Y. December 17, 2015. Seminar, Stanford University, Menlo Park, CA, April 11, 2016. Seminar, Bernstein Center, Berlin, Germany June 27, 2016 Federation of Neuroscience Societies (FENS) meeting, Copenhagen, Denmark, July 5, 2016. Seminar, National Institutes of Health, Bethesda, MD, October 3, 2016. Seminar, New York University, New York, NY, October 31, 2016. Seminar, Feinstein Institute, Manhasset, New York, November 3, 2016. Seminar, University of California, San Francisco, CA, November 29, 2016. Seminar, Ernst Strüngmann Institute/Max Planck Institute, Frankfurt, Germany, March 15, 2017. Seminar, Harvard University, Cambridge, MA, October 17, 2017. Wyss Center for Bio and Neuroengineering, Geneva, Switzerland, March 9, 2018. Seminar, Burke Medical Research Institute, White Plains, NY July 17, 2018. Society for Neuroscience Special Lecture, San Diego, CA Nov. 4, 2018 Zen Center of Los Angeles, Nov. 11, 2018 UW Institute for Neuroengineering, University of Washington, Seattle, WA, April 10, 2019 University of California Davis, May 9, 2019 Seminar, University of Wyoming [via Zoom] January 27, 2022 Seminar, National Center for Adaptive Neurotechnologies, Albany NY, [via Zoom] April 25, 2023 Keynote Lecture, Society for Neural Control of Movement, Dubrovnik, Croatia, April 19, 2024

EBERHARD E. FETZ PUBLICATIONS

- 1. Fetz, E.E. and Gerstein, G.L. An RC model for spontaneous activity of single neurons. Quarterly Progress Report #71, Research Laboratory of Electronics, M.I.T., pp. 249-257, 1963.
- 2. Fetz, E.E. Pyramidal tract effects on interneurons in the cat lumbar dorsal horn. <u>Journal</u> of Neurophysiology 31:69-80, 1968.
- 3. Fetz, E.E. Operant conditioning of cortical unit activity. <u>Science 163</u>:955-958, 1969.
- 4. Miller, J.M., Kimm, J., Clopton, B. and Fetz, E.E. Sensory neurophysiology and reaction time performance in non-human primates. In: ANIMAL PSYCHOPHYSICS, W.C. Stebbins, ed. New York: Appleton-Century-Crofts, pp. 303-327, 1970.
- Fetz, E.E. and Finocchio, D.V. Operant conditioning of specific patterns of neural and muscular activity. <u>Science 174</u>:431-435, 1971. Reprinted in: BIOFEEDBACK AND SELF-CONTROL, J. Stoyva et al., eds. Chicago: Aldine-Atherton, pp. 233-234, 1972. Reprinted in: BRAIN UNIT ACTIVITY AND BEHAVIOR, M.I. Phillips, ed. Springfield, IL: Charles C. Thomas, pp. 301-313, 1973.
- 6. Fetz, E.E. and Finocchio, D.V. Operant conditioning of isolated activity in specific muscles and precentral cells. <u>Brain Research 40</u>:19-23, 1972.
- 7. Fetz, E.E. and Baker, M.A. Operantly conditioned patterns of precentral unit activity and correlated responses in adjacent cells and contralateral muscles. <u>Journal of Neurophysiology 36</u>:179-204, 1973. Reprinted in: BIOFEEDBACK AND SELF-CONTROL, L. Dicara et al., eds. Chicago: Aldine-Atherton, 1974.
- 8. Courtney, K.R. and Fetz, E.E. Unit responses recorded from cervical spinal cord of awake monkey. <u>Brain Research 53</u>:445-450, 1973.
- 9. Wyler, A.R., Fetz, E.E. and Ward, A.A., Jr. Spontaneous firing patterns of epileptic neurons in the monkey motor cortex. <u>Experimental Neurology 40</u>:567-585, 1973.
- 10. Fetz, E.E. and Wyler, A.R. Operantly conditioned firing patterns of epileptic neurons in the monkey motor cortex. <u>Experimental Neurology 40</u>:586-607, 1973.
- 11. Fetz, E.E., Finocchio, D.V. and Baker, M.A. Motor fields of precentral cells elicited by operant reinforcement of unit activity. In: CONTROL OF POSTURE AND LOCOMOTION, R.B. Stein at al., eds. New York: Plenum Press, pp. 187-190, 1973.
- 12. Wyler, A.R., Fetz, E.E. and Ward, A.A., Jr. Injury-induced long-first-interval bursts in cortical neurons. <u>Experimental Neurology 41</u>:773-776, 1973.
- 13. Wyler, A.R. and Fetz, E.E. Behavioral control of firing patterns of normal and abnormal neurons in chronic epileptic cortex. <u>Experimental Neurology 42</u>:448-464, 1974.
- 14. Glotzner, F., Fetz, E.E. and Ward, A.A., Jr. Neuronal activity in the chronic and acute epileptogenic focus. <u>Experimental Neurology 42</u>:502-518, 1974.
- 15. Wyler, A.R., Fetz, E.E. and Ward, A.A., Jr. Antidromic and orthodromic activation of epileptic neurons in neocortex of awake monkey. <u>Experimental Neurology 43</u>:59-74, 1974.
- 16. Wyler, A.R., Fetz, E.E. and Ward, A.A., Jr. Effects of operantly conditioning epileptic unit activity on seizure frequencies and electrophysiology of neocortical experimental foci. <u>Experimental Neurology 44</u>:113-125, 1974.

- 17. Fetz, E.E. Operant control of single unit responses and correlated motor response. In: OPERANT CONTROL OF BRAIN ACTIVITY, M.H. Chase, ed. UCLA: Brain Research Institute, pp. 61-92, 1974.
- 18. Fetz, E.E. and Barensten, R.I. An electronic activity integrator for operant conditioning of patterns of neural and muscular activity. <u>Electroencephalography and Clinical</u> <u>Neurophysiology 38</u>:87-89, 1975.
- 19. Fetz, E.E. and Finocchio, D.V. Correlations between activity of motor cortex cells and arm muscles during operantly conditioned response patterns. <u>Experimental Brain</u> <u>Research 23</u>:217-240, 1975.
- 20. Wyler, A.R., Fetz, E.E. and Ward, A.A., Jr. Firing patterns of epileptic and normal neurons in the chronic alumina focus of undrugged monkeys during different behavioral states. <u>Brain Research 98</u>:1-20, 1975. Reprinted in: BIOFEEDBACK AND SELF-CONTROL, Barber et al., eds. Chicago: Aldine-Atherton, 1976.
- 21. German, D.C. and Fetz, E.E. Responses of primate locus coeruleus and subcoeruleus neurons to stimulation at reinforcing brain sites and to natural reinforces. <u>Brain Research</u> <u>109</u>:497-515, 1976.
- 22. Fetz, E.E., Cheney, P.D. and German, D.C. Corticomotoneuronal connections of precentral cells detected by postspike averages of EMG activity in behaving monkeys. Brain Research 114:505-510, 1976.
- 23. Fetz, E.E. Functional relations between primate motor cortex cells and arm muscles. In: PSYCHOLOGY OF MOTOR BEHAVIOR AND SPORT 1976, Vol. 1. Motor Behavior, R.W. Christina and D.M. Landers, eds. Champaign, Illinois: Human Kinetics Publ., pp. 202-206, 1977.
- 24. Fetz, E.E. Biofeedback and differential conditioning of response patterns in the skeletal motor system. In: BIOFEEDBACK AND BEHAVIOR, J. Beatty and H. Legewie, eds. New York: Plenum Press, pp. 413-426, 1977.
- 25. Bromberg, M.A. and Fetz, E.E. Responses of single units in cervical spinal cord of alert monkeys. <u>Experimental Neurology 55</u>:469-482, 1977.
- 26. Fetz, E.E. and Cheney, P.D. Muscle fields of primate corticomotoneuronal cells. <u>Journal</u> of Physiology (Paris) 74:239-245, 1978.
- 27. Ruch, T.C. and Fetz, E.E. The cerebral cortex: its structure and motor functions. Chapter 3 in: PHYSIOLOGY AND BIOPHYSICS, 20th edition, Vol. 1, T.C. Ruch and H.D. Patton, eds. Philadelphia: W.B. Saunders, pp. 53-122, 1979.
- 28. Fetz, E.E. and Cheney, P.D. Muscle fields and response properties of primate corticomotoneuronal cells. In: REFLEX CONTROL OF POSTURE AND MOVEMENT, (Progress in Brain Research Vol. 50), R. Granit and O. Pompeiano, eds. Elsevier/North-Holland: Biomedical Press, pp. 137-146, 1979.
- 29. Lüscher, H.R., Ruenzel, P., Fetz, E.E. and Henneman, E. Postsynaptic population potentials (PSPPs) recorded from ventral roots perfused with isotonic sucrose: connections of groups Ia and II spindle afferent fibers with large populations of motoneurons. Journal of Neurophysiology 42:1146-1164, 1979.
- 30. Fetz, E.E., Jankowska, E., Johannisson, T. and Lipski, J. Autogenetic inhibition of motoneurons by impulses in group Ia muscle spindle afferents. Journal of Physiology (London) 293:173-195, 1979.
- 31. Fetz, E.E. Properties of single cells in vertebrate motor systems revealed by spiketriggered averaging. Society for Neuroscience 8th Annual Meeting (BIS), pp. 11-32, 1979.

- 32. Fetz, E.E. Functional relations between primate motor cortex cells and forelimb muscles: coactivation and cross-correlation patterns. In: NEUROBIOLOGICAL BASIS OF LEARNING AND MEMORY, Y. Tsukada, and B. Agranoff eds. J. Wiley & Sons Inc., p. 113-122, 1980.
- 33. Fetz, E.E., Finocchio, D.V., Baker, M.A. and Soso, M.J. Sensory and motor responses of precentral cortex cells during comparable passive and active joint movements. Journal of <u>Neurophysiology 43</u>:1070-1089, 1980.
- 34. Soso, M.J. and Fetz, E.E. Responses of identified cells in post-central cortex of awake monkeys during comparable active and passive joint movements. Journal of <u>Neurophysiology 43:</u>1090-1110, 1980.
- 35. Fetz, E.E. and Cheney, P.D. Post-spike facilitation of forelimb muscle activity by primate corticomotoneuronal cells. Journal of Neurophysiology 44:751-772, 1980.
- 36. Cheney, P.D. and Fetz, E.E. Functional classes of primate corticomotoneuronal cells and their relation to active force. Journal of Neurophysiology 44:773-791, 1980.
- 37. Fried, I., Ojemann, G.A. and Fetz, E.E. Language-related potentials specific to human language cortex. <u>Science 212</u>:353-356, 1981.
- 38. Fetz, E.E. Book review of NEURAL MECHANISMS IN BEHAVIOR. In: <u>Epilepsia</u>, D. McFadden, ed. New York: Raven Press, 22:252-254, 1981.
- 39. Fetz, E.E. Neuronal activity associated with conditioned limb movements. In: HANDBOOK OF BEHAVIORAL NEUROBIOLOGY, Vol. II: Motor Coordination, A.L. Towe and E.S. Luschei, eds., pp. 493-526, 1981.
- 40. Fetz, E.E. Motor systems. In: ENCYCLOPEDIA OF SCIENCE AND TECHNOLOGY 5th edition. New York: McGraw-Hill, pp. 762-770, 1982.
- 41. Fetz, E.E. Role of motor cortex cells in control of operantly conditioned muscle activity. In: CONDITIONING: REPRESENTATION OF INVOLVED NEURAL FUNCTION, C. Woody, ed., New York: Plenum Press, pp. 281-292, 1982.
- 42. Fetz, E.E. and Gustafsson, B. Relation between shapes of postsynaptic potentials and changes in firing probability of cat motoneurons. Journal of Physiology 341:387-410, 1983.
- 43. Cheney, P.D. and Fetz, E.E. Corticomotoneuronal cells contribute to long-latency stretch reflexes in the rhesus monkey. Journal of Physiology 349:249-272, 1984.
- 44. Fetz, E.E. Functional organization of motor and sensory cortex: symmetries and parallels. In: DYNAMIC ASPECTS OF NEOCORTICAL FUNCTION, G.M. Edelman, W.E. Gall and W.M. Cowan, eds. John Wiley, 453-473, 1984.
- 45. Cheney, P.D., Kasser, R.J. and Fetz, E.E. Motor and sensory properties of primate corticomotoneuronal cells. <u>Experimental Brain Research, Suppl. 10</u>:211-231, 1985.
- 46. Cheney, P.D., and Fetz, E.E. Comparable patterns of muscle facilitation evoked by individual corticomotoneuronal (CM) cells and by single intracortical microstimuli in primates: Evidence for functional groups of CM cells. Journal of Neurophysiology 53:786-804, 1985.
- 47. Cheney, P.D., Fetz, E.E. and Palmer, S.S. Patterns of facilitation and suppression of antagonist forelimb muscles from motor cortex sites in the awake monkey. Journal of Neurophysiology 53:805-820, 1985.
- 48. Palmer, S.S. and Fetz, E.E. Discharge properties of primate forearm motor units during isometric muscle activity. Journal of Neurophysiology 54:1178-1193, 1985.

- 49. Palmer, S.S. and Fetz, E.E. Effects of single intracortical microstimuli in motor cortex on activity of identified forearm motor units in behaving monkeys. Journal of <u>Neurophysiology 54</u>:1194-1212, 1985.
- 50. Fetz, E.E., Cheney, P.D. and Palmer, S.S. Activity of forelimb motor units and corticomotoneuronal cells during ramp-and-hold torque responses: comparisons with oculomotor cells. <u>Progress in Brain Research 64</u>:133-141, 1986.
- 51. Schmied, A. and Fetz, E.E. Activity-related changes in electrical thresholds of pyramidal tract axons in the behaving monkey. <u>Exp. Brain Res. 65</u>:352-360, 1987.
- 52. Smith, W.S. and Fetz, E.E. Noninvasive brain imaging and the study of higher brain function in humans. In: HIGHER BRAIN FUNCTIONS RECENT EXPLORATIONS OF THE BRAIN'S EMERGENT PROPERTIES, S.P. Wise, ed. New York: Wiley, pp. 311-346, 1987.
- 53. Cheney, P.D., Mewes, K. and Fetz, E.E. Encoding of motor parameters by corticomotoneuronal (CM) and rubromotoneuronal (RM) cells identified by spike-triggered averaging in the awake monkey. <u>Behavioral Brain Research 28</u>:181-191, 1988.
- 54. Cope, T.C., Fetz, E.E. and Matsumura, M. Cross-correlation assessment of the synaptic strength of single Ia fibre connections with lumbar motoneurones in the cat. <u>J. Physiol</u> <u>390</u>:161-188, 1987.
- 55. Fetz, E.E. and Cheney, P.D. Functional relations between primate motor cortex cells and muscles: fixed and flexible. In: MOTOR AREAS OF THE CEREBRAL CORTEX, Ciba Foundation Symposium 132, New York, Wiley, pp. 98-112, 1987.
- 56. Komatsu, Y., Nakajima, S., Toyama, K. and Fetz, E.E. Intracortical connectivity revealed by spike-triggered averaging in slice preparations of cat visual cortex. <u>Brain</u> <u>Res. 442</u>:359-362, 1988.
- 57. Matsumura, M., Cope, T.C. and Fetz, E.E. Sustained excitatory synaptic input to motor cortex neurons in awake animals revealed by intracellular recording of membrane potentials. <u>Experimental Brain Res. 70</u>:463-469, 1988.
- 58. Fetz, E.E. Correlational strength and compatational algebra of synaptic connections between neurons. NEURAL INFORMATION PROCESSING SYSTEMS, Dana Z. Anderson, ed., American Institute of Physics, New York, pp. 270-277, 1988.
- 59. Fetz, E.E. Motor functions of cerebral cortex. In: TEXTBOOK OF PHYSIOLOGY, H.D. Patton, et al, eds. Saunders, New York, pp. 608-631, 1989.
- 60. Fuchs, A.F., Anderson, M.E., Binder M.D. and Fetz, E.E. The Neural Control of Movement. In: TEXTBOOK OF PHYSIOLOGY, H.D. Patton, et al, eds. Saunders, New York, pp. 503-509, 1989.
- 61. Smith, W.S. and Fetz, E.E. Effects of synchrony between corticomotoneuronal cells on post-spike facilitation of muscles and motor units, <u>Neuroscience Letters</u>, 96: 76-81, 1989.
- 62. Fetz, E.E. and Cheney, P.D. Functional properties of primate corticomotoneuronal cells: comparisons with spindle afferents and motor units, in THE SEGMENTAL MOTOR SYSTEM, M.D. Binder and L.M. Mendell, eds, Oxford University Press, New York, pp. 381-392, 1990.
- 63. Fetz, E.E., Cheney, P.D., Mewes, K. and Palmer, S. Control of forelimb muscle activity by populations of corticomotoneuronal and rubromotoneuronal cells, in PERIPHERAL CONTROL OF POSTURE AND LOCOMOTION, J.A.H. Allum and M. Hulliger, eds., Elsevier Press, Amsterdam, Progress in Brain Research 80: 437-449, 1989.
- 64. Kenyon, G.T., Fetz, E.E. and Puff, R.D. Effects of firing synchrony on signal propagation in layered networks, ADVANCES IN NEURAL INFORMATION PROCESSING

SYSTEMS 2, D.S. Touretzky, ed., Morgan Kaufmann Publishers, San Mateo, CA, pp. 141-148, 1990.

- 65. Fetz, E.E. Shupe, L.E. and Murthy, V. Neural networks controlling wrist movements, in <u>Proceedings of 1990 International Joint Conference on Neural Networks</u>, II: 675-679, 1990.
- 66. Fetz, E.E. and Shupe, L.E. Neural network models of the primate motor system, in ADVANCED NEURAL COMPUTERS, R. Eckmiller, ed., Elsevier North Holland/ Amsterdam, pp. 43 - 50, 1990.
- 67. Fetz, E.E. Review of THE MOTOR CORTEX by Hiroshi Asanuma, The Quarterly Review of Biology 65: 527-528, 1990.
- 68. Fetz, E.E. Toyama. K. and Smith, W. Synaptic interactions between cortical neurons, in CEREBRAL CORTEX, VOL IX ALTERED CORTICAL STATES, A. Peters and E. G. Jones, eds. Plenum Press, New York, 1-47, 1991.
- 69. Cheney, P.D., Fetz, E.E. and Mewes, K. Neural mechanisms underlying corticospinal and rubrospinal control of limb movements, <u>Progress in Brain Research</u>, 87: 213-252, 1991.
- 70. Fetz, E.E. Are movement parameters recognizably coded in activity of single neurons? <u>Behavioral and Brain Sciences</u>, <u>15</u>: 679-690, 1992.
- 71. Fetz, E.E. Saving the baby: Toward a meaningful reincarnation of single-unit data. <u>Behavioral and Brain Sciences, 15</u>: 838-842, 1992.
- 72. Flament, D., Fortier, P.A. and Fetz, E.E. Response patterns and post-spike effects of peripheral afferents in dorsal root ganglia of behaving monkeys, <u>Journal of Neurophysiology</u> 67: 875-889, 1992.
- 73. Murthy, V.N. and Fetz, E.E. Coherent 25-35 Hz oscillations in the sensorimotor cortex of the awake behaving monkey, <u>Proceedings of the National Academy of Sciences</u> 89: 5670-5674, 1992.
- 74. Kenyon, G.T., Puff, R.D. and Fetz, E.E. A general diffusion model for analyzing the efficacy of synaptic input to threshold neurons, <u>Biological Cybernetics</u>, 67: 133-141, 1992.
- 75. Fetz, E.E. Dynamic recurrent neural network models of sensorimotor behavior, in THE NEUROBIOLOGY OF NEURAL NETWORKS, Daniel Gardner, Ed. MIT Press, Cambridge MA, pp 165 190, 1993.
- 76. Murthy, V.N. and Fetz, E.E. Effects of input synchrony on the response of a model neuron, in COMPUTATION AND NEURAL SYSTEMS, F. Eekman and J. Bower, eds., Kluwer Academic Press, New York, NY, pp. 475-479, 1993.
- 77. Reyes, A.D. and Fetz, E.E. Two modes of interspike interval shortening by brief transient depolarizations in cat neocortical neurons, <u>Journal of Neurophysiology</u>, 69:1661-1672, 1993.
- 78. Reyes, A.D. and Fetz, E.E. Effects of transient depolarizing potentials on the firing rate of cat neocortical neurons, <u>Journal of Neurophysiology</u>, 69:1673-1683, 1993.
- 79. Schmied, A., Ivarsson, C. and Fetz, E.E. Short-term synchronization of motor units in human extensor digitorium communis muscle: relation to contractile properties and voluntary control, <u>Experimental Brain Research</u>, 97: 157-172, 1993.
- 80. Fetz, E.E. Neural mechanisms of sensorimotor behavior: simulations with dynamic recurrent network models, in ROLE OF THE CEREBELLUM AND BASAL GANGLIA IN

VOLUNTARY MOVEMENT, N. Mano, I. Hamada and M. DeLong, eds. Elsevier, North Holland, pp.275 - 284, 1993.

- 81. Fetz, E.E. Cortical control of limb movement. <u>Current Opinion in Neurobiology</u>, 3:932-939, 1993.
- 82. Fetz, E.E. and Shupe, L.E. Measuring synaptic interactions. <u>Science</u>, 263: 1295-1296, 1994.
- 83. Munro, E.E., Shupe, L.E. and Fetz, E.E. Integration and differentiation in dynamic recurrent neural networks, <u>Neural Computation</u>, 6: 405-419, 1994.
- 84. Murthy, V.N., Aoki, F. and Fetz, E.E. Synchronous oscillations in sensorimotor cortex of awake monkeys and humans. In OSCILLATORY EVENT RELATED BRAIN DYNAMICS, C. Pantev, T. Elbert and B. Lutkenhoner, eds. Plenum Publishing, New York, pp. 343-356, 1994.
- 85. Murthy, V.N. and Fetz, E.E. Effects of input synchrony on the firing rate of a threeconductance cortical neuron model. <u>Neural Computation</u>, 6: 1111-1126, 1994.
- 86. Fetz, E.E. and Shupe, L.E. Dynamic models of neurophysiological systems, in HANDBOOK OF BRAIN THEORY AND NEURAL NETWORKS, M. Arbib, ed. MIT Press, pp. 332 335, 1995.
- 87. Fetz, E.E., Perlmutter, S.I., Maier, M.A., Flament, D., and Fortier, P.A. Response patterns and post-spike effects of premotor neurons in cervical spinal cord of behaving monkeys. <u>Canadian Journal of Physiology and Pharmacology</u>,74:531-546, 1996.
- 88. Murthy, V.N. and Fetz, E.E. Oscillatory activity in the sensorimotor cortex of awake monkeys: synchronization of local field potentials and relation to behavior. Journal of Neurophysiology, 76: 3949-3967, 1996.
- 89. Murthy, V.N. and Fetz, E.E. Synchronization of neurons during local field potential oscillations in sensorimotor cortex of awake monkeys. Journal of Neurophysiology, 76: 3968-3982, 1996.
- 90. Matsumura, M., Chen, D-F, Sawaguchi, T., Kubota, K. and Fetz, E.E. Synaptic interactions between primate precentral cortex neurons revealed by spike-triggered averaging of intracellular membrane potentials in vivo. Journal of Neuroscience, 16: 7757-7767, 1996.
- 91. Fetz, E.E. Temporal coding in neural populations? <u>Science</u> 278: 1901-1902, 1997.
- 92. Perlmutter, S.I., Maier, M.A., and Fetz, E.E. Activity and output linkages of spinal premotor interneurons during voluntary wrist movements in the monkey. Journal of Neurophysiology, 80: 2475-2494, 1998.
- 93. Maier, M.A., Perlmutter, S.I. and Fetz, E.E. Response patterns and force relations of monkey spinal interneurons during active wrist movement. Journal of Neurophysiology, 80: 2495-2513, 1998.
- 94. Aoki, F., Fetz, E. E., Shupe, L., Lettich, E. and Ojemann, G. A. Increased gamma-range activity in human sensorimotor cortex during performance of visuomotor tasks. <u>Clinical</u> <u>Neurophysiology</u>, 110/3: 524-537, 1999.
- 95. Fetz, E.E., Perlmutter, S.I., Prut, Y. and Maier, M.A., Primate spinal interneurons: muscle fields and response properties during voluntary movement. <u>Progress in Brain</u> <u>Research</u>, 123: 323 – 330, 1999.
- 96. Prut, Y. and Fetz, E.E. Primate spinal interneurons show pre-movement instructed delay activity, <u>Nature</u>, 401: 590-594, 1999.

- 97. Fetz, E.E., Response properties of spinal interneurons in awake, behaving primates, <u>Pain</u> <u>Supplement 6</u>: 55-60, 1999.
- 98. Fetz,E.E., Real-time control of a robotic arm by neuronal ensembles, <u>Nature</u> <u>Neuroscience</u> 2: 583-584, 1999.
- 99. Fetz, E.E., Perlmutter, S.I. and Prut, Y. Functions of mammalian spinal interneurons during movement. <u>Current Opinion in Neurobiology</u>, 10:699-707, 2000.
- 100. Fetz, E.E., Chen, D.F., Murthy, V.N., and Matsumura, M. Synaptic interactions mediating synchrony and oscillations in primate sensorimotor cortex. Journal of Physiology (Paris), 94: 323-331, 2000.
- 101. Aoki, F., Fetz, E. E., Shupe, L., Lettich, E. and Ojemann, G. A. Changes in power and coherence of brain activity in human sensorimotor cortex during performance of visuomotor tasks. <u>Biosystems</u>, 63: 89-99, 2001.
- 102. Prut, Y., Perlmutter, S.I. and <u>Fetz, E.E.</u> Distributed processing in the motor system: Spinal cord perspective, <u>Progress in Brain Research</u>, 130: 267-278, 2001.
- 103. Fetz, E.E., Perlmutter, S.I., Prut, Y. and Seki, K. Functional properties of primate spinal interneurons during voluntary hand movements. <u>Advances in Experimental Medicine and Biology</u>, 508: 265-71, 2002.
- 104. Fetz, E.E., Perlmutter, S.I., Prut, Y. Seki, K. and Votaw, S. Roles of primate spinal interneurons in preparation and execution of voluntary hand movement. <u>Brain Research Reviews</u>, 40: 53-65, 2002.
- 105. Fetz, E.E. and Shupe, L.E. Recurrent networks: neurophysiological modeling, in HANDBOOK OF BRAIN THEORY AND NEURAL NETWORKS, 2nd ed., M. Arbib, ed. MIT Press, 960-963, 2003.
- 106. Seki, K., Perlmutter, S.I., and Fetz, E.E., Sensory input to primate spinal cord is inhibited presynaptically during voluntary movement. <u>Nature Neuroscience</u>, 6: 1309-1316, 2003.
- 107. Maier, M.A., Shupe, L.E. and Fetz, E.E., Recurrent neural networks of integrate-and-fire cells simulating short-term memory and wrist movement tasks derived from continuous dynamic networks. Journal of Physiology (Paris), 97: 601-612, 2003.
- 108. Aumann, T.D. and Fetz, E.E., Oscillatory activity in forelimb muscles of behaving monkeys evoked by microstimulation in the cerebellar nuclei. <u>Neuroscience Letters</u>, 361, 106-110, 2004.
- 109. Maier, M.A., Shupe, L.E. and Fetz, E.E., Dynamic neural network models of the premotoneuronal circuitry controlling wrist movements in primates. Journal of <u>Computational Neuroscience</u>. 19:125-46, 2005.
- 110. Mavoori, J., Jackson, A., Diorio, C. and Fetz, E.E. An autonomous implantable computer for neural recording and stimulation in unrestrained primates. Journal of <u>Neuroscience Methods</u>, 148: 71-77, 2005.
- 111. Chen, D-F and Fetz, E.E. Characteristic membrane potential trajectories in primate sensorimotor cortex neurons recorded *in vivo*, Journal of Neurophysiology, 94: 2713-2725, 2005.
- 112. Jackson, A., Moritz, C.T., Mavoori, J., Lucas, T.H. and Fetz, E.E. The Neurochip BCI: Towards a neural prosthetic for upper limb function, <u>Neural Systems and Rehabilitation</u> <u>Engineering, IEEE Transactions</u>, 14: 187-190, 2006.
- 113. Baker, S.N., Chiu, M. and Fetz E.E., Afferent encoding of central oscillations in the monkey arm, Journal of Neurophysiology, 95: 3904-3910, 2006.

- 114. Jackson, A., Baker, S.N. and Fetz E.E., Tests for presynaptic modulation of corticospinal terminals from peripheral afferents and the pyramidal tract in the macaque monkey, Journal of Physiology, 573.1: 107-120, 2006.
- 115. Jackson, A., Mavoori, J. and Fetz, E.E. Long-term motor cortex plasticity induced by an electronic neural implant. <u>Nature</u>, 444: 56-60, 2006.
- 116. Fetz, E.E. My liberating year at the Wissenschaftkolleg, <u>Jahrbuch 2004/2005</u>, Wissenschaftkolleg zu Berlin, 58-64, 2006.
- 117. Moritz, C.T., Lucas, T.H., Perlmutter, S.I. and Fetz, E.E. Output effects evoked by microstimulation of cervical spinal cord in sedated monkeys -- implications for neuroprosthetic applications. Journal of Neurophysiology, 97: 110-120, 2007.
- 118. Jackson, A., Mavoori, J. and Fetz, E.E. Correlations between motor cortex cells and muscles during a trained task, free behavior and natural sleep in the macaque monkey. Journal of Neurophysiology, 97: 360-374. 2007.
- 119. Fetz, E.E. Volitional control of neural activity: implications for brain-computer interfaces. Journal of Physiology (Lond.), 579.3: 571-579, 2007 PMC3156089.
- 120. Jackson, A. and Fetz, E.E. A compact moveable microwire array for long-term chronic unit recording in cerebral cortex of primates. <u>Journal of Neurophysiology</u>, 98:3109-3118, 2007.
- 121. Kipke, D., Shain, W., Buzsaki, G., Fetz, E., Henderson, J., Hetke, J., and Schalk, G. Advanced neurotechnologies for chronic neural interfaces: new horizons and clinical opportunities, *Journal of Neuroscience*, 28: 11830-11838, 2008.
- 122. Moritz, C.T., Perlmutter, S.I. and Fetz, E.E. Direct control of paralyzed muscles by cortical neurons. <u>Nature</u>, **456**: 639 642, 2008.
- 123. Miller, K., Zanos, S., Fetz, E.E., den Nijs, M., and Ojemann, J. Decoupling the cortical power spectrum reveals real-time representation of individual finger movements in humans. Journal of Neuroscience, 29: 3132-3137, 2009. PMID: 19279250
- 124. Seki, K., Perlmutter, S.I., and Fetz, E.E., Task-dependent modulation of primary afferent depolarization in cervical spinal cord of monkeys performing an instructed delay task. Journal of Neurophysiology, 102: 85-99, 2009. PMCID: PMC2712276
- 125. Smith, WS and Fetz, E.E. Synaptic interactions between movement-related motor cortex neurons in behaving monkeys. Journal of Neurophysiology, 102: 1026-1039, 2009. PMCID: PMC2724363
- 126. Smith, WS and Fetz, E.E. Synaptic linkages between corticomotoneuronal cells affecting forelimb muscles in behaving primates. Journal of Neurophysiology, 102: 1040-1048, 2009. PMCID: PMC2724364
- 127. Isa, T., Fetz, E.E. & Muller, K-R., Recent advances in brain-machine interfaces, <u>Neural</u> <u>Networks</u>, 22, 1201-1202, 2009. PMID: 19840893
- 128. Miller, K.J., Schalk, G., Fetz, E.E., den Nijs, M., Ojemann, J.G. and Rao, R.P.N., Cortical activity during motor execution, motor imagery, and imagery-based online feedback, <u>Proceedings of the National Academy of Sciences</u>, 107: 4430-4435, 2010. PMCID: PMC2840149.
- 129. Miller KJ, Hermes D, Honey CJ, Sharma M, Rao RP, den Nijs M, Fetz EE, Sejnowski TJ, Hebb AO, Ojemann JG, Makeig S, Leuthardt EC. Dynamic modulation of local population activity by rhythm phase in human occipital cortex during a visual search task. <u>Frontiers in Human Neurosci.</u> 4:197. 2010 PMC299065

- 130. Cramer, S.C., Sur, M,... Fetz, E.E. et al Harnessing neuroplasticity for clinical applications. <u>Brain</u> 134:1591-609, 2011. PMID:21482550 PMC: 3102236
- 131. Moritz, C.T., and Fetz, E.E. Volitional control of single cortical neurons in a brainmachine interface. Journal of Neural Engineering, 8 (2011) 025017 PMC3156089. NIHMSID #369143.
- 132. Edwardson, M., Fetz, E.E., and Avery, D. Seizure produced by 20Hz transcranial magnetic stimulation during isometric muscle contraction in a healthy subject. <u>Clinical Neurophysiology</u>, 122: 2326-7, 2011 NIHMSID #369142
- 133. Zanos, S., Richardson, G, Shupe, L., Miles F.A. and Fetz, E.E. The Neurochip-2: an autonomous head-fixed computer for recording and stimulating in freely behaving monkeys. <u>IEEE Transactions on Neural Systems & Rehabilitation Engineering</u>, 19(4): 427–435, 2011. NIHMSID # 315758.
- 134. Jackson, A. and Fetz, E.E. Interfacing with the computational brain, <u>IEEE Transactions</u> <u>on Neural Systems and Rehabilitation Engineering</u>, 19: 534-541, 2011. NIHMSID #369140
- 135. Seki K. and Fetz E.E. Gating of sensory input at spinal and cortical levels during preparation and execution of voluntary movement. Journal of Neuroscience 32: 890-902, 2012.
- 136. Fetz, E.E. Artistic explorations of the brain, <u>Frontiers in Human Neuroscience</u>, 6:1-4, 2012. PMC3273889.
- 137. Zanos S., Zanos T.P., Marmarelis V.Z., Ojemann G.A., Fetz E.E. Relationships between spike-free local field potentials and spike timing in human temporal cortex. Journal of <u>Neurophysiology</u>, 107:()1808-1821; 2012, doi:10.1152/jn.00663.2011
- 138. Richardson, G. and Fetz, E.E. Brain-state dependence of electrically evoked potentials monitored with head-mounted electronics. <u>IEEE Transactions on Neural Systems & Rehabilitation Engineering</u>, 20: 756-761, 2012. 10.1109/TNSRE.2012.2204902
- 139. Miller KJ, Hermes D, Honey CJ, Hebb AO, Ramsey, N.F., Knight, R.T., Ojemann JG, and Fetz EE, Human motor cortical activity is selectively phase-entrained on underlying rhythms. <u>PLoS Computational Biology</u>, 8: 1-21, 2012.
- 140. Sacchet MD, Mellinger J, Sitaram R, Braun C, Birbaumer N, Fetz E, Volitional control of neuromagnetic coherence, <u>Frontiers in Neuroscience</u>, 6:189, 2012.. doi: 10.3389/fnins,
- 141. Fetz EE, Volitional control of cortical oscillations and synchrony, <u>Neuron</u>, 77, 216-218, 2013. PMC NIHMS 456909.
- 142. Edwardson M, Lucas T, Carey J and Fetz E., New modalities of brain stimulation for stroke rehabilitation, <u>Experimental Brain Research</u> 224: 335-58, 2013. DOI 10.1007/s00221-012-3315-1 PMID: 23192336 NIHMSID 594499
- 143. Lucas T and Fetz E, Myo-cortical crossed feedback reorganizes primate motor cortex output, Journal for Neuroscience, 33:5261–5274, 2013.
- 144. Nishimura Y, Perlmutter SI, Fetz EE, Restoration of upper limb movement via artificial corticospinal and musculospinal connections in a monkey with spinal cord injury. <u>Frontiers in Neural Circuits</u>, 7: 1-7, doi: 10.3389/fncir.2013. 00057, 2013
- 145. Wander JD, Blakely T, Miller KJ, Weaver KE, Johnson LA, Olson JD, Fetz EE, Rao RPN, Ojemann J, Distributed cortical adaptation during learning of a brain–computer interface task, <u>Proceedings of the National Academy of Sciences</u>, 110: 10818-10823, doi: 10.1073/pnas 1221127110, 2013.

- 146. Nishimura Y, Perlmutter SI, Eaton RW, Fetz EE, Spike-timing dependent plasticity in primate corticospinal connections induced during free behavior, <u>Neuron</u>, 80: 1301 – 1309, 2013. PMID:24210907
- 147. Johnson LA, Wander JD, Sarma D, Su DK, Fetz EE, Ojemann JG. Direct electrical stimulation of the somatosensory cortex in humans using electrocorticography electrodes: a qualitative and quantitative report. <u>J Neural Eng.</u> 2013 Jun;10(3):036021. doi: 10.1088/1741-2560/10/3/036021. Epub 2013 May 13. PubMed PMID: 23665776; PubMed Central PMCID: PMC3718452.
- 148. Potter S, El Hady A, Fetz EE, Editorial: Closed-Loop Neuroscience and Neuroengineering, <u>Frontiers in Neural Circuits</u> 8:115. doi: 10.3389/fncir.2014.00115, 2014.
- 149. Potter, S. M., El Hady, A., Fetz, E. E., eds. (2014). <u>Closing the Loop Around Neural</u> <u>Systems</u>. Lausanne: Frontiers Media. doi: 10.3389/978-2-88919-356-1
- 150. Sun H, Blakeley TM, Darvas F, Wander JD, Johnson LA, Su DK, Miller KJ, Fetz EE, Ojemann JG. Sequential activation of premotor, primary somatosensory and primary motor areas in humans during cued finger movements <u>Clinical Neurophysiology</u> http://dx.doi.org/10.1016/j.clinph.2015.01.005, 2015
- 151. Fetz, EE, Restoring motor function with bidirectional neural interfaces, In Dancause N, Rossignol S, Nadeau S, editors: <u>Sensorimotor Rehabilitation: At the Crossroads of Basic</u> <u>and Clinical Sciences</u>, <u>Progress in Brain Research</u>, Volume 218, 241-252, 2015.
- 152. Fetz, EE, Bidirectional interactions between the brain and implantable computers, <u>Proceedings of the Bial Foundation 10th Symposium</u> "Behind and Beyond the Brain", pp 27-36, 2015.
- 153. Zaidi AD, Munk MH, Schmidt A, Risueno-Segovia C, Bernard R, Fetz E, Logothetis N, Birbaumer N, Sitaram R, Simultaneous epidural functional near-infrared spectroscopy and cortical electrophysiology as a tool for studying local neurovascular coupling in primates, <u>Neuroimage.</u> 120:394-399, 2015.
- 154. Milovanovic I, Robinson R, Fetz EE, Moritz, CT. Simultaneous and independent control of a brain-computer interface and contralateral limb movement, <u>Brain-Computer Interfaces</u>, DOI: 10.1080/2326263X.2015.
- 155. Edwardson M.A., Avery D.H., Fetz E.E., Volitional muscle activity paired with transcranial magnetic stimulation increases corticospinal excitability. <u>Front Neurosci.</u> 8:442. doi: 10.3389/fnins.2014.00442, 20152015.
- 156. Smith WA, Mogen BJ, Fetz E, Sathe VS, Otis BP. Exploiting Electrocorticographic Spectral Characteristics for Optimized Signal Chain Design: A 1.08uW Analog Front End with Reduced ADC Resolution. <u>IEEE Trans Biomedical Circuits and Systems</u>, 10: 1171-1180, 2016. PMID: 27071192 DOI:10.1109/TBCAS.2016.2518923
- 157. Eaton RW, Libey T, Fetz EE. Operant conditioning of neural activity in freely behaving monkeys with intracranial reinforcement J Neurophysiol. 117 3: 1112-1125 2017 [Dec 28:jn.00423.2016. doi: 10.1152/jn.00423.2016].

- 158. Lajoie G, Krouchev NI, Kalaska JF, Fairhall A, Fetz EE Correlation-based model of artificially induced plasticity in motor cortex by a bidirectional brain-computer interface, <u>PLOS Computational Biology</u>, Feb; 13 2: e1005343. 2017.
- 159. Seeman SC, Mogen BJ, Fetz EE, Perlmutter SI Paired stimulation for spike-timing dependent plasticity in primate sensorimotor cortex, <u>J. Neuroscience</u>. 37 7: 1935-1949, 2017.
- 160. Rembado I, Zanos S, Fetz EE Cycle-Triggered Cortical Stimulation during Slow Wave Sleep Facilitates Learning a BMI Task: A Case Report in a Non-Human Primate. <u>Front.</u> <u>Behav. Neurosci</u>. 11:59. doi: 10.3389/fnbeh.2017.00059, 2017.
- 161. Libey T, Fetz EE. Open-source, low cost, free-behavior monitoring and reward system for neuroscience research in non-human primates, <u>Front. Neurosci., Neuroprosthetics</u>, doi: 10.3389/fnins.2017.00265, 2017.
- 162. Kajal DS, Braun C, Mellinger J, Sacchet MD, Ruiz S, Fetz, E, Birbaumer N, Sitaram R. Learned Control of Inter-Hemispheric Connectivity: Effects on Bimanual Motor Performance, <u>Human Brain Mapping</u>, DOI: 10.1002/hbm.23663 2017.
- Clausen J, Fetz E, Donoghue J, Ushiba J, Spörhase U, Chandler J, Birbaumer N, Soekadar SR. Help, hope and hype: ethical dimensions of neuroprosthetics, <u>Science</u>, 356: 1338-1339, 2017.
- 164. Zanos S, Rembado I, Chen DF, Fetz EE, Phase-locked stimulation during cortical beta oscillations produces bidirectional synaptic plasticity in awake monkeys. <u>Current Biology</u> 28, 2515–2526, 2018.
- Tavildar S, Mogen B, Zanos S, Seeman S, Perlmutter S, Fetz E, Ashrafi A. Inferring cortical connectivity from ECoG signals using graph signal processing, <u>IEEE Access</u> 7: 109349-109362, 2019. ISSN: 2169-336. DOI: 10.1109/ACCESS.2019.2934490.
- 166. Fetz, EE Integrate and fire: RC circuits to model neurons and reward monkeys. In ALWAYS AHEAD SEMINAL CONTRIBUTIONS OF GEORGE L. GERSTEIN TO NEUROSCIENCE. Aertsen A, Grün S, Meldonado P, and G. Palm, eds, Springer, pp 1-6, 2019.
- 167. Andrew R. Bogaard, AR, Lajoie G, Boyd H, Morse A, Zanos S, Fetz EE, Cortical network mechanisms of anodal and cathodal transcranial direct current stimulation in awake primates. <u>bioRxiv</u> doi: <u>https://doi.org/10.1101/516260</u>, 2019.
- 168. Shupe L, Fetz EE, An integrate-and-fire spiking neural network model simulating artificially induced cortical plasticity, <u>ENeuro 0333-20, 2021</u>
- 169. Fetz, E. On the Machinery of the Mind, <u>ZCLA Water Wheel</u>, <u>21</u>: 5 [Jan-March] 2021.

- Shupe LE, Miles FP, Jones G, Yun R, Mishler J, Rembado I, Murphy RL, Perlmutter SI, Fetz EE, Neurochip3: An Autonomous Multichannel Bidirectional Brain-Computer Interface for Closed-Loop Activity-Dependent Stimulation, <u>Front. Neurosci</u>. 15:718465. 2021. <u>doi: 10.3389/fnins.2021.718465</u>.
- 171. Moorjani S, Walvekar S, Fetz EE, Perlmutter SI, Movement-Dependent Electrical Stimulation for Volitional Strengthening of Cortical Connections in Behaving Monkeys, <u>bioRxiv</u> doi: https://doi.org/10.1101/2021.09.03.458906. 2021. <u>PNAS</u> <u>https://doi.org/10.1073/pnas.2116321119</u>, 2022.
- 172. Rembado I, Song, W, Su DK, Levari A, Shupe, LE, Perlmutter, S, Fetz E, Zanos S, Cortical Responses to Vagus Nerve Stimulation Are Modulated by Brain State in Nonhuman Primates, Cerebral Cortex, 32 5289-5397, 2021. <u>https://doi.org/10.1093/cercor/bhab158</u>
- 173. Yun R, Rembado I, Perlmutter SI, Rao RPN, Fetz EE, Local field potentials and single unit dynamics in motor cortex of unconstrained macaques during different behavioral states <u>bioRxiv</u> doi: <u>https://doi.org/10.1101/2022.04.28.489967.2022</u>.
- 174. Yun R, Mishler JH, Perlmutter SI, Fetz EE, Paired stimulation for spike-timing dependent plasticity quantified with single neuron responses in primate motor cortex, bioRxiv 2022.05.04.490684; doi: https://doi.org/10.1101/2022.05.04.490684
- 175. Yun R, Mishler JH, Perlmutter SI, Rao RPN, Fetz EE, Responses of cortical neurons to intracortical microstimulation in awake primates, eNeuro 2023 https://doi.org/10.1523/ENEURO.0336-22.2023.
- 176. Zaidi AD, Birbaumer N, Fetz E, Logothetis N, Sitaram R, The hemodynamic initial-dip consists of both volumetric and oxymetric changes reflecting localized spiking activity. Front. Neurosci. 2023 <u>https://doi.org/10.3389/fnins.2023.1170401</u>
- 177. Aoki F, Shupe L, Ojemann GA, Fetz EE, Synchrony and amplitude modulation of cortical activity in humans performing manipulative visuomotor tasks, bioRxiv 2023.08.07.550720; <u>https://doi.org/10.1101/2023.08.07.550720</u>
- 178. Yun R, Rembado I, Perlmutter SI, Rao RPN, Fetz EE, Local field potentials and single unit dynamics in motor cortex of unconstrained macaques during different behavioral states", Front. Neurosci. 2023 DOI: 10.3389/fnins.2023.1273627.
- 179. Arns M, Fetz E, Birbaumer N, In Memoriam: Maurice B. (Barry) Sterman (1935–2023), Pioneer of SMR Neurofeedback 'Show me the Data', Applied Psychophysiology and Biofeedback, <u>https://doi.org/10.1007/s10484-024-09620-x 2024</u>.
- 180. Fetz E, Now This, ZCLA Water Wheel, 24: 2 (April-June) 2024.

181. Pierce AF, Shupe LE, Fetz EE, Yazdan-Shahmorad A, Flexible modeling of large-scale neural network stimulation: electrical and optical extensions to The Virtual Electrode Recording Tool For Extracellular Potentials (VERTEX), bioRxiv 2024.08.20.608687; <u>doi: https://doi.org/10.1101/2024.08.20.608687</u>