

CURRICULUM VITAE

Michael L. Blei, M.D.

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Office Address

Denver Health Medical Center
777 Bannock Street, Mail Code 0113
Denver, CO 80204-4507
(303) 602-6227
FAX (303) 602-1662
E-mail: michael.blei@dhha.org

Education

1976-1980	College of Idaho, Caldwell, Idaho	B.S.	Mathematics
1981-1985	Vanderbilt University, Nashville, Tennessee	M.D.	Medicine

Medical Training

1985-1986	Deaconess Hospital, Spokane, Washington	Internship	Transitional
1986-1989	University of Utah, Salt Lake City, Utah	Residency	Rehabilitation Medicine

Post Residency Training

1989-1991	University of Washington, Seattle, Washington	T32 Award	Muscle Energetics
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Academic Appointments

- 1989-1991 Acting Instructor, Department of Rehabilitation Medicine,
University of Washington
- 1991-2000 Assistant Professor, Department of Rehabilitation Medicine,
University of Colorado
- 2000-2002 Associate Professor, Department of Rehabilitation Medicine, University of
Colorado
- 2002-date Chief, Rehabilitation Services, Director of Electromyography, Department of
Orthopedic Surgery and Rehabilitation Medicine, Denver Health Medical Center.
Associate Professor, Department of Physical Medicine and Rehabilitation,
University of Colorado Denver

Clinical Positions

- 1991-1993 Medical Director, University Hospital, 7E Acute Rehabilitation Inpatient Unit
Attending Physician, University Hospital, Electrodiagnostic and General
Rehabilitation Outpatient Clinics
- 1993-1994 Attending Physician, University Hospital, Electrodiagnostic and General
Rehabilitation Outpatient Clinics
- 1994-1995 Attending Physician, University Hospital, Rehabilitation Medicine Acute Care
Inpatient Consult Service
Attending Physician, University Hospital, Electrodiagnostic and General
Rehabilitation Outpatient Clinics
- 1995-1996 Director, Department of Rehabilitation Medicine EMG Laboratory
Attending Physician, University Hospital, Rehabilitation Medicine Acute Care
Inpatient Consult Service
Attending Physician, University Hospital Electrodiagnostic and General
Rehabilitation Outpatient Clinics
- 1996-1998 Director, Department of Rehabilitation Medicine EMG Laboratory
Attending Physician, University Hospital, Electrodiagnostic and General
Rehabilitation Outpatient Clinics

- 1998-2000 Director, Department of Rehabilitation Medicine EMG Laboratory
 Medical Director, University Hospital, 7E Acute Rehabilitation Inpatient Unit
 Attending Physician, University Hospital, General Rehabilitation Outpatient
 Clinics
 Attending Physician, Vencor, Acute Long Term Care Consultation Service
 Attending Physician, Acute Burn Consultation Service
- 2000-2002 Director, Department of Rehabilitation Medicine EMG Laboratory
 Medical Director, University Hospital, 7E Acute Rehabilitation Inpatient Unit
 Attending Physician, University Hospital, General Rehabilitation Outpatient
 Clinics
- 2002-2005 Chief, Rehabilitation Services, Denver Health Medical Center and
 Electromyographic Services, Acute Care Rehabilitation Consultation and
 Outpatient Specialty Clinics, Denver Health Medical Center
- 2006-date Chief, Rehabilitation Services, Denver Health Medical Center and
 Electromyographic Services, Medical Director of Acute Inpatient Rehabilitation
 Unit, Denver Health Medical Center

Honors, Prizes, Awards

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| Twin Falls High School | Valedictorian |
| National Youth Science Camp | Idaho Representative |
| College of Idaho | Freshman Mathematics Student of the Year |
| College of Idaho | Summa Cum Laude |
| Vanderbilt University | Alpha Omega Alpha |
| University of Colorado Health Sciences Center | |
| Dept. of Rehabilitation Medicine | Golden Goniometer Teaching Award (00, 05, 13) |
| University of Colorado PM&R Residency Program | |
| | Jerome Gersten Role Model Award 2014-2015 |

Professional Memberships

- 1991-present American Association of Neuromuscular and Electrodiagnostic Medicine
 1993-present Rocky Mountain Rehabilitation Society
 1994-2015 Association of Academic Physiatrists
 2012-present AAPM&R

UCHSC Committee Responsibilities

Departmental

- 2018- Department of Rehabilitation, Resident Selection Committee

2005-2013 Department of Rehabilitation Medicine, Promotions Committee Member

1999-2000 Department of Rehabilitation Medicine, Education Committee Member
2002-2009

1995-2002 Department of Rehabilitation Medicine, Adhoc Resident
Probation/Remediation Committee Member, yearly effort as needed

1995-1997 Department of Rehabilitation Medicine, Education Committee, Cardiopulmonary
Education Subcommittee Chairman

1993-1997 Department of Rehabilitation Medicine, Education Committee Member

1994-1996 Department of Rehabilitation Medicine, Vision Committee, Research Committee

1991-1994 Department of Rehabilitation Medicine, Research Committee Member

1991-1993 Department of Rehabilitation Medicine, Long Range Planning
Committee Member

School of Medicine/DHMC

1994-1995 UCHSC LCME self-study review sub-committee for electives

1997-1998 UCHSC Fitzsimons Cancer Building Committee

1996-1999 UH Cancer Committee, Department of Rehabilitation Medicine Representative

1999-2002 UH Cancer Committee Member

2004-2005 DHH Restraint Committee

2006-2009 DHH Pediatric Trauma Committee, guest member

2002-present DHH Trauma Committee

2016-present DHGME Committee

Regional Committee Responsibilities

2002-2004 Clinical Quality Committee, Sloans Lake Managed Care

National Committee Responsibilities

1995-2001 Association of Academic Physiatrists, Research Committee Member

Certification and Licensure

State of Colorado Medical License, 1991 to date

State of Nebraska Medical License, 2007 to 2018

Board Certified American Board of Electrodiagnostic Medicine
Certification 1991-date

Board Certified American Board of Physical Medicine and Rehabilitation
Certification 7/1/04-6/30/14, Recertification 7/1/14-6/30/24

Hospital Staff Appointments

Active

1991-present Denver Health Medical Center
1991-present Denver Veteran's Administration Hospital
1991-present University of Colorado Hospital

Inactive

1991-97 Rose Medical Center
1993-95 Fitzsimons Army Medical Center
1998-2000 Vencor Hospital

Publications

Peer Reviewed Articles

Blei, M.L., K.E. Conley, and M.J. Kushmerick, *Separate Measures of Phosphocreatine Utilization and Recovery in Human Skeletal Muscle*. Journal of Physiology, 465, pp. 203-222, 1992.

Blei, M.L., K.E. Conley, and M.J. Kushmerick. *Individual Variation in Contractile and Recovery in a Human Skeletal Muscle*. PNAS, Vol. 90, pp. 7396-7400, August 1993.

Conley, K.E., M.L. Blei, T.L. Richards, M.J. Kushmerick, and S.A. Jubrias. *Activation of Glycolysis in Human Muscle in vivo*. Am J Physiol: Cell Physiol., 273 (Cell Physiol. 42): C306-C315, 1997.

Goldman, M et al. Remotely Controlled Communication and Control System for Limited Mobility Individuals. IEEE Proceedings of 13th International Conference. 90-93, 2011.

Weckbach, S.¹ et al. *Survival following a vertical free fall from 300 feet: The crucial role of body position to impact surface*. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine 2011, **19**:63 doi:10.1186/1757-7241-19-63.

<http://www.sjtrem.com/content/19/1/63/abstract>

Kimberly Newman and Michael Blei, "Evaluation of Smart Phones for Remote Control of a Standard Hospital Room," Springer Wireless Personal Communication, August 29, 2013 (J. No. 11277; Article No. 1404).

Books, Invited Manuscripts, Chapters

Blei, M.L., K.E. Conley, and M.J. Kushmerick, *Normal Range of ATPase and ATP Synthesis Rates of Human Skeletal Muscle Determined Noninvasively by a Quantitative Energetic Stress Test. Neuromuscular Fatigue*, in *Neuromuscular Fatigue*, pp. 203-4, D. Kernell and A. J. Sargeant, Editor. 1993. Elsevier Science, Amsterdam.

Blei, M.L., A. Fall, and M.J. Kushmerick, *Energy Balance for Muscle Function: Principles of Bioenergetics*, pp. 3-22 W. Frontera, Editor. 1999, Human Kinetics, USA.

Abstracts

Gooch, J., J. Petajan, and M.L. Blei. Evaluation of the Effects of Isometric Fatigue on Motor Unit Recruitment. *AAEE 35th Annual Scientific Meeting*. (Presentation Only) October 7-8, 1988. San Diego, California, September, 1988.

Blei, M.L., *et al.* Pattern of Normal Human Muscle Energetics Utilizing a New Quantitative Exercise Stress Test (QUEST) Protocol. in *Society of Magnetic Resonance in Medicine Annual Meeting*. August 10-16, 1991. Oral Presentation, p. 110. San Francisco, California, 1991.

Blei, M.L., *et al.* Evaluation of Adenosine Triphosphate Resynthesis Capacity in Human Skeletal Muscle. *AAEM 38th Annual Scientific Meeting*. 9/25-28, 1991. Vancouver, British Columbia, in *Muscle and Nerve*, vol.14, #9, p. 916, September 1991.

Blei, M.L., *et al.* Individual Variation in ATP Utilization Rates in Normal Human Forearm Muscle. *Society of Magnetic Resonance in Medicine Annual Meeting*. August 8-14, 1992. Poster Presentation. Berlin, Germany. 1992.

Conley, K.E., *et al.* ATP Synthesis Rates and Oxidative Capacity: Variation in Normal Human Forearm Muscle. *Society of Magnetic Resonance in Medicine Annual Meeting*. August 8-14, 1992. Poster Presentation. Berlin, Germany. 1992.

Odderson, I.R., *et al.* 31P MRS Assessment of Variations in Forearm Muscle Energetics. *54th Annual Assembly of the American Association of Physical Medicine and Rehabilitation*. November 13-17, 1992. Poster Presentation. San Francisco, California. *Archives of PM&R*, vol. 73, #10, Oct. 1992.

Conley, K.E., *et al.* Metabolic Recovery from Exercise: Flow and Diffusion Limitations.. *FASEB Experimental Biology 94*, Poster Presentation. April 24-28, 1994. Poster Presentation #1663, Anaheim, California, in *FASEB Journal*, vol.8, p. A288, 1994.

Blei, M.L. and R. Jones. Monoexponential Recovery Estimators. *Workshop on Magnetic Resonance Imaging and Spectroscopy of Muscle* sponsored by Society of Magnetic Resonance in Medicine and the European Society of Magnetic Resonance in Medicine and Biology, June 29-July1, 1994. Poster Presentation NOS #14, 1994. University of Liverpool, England, 1994.

Blei, M.L., *et al.* Basal Metabolic Rates of Human Skeletal Muscle. *Association of Academic Physiatrists Annual Meeting*. February, 1997. Colorado Springs, CO. in *American Journal of Physical Medicine and Rehabilitation*, vol. 76, number 2, p. 173, 1997.

Research Support

Grants -Funded

<i>Title and Source</i>	<i>Period</i>	<i>Total Award</i>
“Quantitative Energetic Stress Test” University of Colorado, Biomedical Research Grant Program (PI)	1991-1993	\$ 8,000
“Muscle Energetics Set Steady-State Function” NIH NIAMS K11 Physician Scientist Award (PI) No cost extension	1993-1998 1998-2001	\$ 400,000

Grants-Consultant

“Diagnosis of Human Muscle Metabolism and Function” Martin J. Kushmerick, M.D., Ph.D. (PI), University of Washington Michael L. Blei, M.D. (Consultant)	1992-1997	\$2,600,000
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Educational Activities

Resident Education, Department of Rehabilitation

1991-2002	Electrodiagnostic Core Curriculum - weekly.
1992	Neuromuscular Disease Core Didactics, Course Director – 4 hrs.
1993	Therapeutic Modalities in Physical Medicine Core Didactics, Course Director – 8 hrs.
1993	Muscle Physiology Core Didactics, Course Director - 4 hrs.
1994	Neuromuscular Disease Core Didactics, Course Director - 6 hrs.

- 1996 Anatomy Core Didactics, Knee Subsection - 6 hrs.
- 1996 Therapeutic Exercise Core Didactics, Course Directors Blake, Scott, Sheno and Blei - 22 hrs.
- 1999 Therapeutic Exercise Core Didactics, Course Director Blei - 22 hrs.
- 2000 Cancer Rehabilitation Core Didactics, Course Directors Blei, Clyne – 4 hrs.
- 2001 Therapeutic Exercise Core Didactics, Course Director Blei – 22 hrs.
- 2002 Therapeutic Modalities in Physical Medicine Core Didactics, Course Director – 8 hrs.
- 2003 Trauma Rehabilitation, Course Director Blei, Fine, Jha – 8 hrs.
- 2004 Therapeutic Exercise Core Didactics, Course Director Blei – 18 hrs.
- 2005 Therapeutic Exercise Core Didactics, Course Director Blei – 12 hrs.
- 2005 Trauma Rehabilitation, Course Director Blei, Jha, Arends – 6 hrs
- 2007 Therapeutic Exercise Core Didactics, Course Director Blei – 12 hrs.
- 2008 Therapeutic Exercise Core Didactics, Course Director Blei – 12 hrs.
- 2009 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
- 2010 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
- 2011 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
Peripheral Nerve Injury and Recovery-Blei
Neurologic Sequelae of Electrical Burn Injuries-Blei
Polytrauma Case Reviews-Blei
- 2012 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
Brachial Plexus Contracture Management Case Reviews-Blei
- 2013 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
- 2014 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
Peripheral Nerve Injury and Recovery-Blei
Brachial Plexus Management Case Reviews-Blei
- 2015 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs

- 2016 Trauma Rehabilitation, Course Director Blei, Godleski – 6 hrs
- 2017 Trauma Rehabilitation, Course Director 4 hrs
Orthopedic Pelvic and Long Bone Fractures, Drs. Hak and Mauffrey
Fascicular Nerve Transfers-Blei
- 2018 Trauma Rehabilitation, Course Director 2 hrs
Orthopedic Pelvic Knee Trauma and Peripheral Nerve Injury. Drs. King and Blei

Resident Education, UCHSC

- 1999 Neurology Resident Seminar - Energy Balance for Muscle Function
- 1996-2009 Orthopedic Hand Conference - Peripheral Nerve Injury Subsection

Medical/PT Student Education

- 1995 Physical Diagnosis Course Instructor, Medical School Curriculum,
Neuromuscular System
- 1998, 1999 Basics of Electrodiagnostic Medicine didactic module for Physical Therapy
Students, 3 hours of didactic lectures and 4 hours of laboratory

Residency Educational Program Development

- 1993-1994 Residency Rotation Annual Review Process Initiative (Blei)
- 1993-1995 Rehabilitation Residency Research Requirement Review and Restructure (Blake,
VanDorsten, Blei, Scott)
- 1994-1995 Residency Journal Club Format Development (Blei, Blake,
VanDorsten, Scott)
- 1994-1997 Learning Objectives for Rehabilitation Medicine Residency Training (Blake, Scott,
Blei)
- 1995-1996 Hierarchical Resident Training Initiative for PM&R Residents (Blei, Blake)

Presentations

Invited National Presentations

- April 1995 Association of Academic Physiatrists, Scottsdale, Arizona
“Energetic Contractile Cost and Recovery Capacity in Human
Skeletal Muscle”
- February 1995 11th Annual Update in PM&R, Park City, Utah

“Energetic Contractile Cost and Recovery Capacity in Human Skeletal Muscle”

February 1996 12th Annual Update in PM&R, Park City, Utah
“Neuromuscular Fatigue”

September 1996 Grand Rounds, University of Pennsylvania
Department of Rehabilitation Medicine
“The Bioenergetics of Human Skeletal Muscle Performance”

Invited Regional Presentations

October 1991 University of Washington Research Department of Rehabilitation Medicine Skeletal Muscle Energetics

March 1992 UCHSC Metabolic NMR Symposia Non-invasive fiber typing of human skeletal muscle

March 1992 Nursing Grand Rounds, UCHSC Acute Rehabilitation

August 1995 Kinesiology, UC-Boulder Human Skeletal Muscle Bioenergetics

May 1996 School of Nursing, UCHSC-CE Peripheral Nerve Trauma and Recovery

August 2009 Doctors Demystify Peripheral Nerve Injuries Diagnostic Testing In PNI

February 2012 RMAOEM Annual Conference Peripheral Nerve Trauma and Recovery

UCHSC Departmental Presentations

December 1992 Physical Therapy Faculty, UCHSC Skeletal Muscle Bioenergetics

April 1993 UH Rehabilitation Therapies Future of UH Acute Rehabilitation

February 1995 Orthopedics, UCHSC Human Bioenergetics

March 1995 Biophysics Graduate Program, UCHSC Clinical Applications of Phosphorus NMR

October 1995 Occupational Medicine Graduate Program UCHSC Electrodiagnosis for Carpal Tunnel Syndrome

July 1996 Therapy Divisions, University Hospital Peripheral Nerve Trauma

		and Recovery
August 2008	Department of Orthopedic Surgery	Aging: Role in Function after Peripheral Nerve Injury
<u>Department of Rehabilitation Medicine Grand Rounds/Seminars</u>		
June 1992	Gersten Day Lectureship	Rehabilitation of the Cancer Patient on Chemotherapy
June 1995	Rocky Mountain Rehabilitation Society	Skeletal Muscle Fatigue
October 1996	Faculty Seminar	Peripheral Nerve Trauma and Recovery
October 1998	Grand Rounds, Dept. of Rehabilitation	Clinical Care for Severe Brachial Plexus Injury
December 1999	Research Seminar, Dept. of Rehabilitation	Basal Energy Utilization Rates in Human Skeletal Muscle
January 2001	Grand Rounds, Dept. of Rehabilitation	Surgical Considerations in Common Peroneal Nerve Injuries
November 2008	Grand Rounds, Dept. of Rehabilitation	Aging: Role in Function after Peripheral Nerve Injury
<u>Research Group Seminars</u>		
July 1991	GIM Research Group, UCHSC	Clinical relevance of skeletal muscle energetics
January 1992	NMR Research Group, UCHSC	Quantitative Energetic Stress Test
April 1992	GIM Research Group, UCHSC	P31 MRS vs. histochemical Analysis
July 1992	NMR Research Group, UCHSC	Absolute NMR Quantification in Muscle
November 1992	NMR Research Group, UCHSC	Spectral Quantification
November 1992	GIM Research Group, UCHSC	Thyroid Energetics
June 1993	GIM Research Group, UCHSC	Pi and A-M cross-bridge

		Function
November 1993	NMR Research Group, UCHSC	Human Skeletal Muscle Energetics
February 1994	GIM Research Group, UCHSC	Neuromuscular Fatigue
March 1994	GIM Research Group, UCHSC	Monoexponential Analysis, Matrix Model
June 1994	GIM Research Group, UCHSC	Respiratory Control of Skeletal Muscle
September 1994	GIM Research Group, UCHSC	Motor Unit Distribution by NMR
November 1994	GIM Research Group, UCHSC	Errors in Monoexponential Analysis

Community Seminars

March 1996	Burn Support Group	Neural Injury and Recovery in Burn Trauma
April 2002	Burn Support Group	Rehabilitation in Severe Burn Injuries
September 2005	Littleton School District	Brain Anatomy and Function
April 2011	Westminster Youth Athletic Association	Mild TBI in Sports
1997-Date	Littleton School District, Medical Class	Neural Regeneration, Introduction Class

Resident Rotation Lectures (repeated every 2 months)

2013-Date	Neurogenic Bladder Heterotopic Ossification Motor Unit Recruitment Skeletal Muscle Fatigue
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Special Projects

1992	Departmental proposal to University Hospital to establish a patient oriented acute rehabilitation inpatient unit similar to the PlaneTree model.
1995-1997	Fitzsimons Redevelopment Opportunity Departmental proposal for the establishment of the Human Performance and Rehabilitation Clinical Trials Laboratory. This proposal focused on

integration for collaborative opportunities between Physical Therapy, Rehabilitation Medicine, Kinesiology, Orthopedics, Geriatrics, Nutrition

2000 Departmental proposal for prep physical examination and sports evaluation program to enhance student and resident musculoskeletal/neurologic examination skills

Continuing Medical Education, Category 1

3/17 Level II Accreditation Course, Colorado Workman's Compensation
6/16 AANEM education (30)
6/15 AANEM education (30)
6/14 AAPM&R Board Recertification (30)
2/13 AAPM&R MOC Review Series
11/12 AAPM&R Pre-Annual Meeting Coding Course
Atlanta, Georgia
11/12 AAPM&R Annual Meeting
Atlanta, Georgia
12/10 Self Directed Educational Program in PM&R
Congenital and Acquired Brain Injuries
Interventions in Chronic Pain Management
11/08 Level II Re-Accreditation, Colorado Workman's Compensation
9/08 AANEM Annual Meeting
12/07 Self Directed Educational Program in PM&R
Industrial Medicine and Acute Musculoskeletal Rehabilitation
Spinal Cord Injury Medicine
11/05 Level II Re-Accreditation, Colorado Workman's Compensation
9/05 AAEM Annual Meeting
6/04 PM&R Board Recertification
4/04 Self Directed Educational Program in PM&R
Industrial Medicine and Acute Musculoskeletal Rehabilitation
Spinal Cord Injury Medicine
3/04 Self Directed Educational Program in PM&R
Congenital and Acquired Brain Injuries
Interventions in Chronic Pain Management
2/04 AAP Annual Meeting
Albuquerque, New Mexico
10/03 AAPM&R Annual Meeting
Chicago, Illinois
9/03 Cine-Med, Incorporated
Human Participation Protections Education for Research Teams
6/03 Self Directed Educational Program in PM&R
Acquired Limb Deficiencies
Cardiopulmonary Rehabilitation and Cancer Rehabilitation

- 5/02 Self Directed Educational Program in PM&R
Neuromuscular Rehabilitation and Electrodiagnosis
Rehabilitation of Orthopedic and Rheumatologic Disorders
- 12/02 Level II Re-Accreditation, Colorado Workman's Compensation
- 5/02 New Perspectives on the Pharmacology of Opioids and Their
Use in Chronic Pain
- 5/02 AAPM&R, Neuromuscular Rehabilitation and Electrodiagnosis
Rehabilitation of Orthopedic and Rheumatologic Disorders
- 4/99 Level II Re-Accreditation Course, Colorado Workman's Compensation
- 2/99 Association of Academic Physiatrists, Orlando, Florida
- 9/25/98 Treatment Guidelines Review, Colorado Workmen's Compensation
- 2/98 Association of Academic Physiatrists, San Antonio, Texas
- 4/97 Society of Magnetic Resonance Annual Meeting, Vancouver, Canada
- 2/97 Association of Academic Physiatrists, Colorado Springs, Colorado
- 7/96 Level II Accreditation Course, Colorado Workman's Compensation
- 2/96 Association of Academic Physiatrists, Las Vegas, Nevada
- 2/96 12th Annual Update in PM&R, Park City, Utah.
- 6/95 Medical College of Pennsylvania, "Effective Teaching: Improving
Your Skills", 32 hrs
- 4/95 Association of Academic Physiatrists, Scottsdale, Arizona.
- 2/95 11th Annual Update in PM&R, Park City, Utah.
- 11/94 Neural and Neuromuscular Aspects of Muscle Fatigue, Neuroscience,
Miami, Florida
- 6/94 Magnetic Resonance Imaging and Spectroscopy of Muscle,
Liverpool, England
- 4/94 Molecular Biology of Muscle Development, Keystone Symposia, SLC, Utah
- 8/92 Society of Magnetic Resonance in Medicine Annual Meeting,
San Francisco, CA
- 9/91 American Association of Electrodiagnostic Medicine Annual Meeting, Vancouver,
Canada