

**Canadian Society for Biomechanics /
Société Canadienne de Biomécanique**

**Proceedings of the Second Biannual Conference of the Canadian
Society for Biomechanics, Société Canadienne de
Biomécanique, Kingston, Ontario, 31 August - 3 September, 1982**

**Human Locomotion II
La Locomotion Humaine II**

WEDNESDAY 1 SEPTEMBER 1982

Dr. David A. Dainty, President CSB/SCB
Dr. Gavin Reid, Conference Chair

Keynote:

Benno Nigg, Asymmetry of Locomotion Parameters in Subjects with Insufficiencies of Anterior Cruciate Ligaments

Chairperson: S. Olney, Pathological Gait

S. Balakrishnan, S. Thornton-Trump, Integral Parameters in Human Locomotion

R.E. Hannah, A.E. Chapman, J.B. Morrison, Kinematic Symmetry of the Lower Limbs

C.M. Godfrey, K. Olds, Verification of Trends in Gait Kinematics Related to Subtalar Involvement of Rheumatoid Arthritis

S.M. McGill, D.A. Dainty, A Computer Analysis of Energy Transfers in Children Walking with Crutches

C. Cheung, J.C. Wall, S. Zelin, A Microcomputer-Based System for Measuring the Temporal Phases of Amputee Gait

Keynote:

Doris I. Miller, Arm Contributions to Springboard Dive Take-Offs

Chairperson: P. Lagasse, Motor Skills

A.E. Chapman, G.E. Caldwell, Sources of Lower Limb Energy in Sprinting

J. Dessureault, Y. Girouard, M. Lafortune, Biomechanics of High Jumping: The Fosbury Flop

A.W. Smith, A Method for Computing the Angular Momentum of the Human Body

V. Galea, R. Norman, One and Two-joint Muscle Length and Velocity Changes during a Rapid Ballet Movement

Chairperson: A. Quanbury, Modelling

J.G. Andrews, On the functional Role of Multiple-joint Muscles

J.J. Dowling, G.W. Marino, Mathematical Modeling to Determine Acceleration Specific Training Principles

P. Allard, P.S. Thiry, A Biokinematical Model of the Normal Foot

M.A. Lafortune, P.R. Cavanagh, A. Kalenak, S.M. Skinner, H.J. Sommer III, The Use of Intra-Cortical Pins to Measure the Kinematics fo the Knee joint

Chairperson: D. Dainty, Rehabilitation

P. Lagasse, W. Kroll, W. Kilmer, Functional Electrical Stimulation and the Treatment of Flaccid Hemipareses: A Report on Three Case Studies

R.M. Lébe-Néron, D. Rodrigue, Étude Pilote sur L'Utilisation du Biofeedback pour le Retablissement des Patrons Neuromusculaires

R.E. Hannah, A.E. Chapman, J.B. Morrison, The Effect of Alignment of Prostheses on the Gait of Below-Knee Amputees

THURSDAY 2 SEPTEMBER 1982

Keynote:

David A. Winter, Motor Patterns in Normal Gait - Are We Robots?

Chairperson: R. Norman, Normal Gait I

S. Sieglcar, G.D. Moskowitz., W.Freedman, Components of Ankle Muscular Torque during Level Walking

S.R. Simon, R.G. Burdett, G.S. Skrinar, Mechanical Work and Energy Consumption during Normal Walking

M.R. Pierrynowski, J.R. Morrison, Muscular Forces during Human Locomotion Estimated by a 'Physiological' Model

Chairperson: G.Robertson, Normal Gait II

S.J. Olney, D.A. Winter, Prediction of Knee Moment in Normal Walking from EMG and Kinematic Variables

M. Garrett, R.E. Moore, F. C. Finch, Waves in Tibia during Walking in Man

S.C. White, D.A. Winter, A.I. King, S. Nakhla, Kinetic Analysis of Gait using an Instrumented Force-Shoe

D.A. Winter, Generation and Absorption of Mechanical Energy at the Ankle and Knee during Fast, Natural and Slow Walking

Keynote:

T. Derek V. Cooke, Artificial Joint Replacement of the Knee and Hip - Current Problems and Future Requirements

Chairperson: K.Olds, Orthotics

P. Allard, P.S. Thiry, F. Marchand, Analytical Evaluation of the Dynamic Knee- Ankle Orthosis for Duchenne Muscular Dystrophy Patients

K.M Knutzen, B. Rates, J. Lander, Knee Brace Influences on the Ground Reaction Forces during Overground Running

J. Hamill, B.T. Bates, C.A. White, Evaluation of Foot Orthotic Appliances Using Ground Reaction Force Data

Chairperson: K. Robinson, Loading During Normal Activities

M. Gagnon, R.Doré, Testing Procedures for the Evaluation of Skating Blade Characteristics in Simulated Conditions

S. Naurnann, I. Ziv, M.C. Rang, Biomechanics of Standing-Up from a Chair

J. Bobet, R.W. Norman, Effects of Load Placement on Back Muscle Activity in Load Carriage

H. Kinoshita, B.T. Bates, P.R. Francis, Effects of Two Load Carrying Systems on Selected Kinematic Gait Parameters

FRIDAY 3 SEPTEMBER 1982

Chairman: S. Balakrishnan, Instrumentation

K. Olds, C.M. Godfrey, An Electromechanical Calibration Unit for the CARS-UBC Electrogoniometer

J. Yang, D.A. Winter, The Effect of EMG Normalization Methods on Intersubject Variability

R.P. Wells, D.A. Winter, The Effect of Body Markers and Image Size on Cine Film Digitization Noise

E.M. Hennig, Piezoelectric and Capacitive Pressure Distribution Techniques and their Specific Advantages for Biomechanical Applications

M.H. Whittle, J.R.W. Morris, Requirements for Accuracy in Video Based 3-Dimensional Motion Analysis

Chairman: C. Putnam, Running and Sprinting

A.E. Chapman, G.E. Caldwell, Interlimb Exchanges of Energy in Sprinting

B.T. Bates, P.R. Francis, H. Kinoshita, Functional Capabilities of Runners having Extreme Foot Types

D.G.E. Robertson, J.E. Taunton, Power Characteristics of Leg Muscles during Stance Phase of Running

M.M. Rodgers, B.F. LeVeau, Effectiveness of foot Orthotic Devices Used to Modify Pronation in Runners

A.E. Chapman, G.E. Caldwell, Energetic Limitations of Sprinting Speed

Chairperson: T. Bryant, Muscle Performance

K. Flatten, P. Rice, Plantar Flexion Strength, Range of Motion and Energy Expenditure in Older Adults

J. Kozey, R. Norrman, D. Winter, The Relationship between EMG and Torque during Static and Dynamic Contractions

C.L. Hubley, Muscle Length Patterns in Vertical Jumping