

# SPORTS BIOMECHANICS

## NEWSLETTER

# I S B S

*International Society*



*of*

*Biomechanics in Sports*

**SPORTS BIOMECHANICS NEWSLETTER**  
**VOL 4 NO 1**

MAY 1987

L. Holt, President  
Jackie Hudson, Secretary General  
John Ostarello, Treasurer  
Hans Gros, Newsletter Editor Vol.4 No 1.

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## COMPUTER COMMUNICATIONS . . .

In our last Newsletter (Vol.3 No.2) I included a brief note on the possibility of using International Computer Networks to improve and facilitate the exchange of notes, data or programs. To date I have recieved two communications from colleagues at the University of Alberta, Canada. That's not many - but it's a start. I hope to hear from YOU soon. My EARN / BITNET address is: ULAC AT DSORUS0.

### TERA AT UALTAMTS

Pierre Gervais, The University of Alberta, Edmonton, Canada.

### EWAB AT UALTAMTS

Pierre Baudin, The University of Alberta, Edmonton, Canada.

Hans Gros

**++news+news+news+news+news+news++**

The deadline for the *ISBS Logo Contest* (see: *ISBS Sports Biomechanics Newsletter Vol.3 No.2* for details) has been extended. Since the winning design will be chosen during the Athens Conference you have a few more weeks to think and draw. However, I want to present the designs to the Board of Directors and the General Assembly on slides, and need to have YOUR logo design no later than June 20<sup>th</sup>, 1987. To date, I have recieved two entries....and they look pretty good! Please send your design on a 8 1/2 by 11 size sheet to:

Dr. Hans Gros  
IfS, Keplerstrasse 17  
7000 STUTTGART 1  
West Germany

**++news+news+news+news+news+news++**

The *ISBS Board of Directors Meeting* will be held in conjunction with the fifth *ISBS Conference* in Athens on July 12<sup>th</sup>, 1987 starting at 9 a.m.

**++news+news+news+news+news+news++**

# **GRADUATE STUDENT'S BIOMECHANICS SYMPOSIUM**

By Hashem Kilani

The idea of an Interstate Campus Graduate Symposium was originally conceived by faculty at several Illinois Universities in 1986. The Universities of Illinois at Urbana-Champaign, Biomechanics Research Laboratory, hosted the first Graduate Student Biomechanics Symposium in 1986, and it was very productive (A report on the first conference can be found in the Newsletter Vol.3 No.1). Purdue University faculty advisor Carol Widule hosted this year's GSBS.

The major goal was to provide students with the opportunity to present research projects, whether completed or at the formative stages. Therefore, feedback and suggestions could be generated for each student's later use.

It is my belief that the discussion and interaction during the GSBS reached the level of our expectations. Especially when Dr. John Cooper pointed out essential aspects of the philosophical perspective of Biomechanics of the past, present and future. He emphasized that Graduate Students in biomechanics must learn how to write a grant proposal and learn how to buy and trade research equipment. He indicated that a person must change his/her job during the professional career. In his opinion, three job changes is the optimal number for achievement of promotion. He also indicated concerns about the absence of blacks in the biomechanics field.

In addition, diverse student topics about human movement analysis were presented. For example, both basic and applied research topics on kinetic and kinematic parameters were discussed. Such topics were presented and professionally discussed and were at a level equal to those at professional conferences. For example: some completed papers which included results, discussion and conclusions were presented. A completed study by KILANI, TOO and ADRIAN about visual perception of biomechanical invariants in biological systems was included. They have concluded that it is not possible (contrary to previous literature) to perceive kinetic parameters from only observing kinematic parameters of human movement. Another study by DEVITA concerning variability and reliability of ground reaction force data was presented. He concluded that 20 trials is the best number for achieving reliable data, when testing the biomechanics of shoe's characteristics during running.

Next year's GSBS will be held at Southern Illinois University. We would encourage other Biomechanics Graduate Students to initiate similar inter-institutional symposia

*Schedule of the Graduate Students Biomechanics Symposium  
February 21, 1987  
Purdue University, W. Lafayette, IN 47907*

9:30 - 10:00	Coffee
10:00 - 10:15	Welcome <i>Dr. Dale Hanson, Head, Dept. of PEHRS, Purdue</i>
10:15 - 10:50	Opening Address <i>Dr. John Cooper, Indiana</i>
10:50 - 11:10	Biomechanical Evaluation of Compressive Forces on the Spinal Column During Lifting. <i>Baharvand Mohsen, Southern Illinois University</i>
11:10 - 11:30	Biomechanical Analysis of Side Pack Carrying Systems. <i>Thomas Hong, Southern Illinois University</i>
11:30 - 1:00	Lunch - Purdue Memorial Union.
1:00 - 1:20	Intraday Reliability of Ground Reaction Force Data. <i>Dr. Paul DeVita, Southern Illinois University</i>
1:20 - 1:40	A Three Dimensional Kinematic Analysis of an Ice Skating Start. <i>Thomas C. Blegen, University of Wisconsin</i>
1:40 - 2:00	Visual Perception Biomechanical Invariance in Biological Systems. <i>Danny Too, University of Illinois</i>
2:00 - 2:20	Stretch Shortening Cycle in Human Muscle Contraction - the Role of Stretch Reflex in Force Production in Various Vertical Jumps. <i>Hashem Kilani, University of Illinois</i>
2:20 - 2:40	A Comparison of the Phase-Ratio Characteristics of Male and Female Triple Jumpers. <i>Maher Al-Kilani, Purdue University</i>
2:40 - 3:00	Multiple Repetition in Weight Lifting: Kinematic Changes due to Fatigue. <i>Steve Grabe, Purdue University</i>
3:00	Discussion and Planning for the 1988 Symposium <i>Dr. Carol Widule, Purdue University</i>

# 1988 SEOUL OLYMPIC GAMES RESEARCH PROJECT ANNOUNCED

By: In-seong Hwang, PhD, Chairman of the Advisory Committee for Biomechanics, Seoul Olympic Organizing Committee.

Dear Colleagues,

On behalf of the IOC Medical Sub-Commission for Biomechanics and Sports Physiology, I take much pleasure in informing you that biomechanical studies will be conducted by the IOC Medical Subcommission on Biomechanics and Sports Physiology during the 1988 Summer Olympic Games in Seoul, September 17 - October 2, 1988.

This project is a continuation of the project carried out during the 1984 Summer Olympic Games in Los Angeles which resulted in the establishment of the Olympic Archives of scientific films and video cassettes. In cooperation with members of the Sub-Commission and Korean Biomechanists, I will be responsible for the overall coordination. Tentatively, high speed filming plans are set for selected performances in *men's and women's gymnastics, track and field (athletics) and 3m springboard diving*. However, proposals for other events are still open for consideration.

For the purposes of enhancing the goals originally set by the Sub-commission and to bring about further progress in Biomechanics, the Sub-Commission is seeking the input and participation of interested fellow biomechanists world-wide. You can contribute to the project in the following ways:

1. Prepare and submit a research proposal for an investigation to be carried out within the framework of the total project.
2. Take part in the data collection and/or analysis of one phase of the project.

## Proposal Guidelines

(Both types of proposals should include a short curriculum vitae)

### *Projects*

The proposal to conduct a research project should be limited to a total of four single spaced pages containing the following information:

1. Include statement of purpose, methods, importance, practical and scientific relevance.
2. Indication of available financial support (not a requirement for consideration).

continued...

*Support of Data Collection and/or Analysis*

Colleagues interested in providing support for data collection and/or analysis are invited to submit a two page, single spaced application including:

1. Type of support to be provided. (e.g. film analysis, statistical treatment etc.)
2. Type of equipment available (film analyzer, computer etc.)

Applications, proposals and inquiry letters should be sent to me at the following address and the applications must arrive no later than *September 1, 1987* in order to be eligible for evaluation:

Prof. In-seong Hwang  
Dept. of Physical Education  
Yonsei University  
134 Shin-chon Dong, Seo-dae-moon Ku,  
Seoul 120, Korea

As the coordinator for this project it is my sincere wish that you could join us in the project and thank you for your kind interest.

*ISBS ELECTION RESULTS*

The results of the elections are out! Thanks to our Secretary General, Gail G. Evans.

President:  
**LARRY HOLT**

VP for Conferences an Meetings:  
**LEFThERIOS TSAROUCHAS**

VP for Public Relations and Awards:  
**BARBARA GOWITZKE**

Secretary General:  
**JACKIE HUDSON**

*\* Congratulations and good luck \**

++ the latest ISBS conference news++

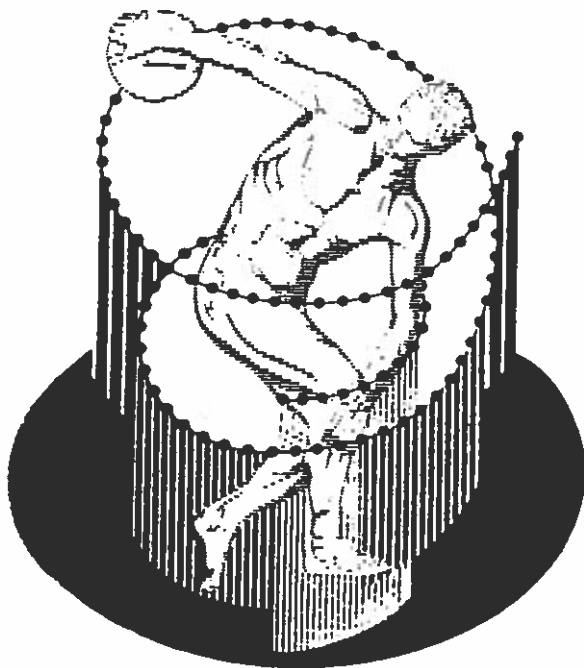
Dr. Lefteris Tsarouchas, Chairman of the Organizing Committee of the fifth ISBS Symposium on Biomechanics in Sports just informed me, that "all systems are 'go'" for the conference. More than 100 Papers have been submitted for presentation. The number of participants and delegates is expected to far exceed previous conferences. Also, we are happy to welcome a considerable number of scientists from eastern block countries who have registered and will present papers. Many coaches have expressed interest in the conference. Thus this year's symposium in Athens should be a truly challenging and rewarding experience for all participants.

Lefteris would also like to remind you, that he will try to accomodate any kind of special requests you might have, be it cheap(er) accomodation or contacts with a travel agency if you have special plans for an extended stay in Greece. So whatever your problem may be just write to:

Dr. E. Tsarouchas  
Hellenic Sports Research Institute  
Olympic Sports Center of Athens  
37, Kifissias Ave. Maroussi  
151 53 Athens, Greece

Phone: 01 6834060  
Telex: 210247 OLST GR

++ the latest ISBS conference news++





*Let's all meet at the...*

Official Symposium of the  
**INTERNATIONAL SOCIETY  
OF BIOMECHANICS IN SPORTS**

July 13 - 17, 1987 Athens Greece  
Organized by the Hellenic Sports Research Institute

**INVITATION**

The aim of the symposium is to report research in the area of biomechanics in sports.

Researchers from different disciplines as well as coaches and teachers who share a common interest in Sports Biomechanics and its applications will have an opportunity to exchange scientific knowledge and experience and enhance collaboration and friendship.

**TOPIC**

**BIOMECHANICS OF SPORTS**

- Biomechanics of power sports
- Biomechanics of endurance sports
- Biomechanics of skill sports

**SPECIAL TOPIC**

- Biomechanics of Track and Field
- Biomechanics of Wrestling

**GENERAL BIOMECHANICS OF SPORTS**

- Biomechanics of the musculoskeletal system
- Orthopedic Biomechanics
- Rehabilitation Biomechanics
- Biomechanical methods
- Biomechanics of sports equipment

**GENERAL INFORMATION**

The Symposium will be held in the congress hall of the stadium of "Peace and Friendship" in Piraeus. The official language is English with simultaneous translation into Greek. The registration fee of 200 US \$ includes registration materials, social events, the program, exhibitions, proceedings and much more. Accompanying persons may participate in a special social program.

The program includes a **FILM AND VIDEO FESTIVAL!**

*If you have not registered yet please contact the conference secretariat as soon as possible!*

CONFERENCE SECRETARIAT  
HELLENIC SPORTS RESEARCH INSTITUTE  
Olympic Sports Center of Athens  
37, Kifissias Ave. Maroussi  
151 53 ATHENS, GREECE

# NEW SPORTS SCIENCE PUBLICATIONS

## *BIOMECHANICS IN SPORTS III & IV* PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM OF BIOMECHANICS IN SPORTS, HALIFAX, CANADA

Edited by J. Terauds, B. Gowitzke and L. Holt

Contributors include: D. Kelley, W.D. Stanish, C.A. Putnam, S.J. Phillips, P.J. Bishop, J. Ostarello, R. P. Wells, G. Vailiant, R. Therien, J. W. Kozey, C. Wielki, M. Cairns, C. Choroszy, K. H. Han, S. J. Stanhope, S. Plagenhoef, T. Nazarov, W. E. Morrison, E. Kreighbaum, J. Terauds, G. E. Garrett, J. Barham, A. B. Shetty, P. Susanka, J. Stepanek, S.L. Smith, M.A. Looney, R. Assente, F. Ferrigno, A. Pedotti, R. Rodano, W. R. Morgan, D. Schieb, H. Shimada, K. Nakazawa, T. Nakawura, H. Yamamoto, J. Wilkerson, M. Satern, A. Bauer, T. Bober, H. Kilani, M. Alkilani, C. J. Widule, C. Pope, L. Dee, M. Adrian, L. Anjos, G. W. Marino, P. A. Bullock, H. Shimada, J. P. Stothart, J. S. Thoden, F. Reardon, A. Reid, K. maessen, L. E. Holt, A. Stacoff, X. Kaelin, E. Stuessi, L.B. Sardinha, C. J. Zebas, M. Ridgeway, L. Pattaki, M. A. Brody, S. Messier, E. W. Brown, W. Witten, B. Hwaahn, M. Usman, J. M. Rodriguez, J. Mahr, M. Leigh, P. Francis, Y. Hirono, E. G. Dunn, P. J. Russell, P. K. Smith, I. Hwang, K.S. Lee, N.L. Pike, M. T. Gallivan, T. B. Hoshizaki, P. D. Campagna, A. B. Alexander, F. Vassallo, C. A. Rose, C. Burte, J. T. Kearney, R. Shapiro, B. A. Gowitzke, A. B. Brown, D. McKenzie, S. G. Prassas.  
460 PAGES, ILLUSTRATED, \$ 33.00

## *BIOMECHANICS OF HOCKEY, SKATING AND SKIING*

Edited by J. Terauds, B. Gowitzke and L. Holt

Contributors include: Ludek Bubac, National Coach of Czechoslovakia; Pekka Luhtanen, University of Jyvaskyla, Finland; H.G. Kirchner, T.B. Hoshizaki and R. Beaulac, McGill University, Montreal, Canada; T.A. Smith, P.J. Bishop and R.P. Wells, University of Waterloo, Canada; G.W. Marino and P.A. Bullock, University of Windsor, Canada.

This is a book of integrated biomechanics on various aspects of ice hockey in particular.

162 PAGES, ILLUSTRATED, \$ 18.60

## *HOW TO INCREASE YOUR LIFESPAN*

Science reveals keys to longevity and quality of life

BY: J.G. Crakes

300 PAGES, ILLUSTRATED, \$ 21.50

## *UNIVERSITY ADMINISTRATION PROCEDURES*

BY: J. Terauds

A practical guide on how to administer at a university or college at the chairperson and dean levels in particular.

80 PAGES, \$ 9.50

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You may order any of these books from RCS, Box 188, DEL MAR, CA 92014. Please note that all orders are on prepaid basis only !  
For handling add \$3 for U.S. and \$5 for all other.



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**ISBS**

*International Society of Biomechanics in Sports*