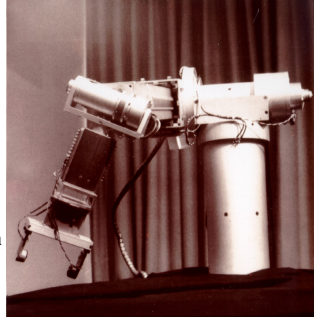# Mechanisms
Organizers & Chairs: Shigeo Hirose, Victor Scheinman

Robots I have Known
Victor Scheinman

- From Alien Robots to Robot Worlds

- Bernie, John, Joe, Marvin

- Servos, Sensors, Software, Systems

- ARPA - Applications - Automation - Automatix

Coupled and Decoupled Actuation of Robotic Mechanisms
Shigeo Hirose and Keisuke Arikawa
Tokyo Institute of Technology

- Introduction of Coupled and Decoupled Actuation, or CDA.

- Maximization of robotic performance by CDA.

- Examples of optimal mechanical design by CDA.

- Examples of optimal motion control by CDA.
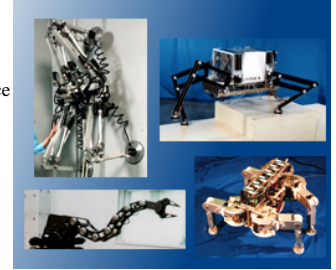
Scaling of Robotic Mechanisms
K. J. Waldron and C. Hubert
Ohio State University

- Designing from similar systems

- Biomimetic implications

- Geometric & kinematic scaling

- Scaling actuator performance
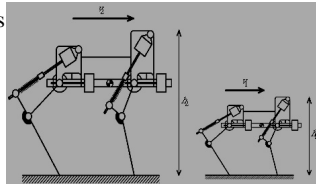
A Mechatronics Approach to the design of light-weight arms and multifingered hands
G. Hirzinger, J. Butterfass, M. Fischer, M. Grebenstein, M. Haehnle, H. Liu, I. Schaefer and N. Sporer
German Aerospace Center (DLR)

- Introduction

- DLR's light weight robot concepts including programmable impedance: the second generation is available now

- Development of four-fingered hands (DLR hands I and II), integrating twelve actuators

- Resume

Mechanism Synthesis Theory and the Design of Robots
J. Michael McCarthy
University of California, Irvine

TerminatorBot: A Robot with Dual-Use Arms for Manipulation and Locomotion
Richard Voyles
University of Minnesota

- Small, resource-constrained robots require innovation

- Dual-use limbs provide manipulation and locomotion

- Novel gaits were created for the novel mechanism

- Locomotion demonstrated, adaptive manipulation under investigation