

Ph.D Mentoring Program

Henryk Flashner

Dept. of Aerospace and Mechanical Engineering

Background in Industry

- *Industrial experience in aerospace industry*
 - *TRW Space Technology Group*
 - *Control Analysis Department*
- *Duties*
 - *Internal Research and Development*
 - ◆ *Principal Investigator Large Space Structures Control*
IRAD
 - *Control Analysis of Spacecraft Missions*
 - ◆ *Power Extension Package, 25KW System*

Academic Background

- *Education*

- *B.S and M.S in Mechanical Engineering from Technion-Israel Institute of Technology*
- *Ph.D UC Berkeley, Mechanical Engineering*
 - ◆ *Dissertation: Stability of Periodic Systems*
 - ◆ *Major Areas: Control Systems , Nonlinear Dynamics*

- *Research Areas*

- *Dynamics and Control Analysis of Mechanical Systems*
 - ◆ *Spacecraft Control, Control of Rotating Systems, Flexible Systems*
- *Nonlinear Dynamics*
- *Biomechanics*

Academia vs Industry

- *Industry*
 - *Work in a team work setting*
 - *Communication skills*
 - *Relatively slow progress to leadership position from which one can exert influence.*
- *Academia*
 - *Leadership on projects is immediate*
 - *Teaching – must like it and be able to do it*
 - *Independent in selecting research topics*
 - ◆ *Subject to funding opportunities*

Industrial Experience

- *Influence on Research in Academia*
 - *Many of my research topics are motivated by applications*
 - *Formed view that research in engineering needs to be motivated by one of the following*
 - *Need of solving a problem – develop a new method for solution*
 - *Need for explaining phenomena*
 - *Develop techniques that has a chance in a future to real problems*
- *Allowed for Interaction with Aerospace Industry*
 - *Consulting for aerospace*
 - *Joint projects*
 - *Allowed to develop new research directions (Biomechanics)*

Career in Industry and/or Academia?

- *Industrial experience is an advantage in subsequent academic career*
 - *Allows for better interaction with industry*
 - *Allows for better choice of research topics that can be implemented and useful in applications*
 - *Provides experience what it takes to produce a device that works*
- *Transition from industry to academia*
 - *After 4-5 years in industry*
 - *After about 20 years in industry*