

Panel on Future Directions in Control and Dynamical Systems

**Panel Meeting
16-17 June 2000**

Outline

- 1. Motivation for the Panel**
- 2. Panel Organization and Composition**
- 3. Meeting Objectives and Agenda**

Motivation for the Panel

Articulate the challenges and opportunities for the field

- Present a vision that can be used to inform high level decision makers of the importance of the field to future technological advances
- Identify possible changes in the way that research is funded and organized that may be needed to realize new opportunities
- Provide a compelling view of the field that continues to attract the brightest scientists, engineers, and mathematicians to the field

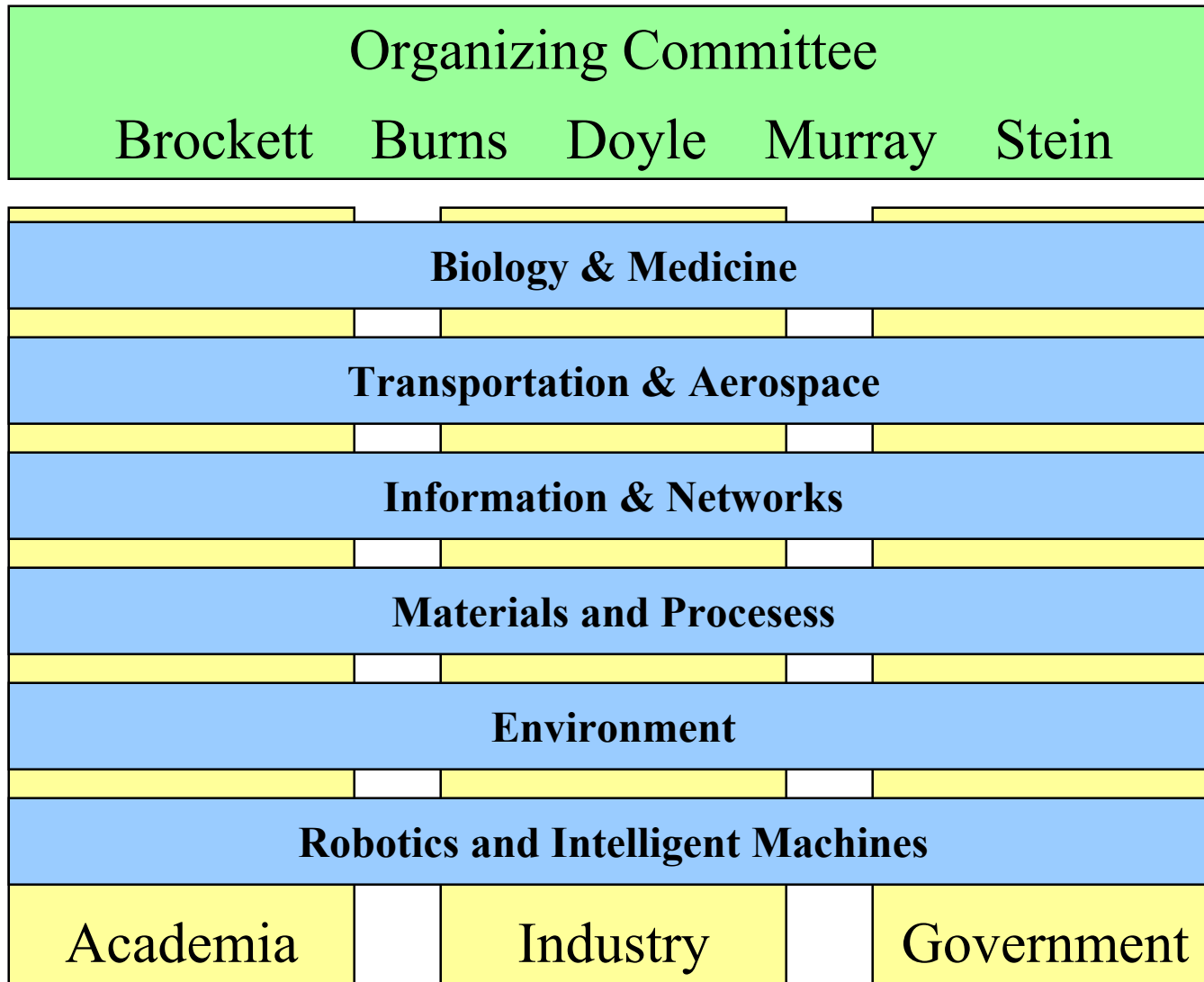
Update the 1988 Fleming report

- Presented a view of the field at a time when computation and experiments were emerging as important trends in control
- Focused primarily on issues of a mathematical nature

Respond to the changing nature of control and dynamical systems research

- Many new application areas where controls tools are playing a stronger role: biology, environment, materials, information, networks, ...
- Controls engineers taking on a much broader, systems-oriented role, while maintaining a rigorous approach and practical toolset

Panel Organization



Panel Composition

Karl Astrom
Lund Institute
of Technology

Siva Banda
Air Force
Research Lab

Roger Brockett
Harvard

John Burns
Virginia Tech

**Munther
Dahleh**
MIT

John Doyle
Caltech

**John
Guckenheimer**
Cornell

**Charles
Holland**
DDR&E

**Pramod
Khargonekar**
U. Michigan

**P. S.
Krishnaprasad**
U. Maryland

P. R. Kumar
U. Illinois,
Champagne-
Urbana

**Jerrold
Marsden**
Caltech

Greg McRae
MIT

George Meyer
NASA Ames

**Richard
Murray**
Caltech

**William
Powers**
Ford

Gunter Stein
Honeywell

Pravin Varaiya
UC Berkeley

Meeting Objectives

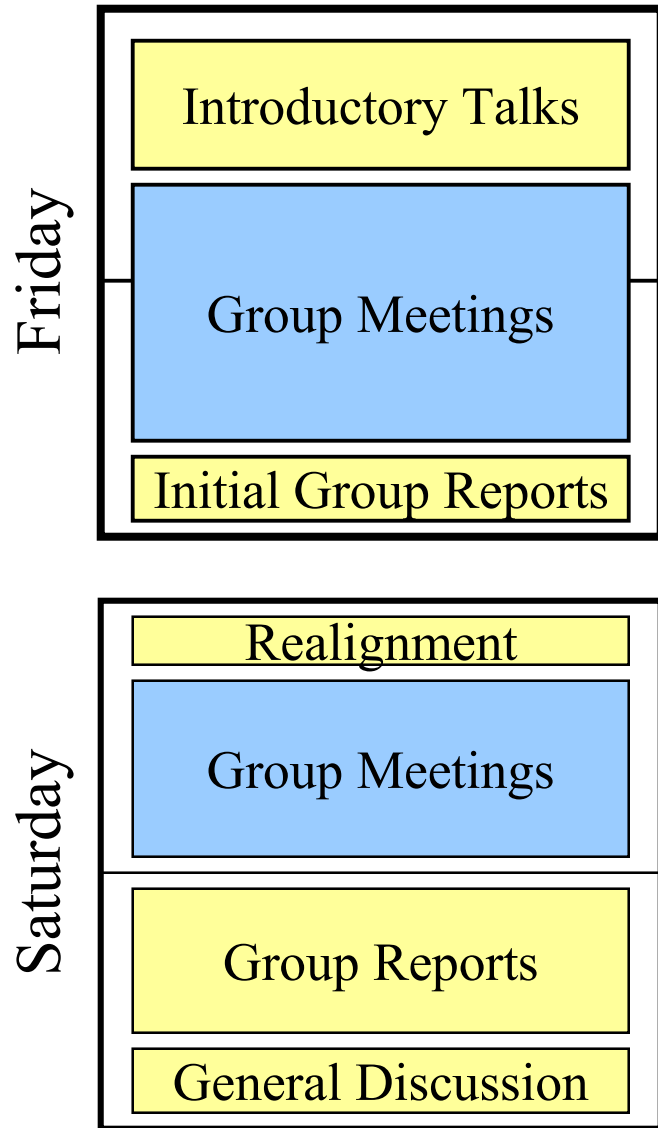
Obtain preliminary input from members of the control and dynamical systems community and the applications community that will be used as the basis for the panel's recommendations

- Identify future application areas of significant importance to the industrial and defense base that are enabled by control and dynamical systems theory and practice
- Identify a list of possible vignettes highlighting past successes and future opportunities
- Identify the possible organizational structures (universities, university-industry collaboration, funding agencies) that might be required to take move the field forward

Decide on next steps for producing the report

- Additional meetings, other mechanisms for collecting opinions and data
- Web page: copies of presentations + bulletin board discussion

Meeting Agenda



Friday Schedule

8:00	Breakfast
8:30	Welcome, Murray
8:45	Fleming report, Burns
9:00	Future Directions Doyle, Stein?, Sastry, Brockett
11:00	Charge to groups, Murray
11:15	Break
11:30	Group discussions
12:15	Lunch
1:30	Group discussions
4:30	Initial group reports <ul style="list-style-type: none">• Challenges, opportunities• Organizational issues
5:30	Adjourn