

Medical Policy Formulation for Extreme Environments



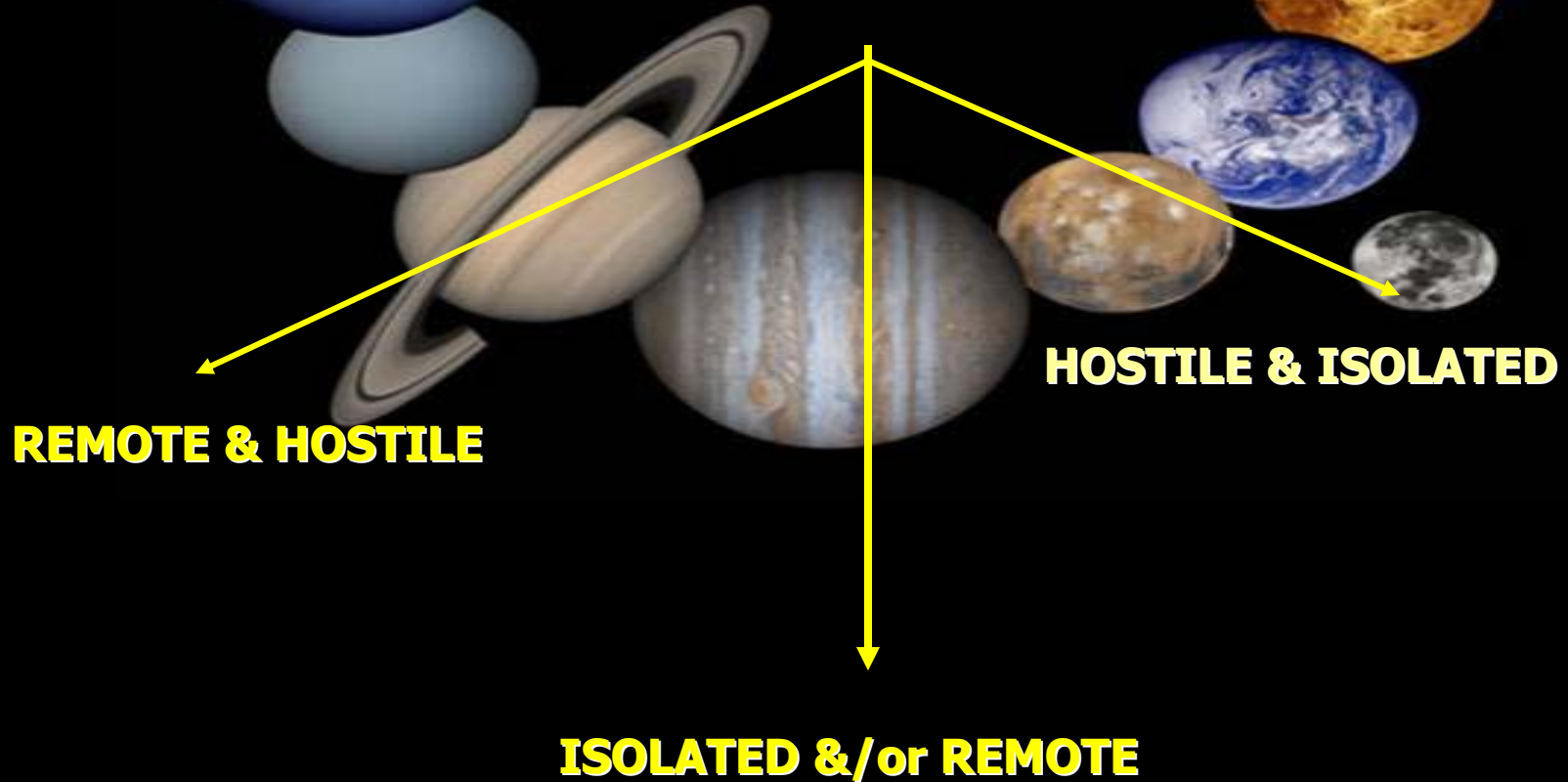
from Dr. Desmond Lugg

SPP_GMU Research Team
August 24 – 25, 2003

Medical Policy in Perspective

- In Mid 1942 the US Navy changes its selection medical policy:
 - Lowers the standards for the visual acuity
 - Lowers the dental requirements to “ a functional demonstrated ability and enough teeth to chew”
 - Use of dentures

Proposed Classification for Extreme Environments



CONTINUITY OF HEALTH CARE, RESCUE & ESCAPE CAPABILITY to be factored in

Extreme Environments Definition (s)

Proposed Categories

- **Geographic**
 - Remoteness
 - Isolation
 - Ecology
 - Physical and Environmental Characteristics
- **Survival**
 - Resources
 - Technology
 - Rescue/escape
- **Size of the Expedition**

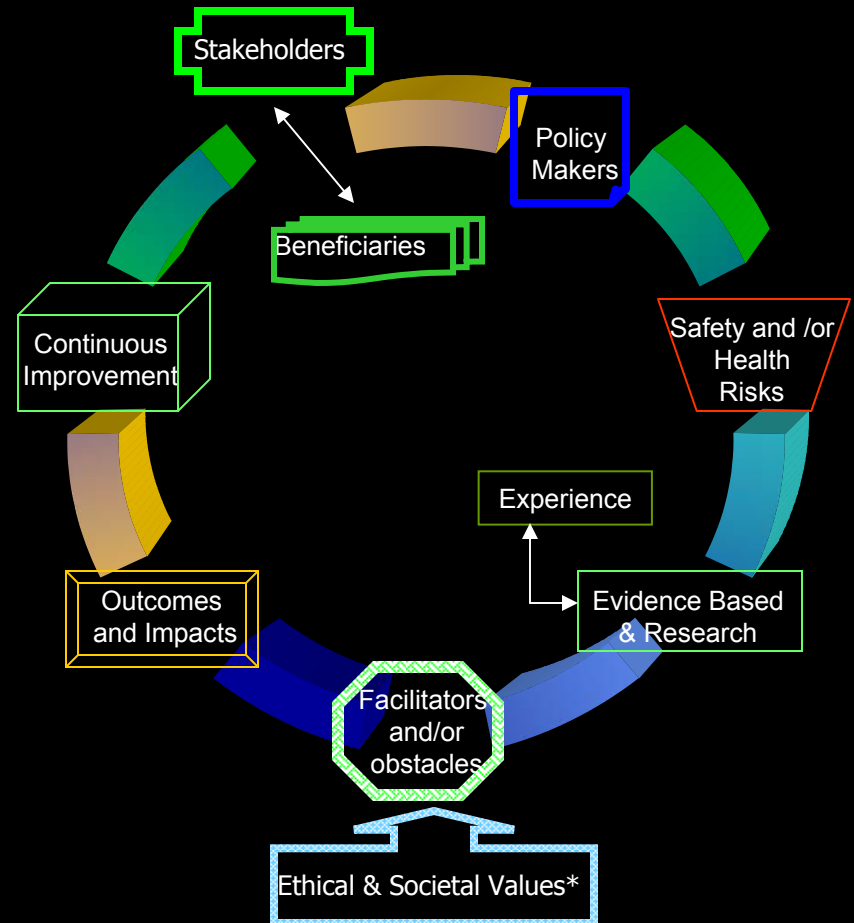
GMU Selected Survey Categories

- **Aviation**
- **Space**
- **Polar Regions**
- **Offshore**
 - **Drilling**
 - **Prospecting**
- **Wilderness**
 - **Fire & Rescue**
 - **Tourism**
- **Workers involved in**
 - **Mining**
 - **Nuclear & Radiation**

Format for Presentations

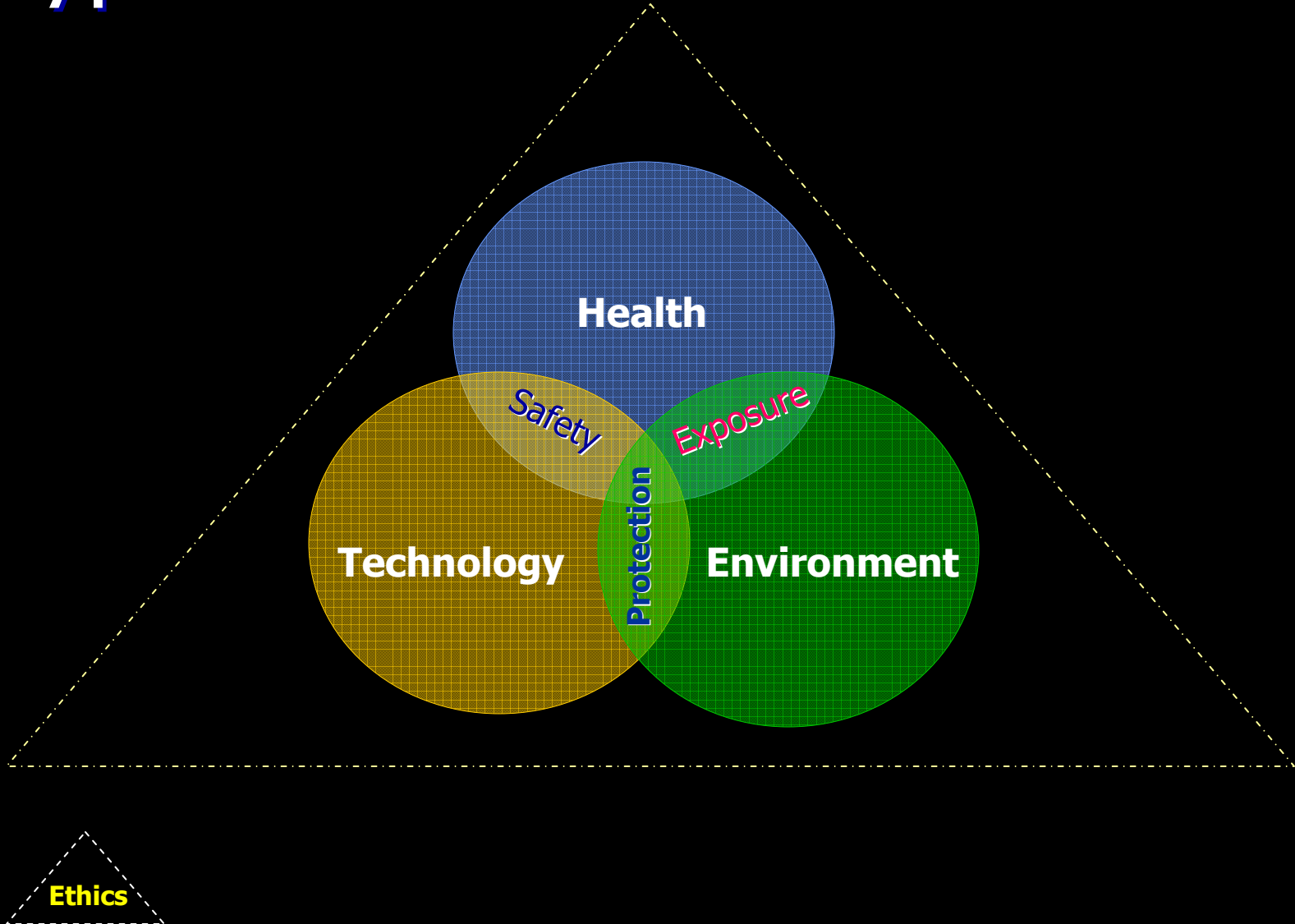
- **Please identify in your presentation**

- Stakeholders: private, commercial, federal, state (public)
- Policy Makers: regulatory, legal, mandated
- Environmental and Technological Health and Safety Induced Risks
- Safety and Health Risks based on the duration of the expedition
- Emphasis on “health and safety” or “safety as a substitute for health” (occupational vis.individual health and preventive care)
- Evidence based policy formulation
- Experience based policy formulation
 - What did or did not work
 - What had no added value
 - What did more harm than good
- Facilitators and obstacles(resources, infrastructure, organizations, etc.)
- Evaluation and training tools and requirements (continuous improvement)
- Desired outcomes and impacts
- Ultimate beneficiaries: explorers, public, others?



*For Session A & B Discussions Only

Types of Risks Addressed



Ethics

- **Standard of Care**

- Allocating limited resources
- Training/Skills
- Societal & Cultural Values

- **Priority in Care**

- Triage
- Survival
- Evacuation/rescue

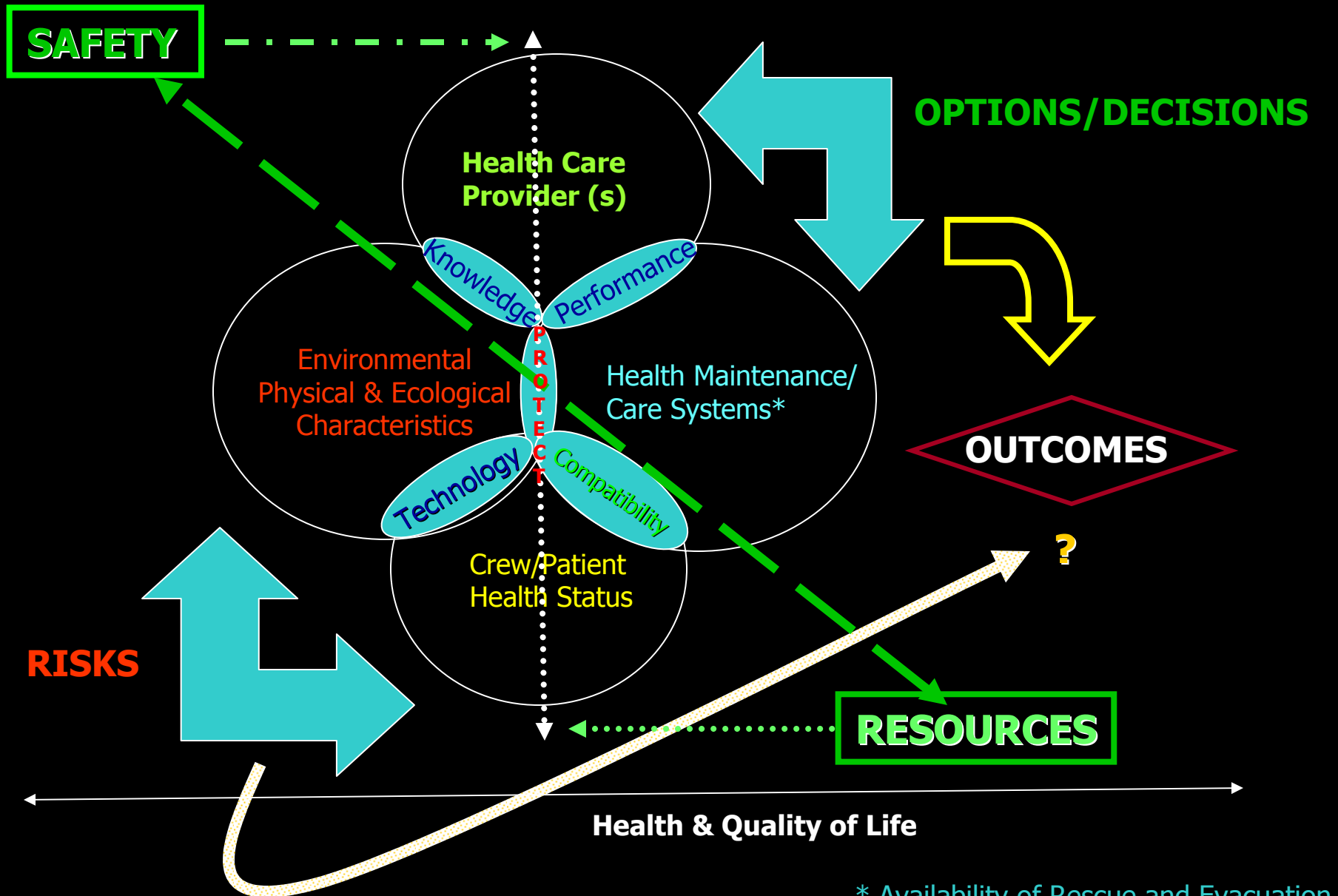
- **Decision Making**

- No relatives
- Euthanasia
- Advance directive
- Acceptance of Risk (s)
- Consequences of each option
- Research cost and benefit

- **Special Considerations**

- **Liability**
- **Special Need Groups**

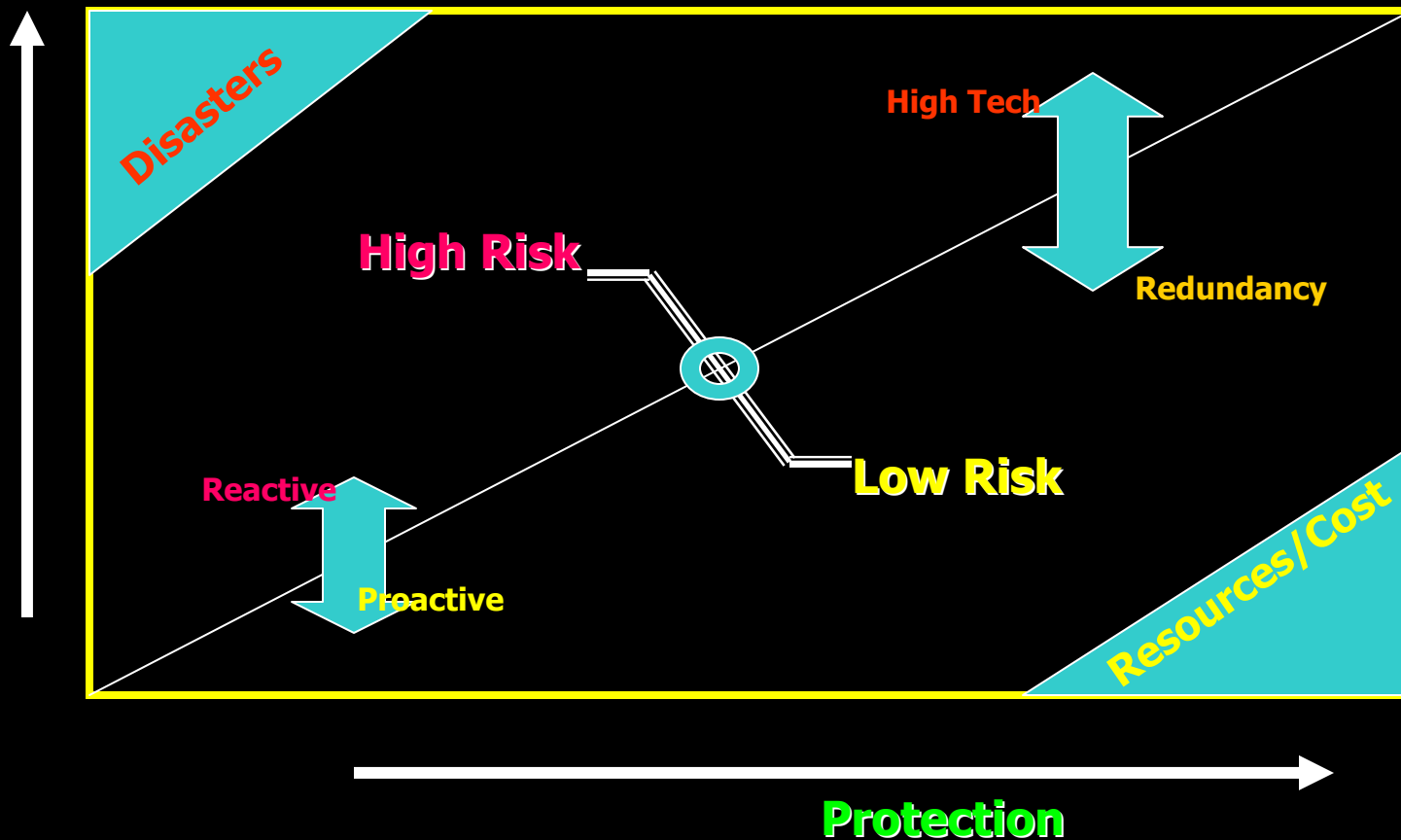
Determinants in Safety and Health



* Availability of Rescue and Evacuation

Relationship Between Protection and Exploration

Exploration



Risks

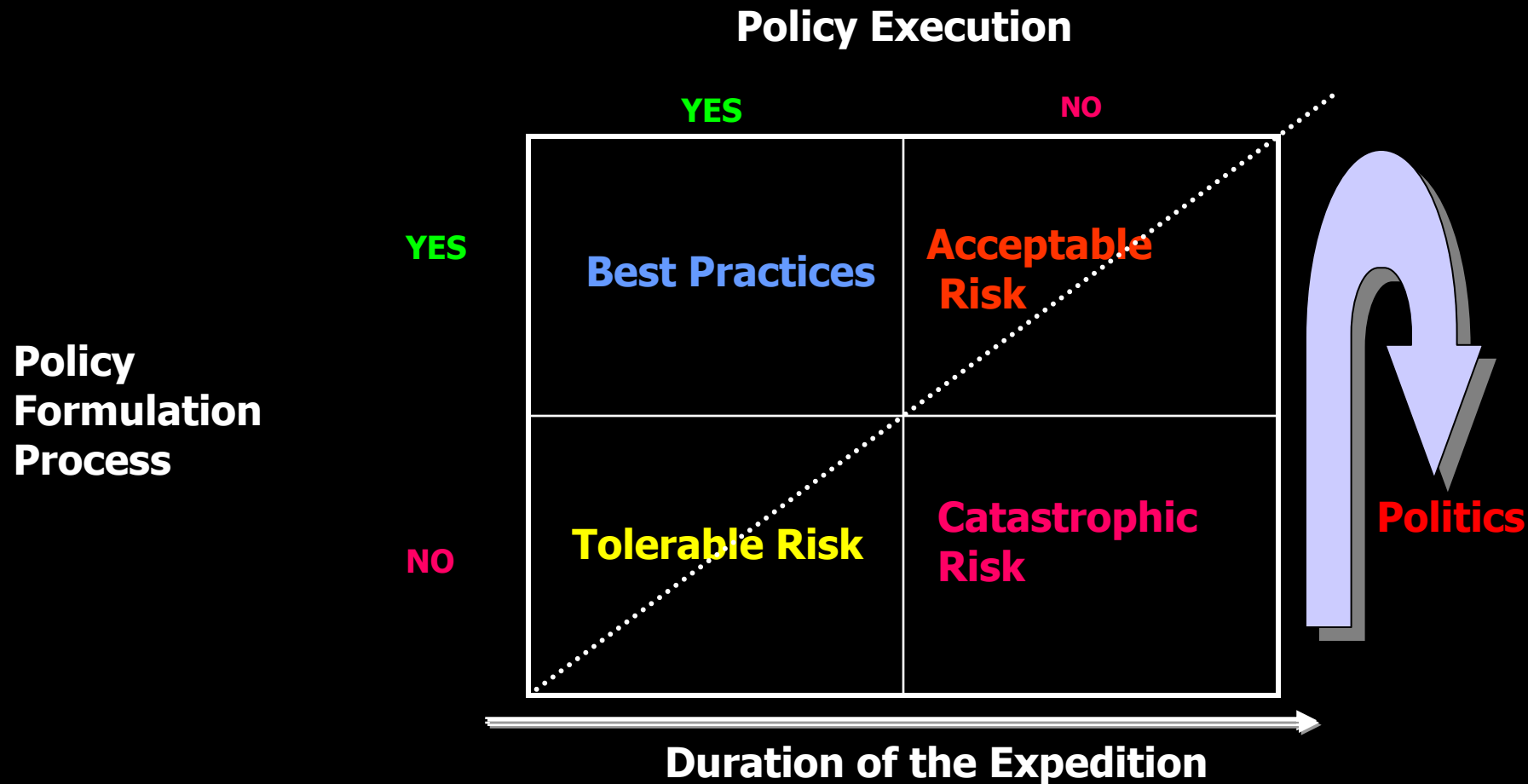
Tolerable Risks

=

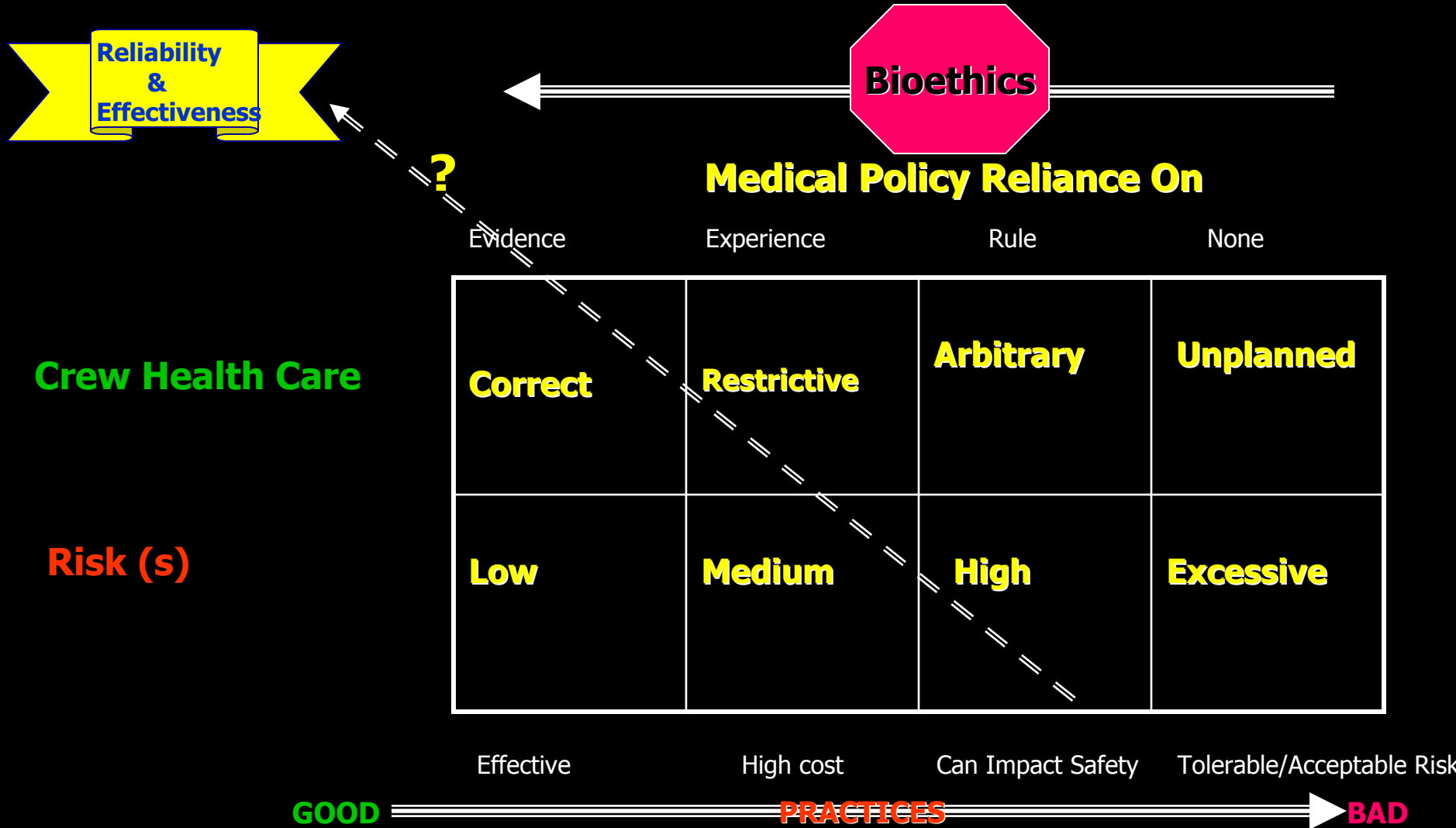
Acceptable Risks

How do we define similarity or commonality

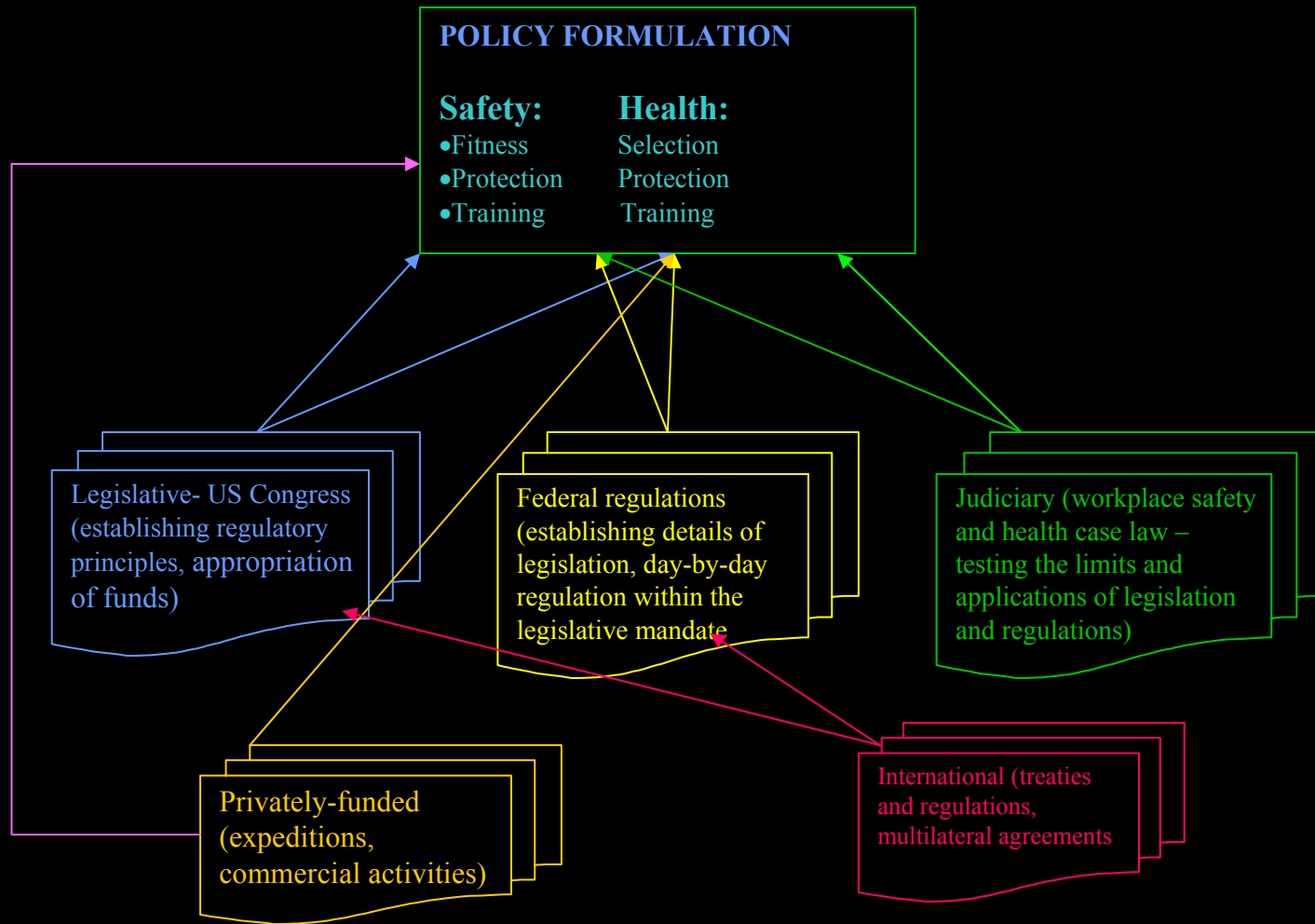
Health and Safety Policy Formulation/Execution and Risks



Approaches to Medical Policy Formulation



Background Research



Example of AltaVista Survey Results

- **4500 websites were surveyed**
- **550 yielded significant results**
 - **35 departments or organizations have issued health, safety, or health and safety regulations or recommendations related to exploration and/or travel in extreme environments**
 - **15 relevant sub-links were detected for each department/organization.**

SEARCH PHRASE

RESULTS

| | |
|--|----|
| “health and safety standards” AND “extreme environments” | 6 |
| “safety standards” AND “extreme environments” | 81 |
| “health standards” AND “extreme environments” | 12 |
| “medical standards” AND “extreme environments.” | 18 |

Special Reviews

Additional database searches, such as GPO's database of the Code of Federal Regulations (15 years back), LexisNexis for related legal cases (10 years), and relevant actions in the U.S. Congress (10 years), National Library of Medicine for peer-reviewed articles, and The Library of Congress for books on health policy in extreme environments.

US Regulations*, Policies & LAWS

| Environment | Regulation | | Recommend | | Vol. Rule | | Dept. Order | | Exec. Order | | Pub. Law | |
|---|------------|---|-----------|---|-----------|---|-------------|---|-------------|---|----------|---|
| | H | S | H | S | H | S | H | S | H | S | H | S |
| Aviation | + | + | | | + | + | | | | | | |
| Mining | + | + | + | + | | | | | | | + | + |
| Space | + | + | + | + | + | + | | | | | | |
| Polar | + | + | + | + | | + | | | + | + | | |
| Wilderness F&R | + | + | | | | | + | | + | + | | |
| Wilderness Tourism | | | + | + | + | + | + | | | | | |
| Offshore Drilling Offshore Exploration | + | | + | + | + | + | | | | | | |
| Radiation | + | + | | | | | | | | | + | + |

Legend H = Health S = Safety

*OSHA as applicable

International Policies and Laws

- Aviation
- Mining
- Space Exploration
- Polar Exploration
- Wilderness Fire & Rescue*
- Wilderness Tourism*
- Offshore Drilling*
- Offshore Exploration*
- Radiation

| Health | Safety |
|--------|--------|
| + | + |
| | + |
| | + |
| | + |
| | |
| | |
| | |
| | |
| + | + |

* Not found in this search (will require additional investigations)

Proposed Modeling Approach

A Model for Expedition Policy Formulation Process

