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# Space Human Factors Publications: 1980-1990

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# Space Human Factors Publications: 1980–1990

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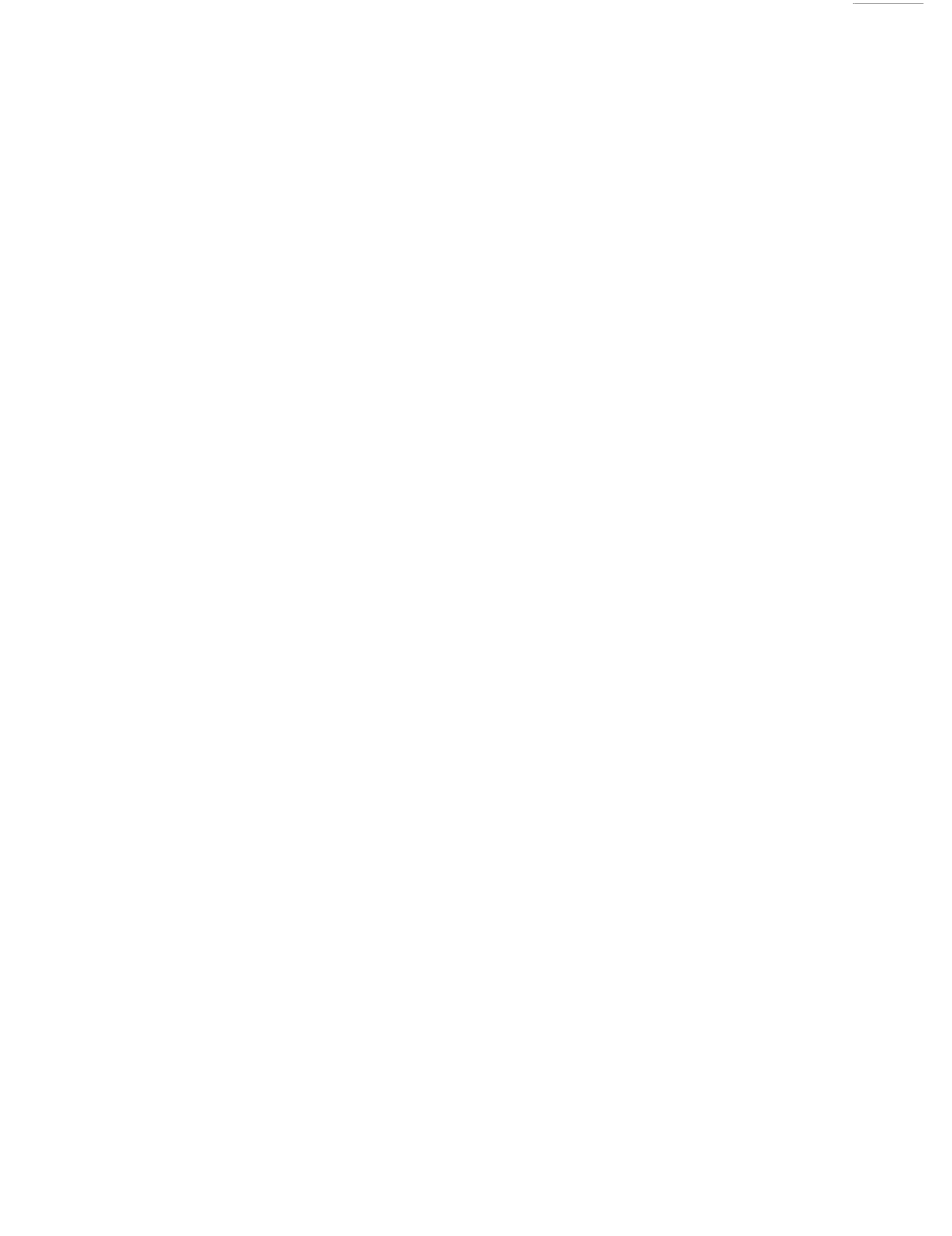
## INTRODUCTION

The Space Human Factors Program is part of the Life Sciences Division of NASA's Office of Space Science and Applications. Space life sciences research was initiated in 1960 with the goal of enabling human survival in space. Now, in the late 20th century, the program is evolving to ensure human health and productivity on space missions: on the Space Shuttle in the 1990s, then on Space Station Freedom, and ultimately on the Moon and missions to Mars.

One of the critical elements that must be considered in the strategic planning necessary to ensure success of these goals is human factors. The mission of the Space Human Factors Program is to develop the knowledge base required to understand the basic mechanisms underlying behavioral adaptation to space flight and the capabilities and limitations of the crewmember in the unique environments that will be encountered during future missions. It requires an in-depth understanding of psychological and behavioral adaptation to space and the ways in which adaptive behaviors influence or affect performance. The program also develops and validates system design requirements, protocols, and countermeasures that ensure the psychological well-being, safety, and enhanced productivity of space crewmembers.

This broad effort encompasses basic, applied, and operational research both at NASA Centers and at universities. Research conducted in ground-based laboratories, mock-ups, simulators, analog environments, and on Space Shuttle missions is aimed at the collection of qualitative and quantitative data and the development, testing, and validation of behavioral and performance models to ensure an accurate understanding of the space human performance envelope. Specific issues critical to understanding human performance in space and to developing requirements for extended duration missions in which research has been conducted include the development and evaluation of selection criteria for space crewmembers, group dynamics, crew coordination and communication issues utilizing various analog environments, the interface of human operators and non-human intelligence systems and automation concerns, and studies of workload, mission task analysis, and computer-aided decision-making. Other areas of focus have included the operational impacts of disrupted circadian rhythms and sleep cycles and the collection of anthropometric data using computer modeling and graphics to create three-dimensional representations of bodies in spacecraft, at workstations, and during extravehicular activity and the integration of such data into models that can predict performance in space.

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SPACE HUMAN FACTORS PRINCIPAL INVESTIGATORS FUNDED  
DURING THE PERIOD 1980-1990

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16. Abstract <p>A 10-year cumulative bibliography of publications resulting from research supported by the NASA Space Human Factors Program of the Life Sciences Division is provided. The goal of this program is to understand the basic mechanisms underlying behavioral adaptation to space and to develop and validate system design requirements, protocols, and countermeasures to ensure the psychological well-being, safety, and productivity of crewmembers. Subjects encompassed by this bibliography include selection and training, group dynamics, psychophysiological interactions, habitability issues, human-machine interactions, psychological support measures, and anthropometric data. Principal Investigators whose research tasks resulted in publication are identified by asterisk.</p>					
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