

1. Record Nr.	UNINA9910817466803321
Titolo	Future biotechnology research on the International Space Station // Task Group for the Evaluation of NASA's Biotechnology Facility for the International Space Station, Space Studies Board, Commission on Physical Sciences, Mathematics, and Applications, National Research Council
Pubbl/distr/stampa	Washington, D.C., : National Academy Press, c2000
ISBN	0-309-17217-9 1-280-18553-8 9786610185535 0-309-56294-5
Edizione	[1st ed.]
Descrizione fisica	1 online resource (87 p.)
Collana	The compass series
Disciplina	660.6/072019
Soggetti	Biotechnology - Research Space biology - Research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references (p. 48-49).
Nota di contenuto	Future Biotechnology Research on the International Space Station -- Copyright -- Foreword -- Preface -- Acknowledgment of Reviewers -- Contents -- Executive Summary -- BACKGROUND AND SCIENTIFIC SCOPE OF NASA PROGRAMS -- Protein Crystal Growth -- Cell Science -- INSTRUMENTATION -- Protein Crystal Growth -- Cell Science -- Overall Volume Allotment for Biotechnology Research on the ISS -- SELECTION AND OUTREACH -- Protein Crystal Growth -- Cell Science -- 1 Background and Scientific Scope of NASA Programs -- INTRODUCTION -- PROTEIN CRYSTAL GROWTH -- The Significance of Crystallographic Resolution Limits -- Goals and History of the NASA Protein Crystal Growth Effort -- Results to Date: Examples of Successful Experiments and the Importance of Defining Controls -- Potential Areas of Future Impact -- Potential Benefits of the Space Station Platform -- Potential for Interest from Commercial Entities -- CELL SCIENCE -- Goals and Potential Impacts of the NASA Cell Science Effort -- Experimental Design and Instrumentation -- Requirements for

Interprogrammatic Coordination Within NASA -- 2 Instrumentation --
LOGISTICS FOR USING THE INTERNATIONAL SPACE STATION AS A
BIOTECHNOLOGY RESEARCH PLATFORM -- PROTEIN CRYSTAL GROWTH
-- The Hardware Development Process -- Key Characteristics of Protein
Crystal Growth Hardware on the ISS -- The X-ray Crystallography
Facility -- CELL SCIENCE -- Cell and Tissue Culture Hardware --
Experiment Management -- Storage, Transport, and Throughput of
Samples -- OVERALL VOLUME ALLOTMENT FOR BIOTECHNOLOGY
RESEARCH ON THE ISS -- 3 Selection and Outreach -- SELECTION
PROCESS, OUTREACH EFFORTS, AND COMMUNICATION AMONG
PROGRAM PARTICIPANTS -- Improving the Dissemination of NRAs and
NASA Program Results -- Improving the Selection Process -- Improving
Connections to Relevant Communities and Attracting the Best Science.
Coordination: Investigators and Operations Personnel -- PROTEIN
CRYSTAL GROWTH -- The Guest Investigator Program -- Funding
Research on Biologically Challenging Problems -- CELL SCIENCE --
Cooperation with NASA's Life Sciences Division and with Other Federal
Agencies -- Resource Management and Communication in Times of
Crisis -- Bibliography -- Appendixes -- A Hardware Available or in
Development and Schedule for Biotechnology Research on the
International Space Station -- HARDWARE FOR PROTEIN CRYSTAL
GROWTH IN SPACE -- Basic Apparatus to House Protein Crystal Growth
Hardware -- Protein Crystal Growth Hardware -- Devices in Fabrication
for in Situ Observation of Crystallization on Orbit -- Devices in Early
Definition Phase for in Situ Observation of Crystallization on Orbit --
X-ray Crystallography Facility -- Relevant Support Equipment --
HARDWARE FOR CELL SCIENCE IN SPACE -- Cell and Tissue Culture
Hardware in Development for ISS -- Cell Science Support Equipment --
General Support Equipment Relevant to Cell Science Research --
Analytical Equipment -- Miscellaneous -- SCHEDULE -- B Biographical
Sketches of Task Group Members -- C Statement of Task -- D Glossary
-- E Acronyms and Abbreviations.
