Biology

Cardiovascular/cardiopulmonary

2-DK, Effects of Microgravity on Total Peripheral Vascular Resistance in Humans, Peter Nors, M.D., Ph.D., DAMEC Research, Copenhagen, Denmark, ESA

4-L, Arterial Baroreflex Control of Sinus Node during Exercise in Microgravity Conditions, Fernando Iellamo, M.D, Univ. of Rome Tor Vergata, Rome, Italy, ESA

8-D, Influence of Weightlessness on Heart Rate & Blood Pressure Regulation—Responses to Exercise &Valsalva Maneuver, Uwe Hoffmann, Ph.D., Deutsche Sport Hochschule, Cologne, Germany, ESA

9-NL, Physiological Parameters that Predict Orthostatic Intolerance After Spaceflight, John Karemker, Ph.D., Univ., of Amsterdam, Amsterdam, Netherlands, ESA

11-DK, Initial Effects of Microgravity on Central Cardiovascular Variables in Humans, Regitze Videbaek, M.D., Univ. Hospital Copenhagen, Copenhagen, Denmark, ESA

12-I, Adaptation of Spontaneous Baroreflex Sensitivity to Microgravity, Marco Di Rienzo, Ph.D., Centro di Bioingegneria LaRC, Milano, Italy, ESA

E386, Arterial Remodeling and Functional Adaptations Induced by Microgravity, Michael Delp, Ph.D., Texas A&M University, College Station, TX, NASA

Gravito-inertial sensitivity

BRIC-14, Development of Gravity Sensitive Plant Cells in Microgravity, Fred D, Sack, Ph.D., OH State Univ., Columbus, OH, NASA

CEBAS, Fish Otolith Growth and Development of Otolith Asymmetry at Microgravity, H, Rahmann and R, Anken, Univ. of Stuttgart-Hohenheim, Stuttgart, Germany, DLR

DSO 635 & E118, Spatial Reorientation Following Spaceflight, William Paloski, Ph.D., NASA Johnson Space Center, Houston, TX, NASA

E127, Anatomical Studies of Central Vestibular Adaptation, Gay R, Holstein, Ph.D., Mt, Sinai Medical Center, New York, NY, NASA

MFA, Application of Physical & Biological Techniques to study the Gravinsensing and Response System of Plants, Karl H, Hasenstein, Ph.D., University of Louisiana - Lafayette, Lafayette, LA, NASA

Musculo-skeletal

7-S, Cardiopulmonary & Muscular Adaptations During & After Microgravity, Dag Linnansson, M.D., Ph.D., Karolinska Institute, Stockholm, Sweden, ESA

BONES, The Role of Bone Cells in the Response of Skeletal Tissues in Microgravity, J.P, Velduijzen, ACTA Vrije University, Amsterdam, The Netherlands, ESA

CONNECT, Function of the Focal Adhesion of Plaque of Connective Tissue in Microgravity, Ch.-M, Lapiere and A, Kholli, University of Liege, Liège, Belgium, ESA

E048, Protein Turnover During Spaceflight, Amy Ferrando, Ph.D., Univ, of TX Medical Branch/Shriners Burns Institute, Galveston, TX, NASA

E381S, Calcium Kinetics During Spaceflight, Scott M, Smith, Ph.D., NASA Johnson Space Center, Houston, TX, NASA


OCLAST, Microgravity Effects on Osteoclast (bone-removing) Driven Resorption in vitro, A, Zallone, Bari, Bari, Italy, ESA

OSMIN, Osteoblasts in Space, Dr, L, Vico, Mr, A, Guignandon, LBBTO, St, Etienne, France, ESA

OSPACE, Osteoclasts in Space, Prof, A, Zallone, Dr, Mori, Univ. of Bari, Bari, Italy, ESA

OSTEOGENE, Identification of Microgravity-Related Genes in Osteoblastic Cells, R, Bouillion, Leuven, Leuven, Italy, ESA
[bone gene regulation], Intracortical Osteoporosis Experiment in Orbit, Dennis R, Sindrey, NPS Alleix, Mississauga, Ont., Canada, CSA
[hormones and osteoblasts], Osteoporosis Experiment in Orbit, Dr, Leticia G, Rao, St, Michael's Hospital, Toronto, Ont., Canada, CSA
[sleep & immune effects on bone], Osteoporosis Experiment in Orbit, Dr, Reginald M, Gorczynski & Dr, Harvey Moldofsky, University Health Network, Toronto, Ont., Canada, CSA

Note: This is a complete listing of experiments planned for STS–107. It includes non-NASA government, commercial, and international payloads. The subheadings reflect a general breakdown and not the managerial divisions that NASA employs for its own payloads. In general, each listing gives the acronym name likely to be used during air-to-ground conversations, the formal title, the name and affiliation of the principal investigator(s), and the payload sponsor.
Earth & Space Sciences

Atmospheric
MEIDEX, Mediterranean Isreali Dust Experiment, Joachim H. Joseph, Ph.D., Tel Aviv Univ., Tel Aviv, Israel, NASA
SIMPLEX, Shuttle Ionospheric Modification with Pulsed Local Exhaust Experiment, USA, Space Test Program, Kirtland AFB, Albuquerque, NM, USAF
SOLSE-2, Shuttle Ozone Limb Sounding Experiment, Dr. Ernest Hilsenrath and Dr. Richard McPeters, NASA Goddard Space Flight Center, Greenbelt, MD, USA, NASA

Solar
SOLCON-3, Solar Constant Experiment, Dr. Alexandre Joukoff, Royal Meteorological Institute of Belgium, Brussels, Belgium, NASA

Physical Sciences

Crystallography and Molecular Structure/Educational
The Chemical Garden, 35 @ 8th-grade students, ORT Kryat Motzkin Middle School (teacher: Dr. Birnbaum), Technion University (Prof. Eleizer Kolodne), Kryat Motzkin, Israel, Technion University, Haifa

Crystallography and Molecular Structure
APCF, Advanced Protein Crystallization Facility, Crystal Structure Analysis of the Outer Surface Glycoprotein of the Hyperthermophile Methanothermus Fervidus, J.P. Declerq, University of Louvain, Louvain, Belgium, ESA
APCF, Crystalization of Enzyme and Substrate-Analog Complexes for Highest Resolution Data Collection and Refinement, C. Betzel, University of Hamburg, Hamburg, Germany, ESA
APCF, Crystalization of Photosystem I under Microgravity, P. Fromme, University of Berlin, Berlin, Germany, ESA
APCF, Effect of Different Conditions on the Quality of Thaumatin and Aspartyltransfer RNA Synthetase Crystals Grown in Microgravity, R. Giege & N. Lorber, Institut de Biologie Moléculaire et Cellulaire du CNRS, Paris, France, ESA
APCF, Solution Flows and Molecular Disorder of Protein Crystals Growth of Ferritin Crystals, S. Weinkauf, University of Munich, Munich, Germany, ESA
APCF, Testing New Trends in Microgravity Protein Crystallization: Comparison of Long Chambers With and Without Capillaries, J.M. Garcia-Ruiz & S. Weinkauf, University of Granada & University of Munich, Granada & Munich, Spain & Germany, ESA

Space Product Development

Biological processes
AST 10/1, Astroculture™ 10/1, Plant Growth Experiment, Dr. Weija Zhou, Wisconsin Center for Space Automation and Robotics, College of Engineering, Univ. of Wisconsin, Madison, Madison, Wisconsin, NASA
AST 10/2, Astroculture™ 10/2, Gene Transfer Experiment, Dr. Weija Zhou, Wisconsin Center for Space Automation and Robotics, College of Engineering, Univ. of Wisconsin, Madison, Madison, Wisconsin, NASA

Crystallography and Molecular Structure
CIBX-2, Commercial ITA Biological Experiments - 2, Bence Jones Protein Crystal Growth Project, Dr. Allen Edmundson, Oklahoma Medical Research Foundation, Oklahoma City, OK, NASA
CMPCG, Commercial Macromolecular Protein Crystal Growth, L. DeLucas, Ph.D., University of AL-Birmingham and seven others, Birmingham, AL, NASA

Technology Development

Attitude Control
STARNAV, Star Navigation, Texas A&M University, College Station, TX, CSCE/SPACEHAB

Communications
LPT, Low Power Transmitter, NASA Glenn Research Center, Cleveland, OH, NASA

Drug Delivery
CIBX-2, Commercial ITA Biological Experiments - 2, Microencapsulation of Drugs, Dr. Denis Morrison, NASA Johnson Space Center, Institute for Research, Inc., and ITA Inc., Houston, TX, and Exton, PA, NASA

Physical processes
ZCG, Zeolite Crystal Growth Furnace, Albert Sacco, Ph.D., Center for Advanced Microgravity Materials Processing (CAMMP), Northeastern Univ., Boston, MA, NASA

Educational
SEM-14, Space Experiment Module, 11 elementary and middle schools, Houston, TX, NASA
Environmental control
VCD, Vapor Compression Distillation Flight Experiment, NASA Johnson Space Center, Houston, TX, NASA
COM2PLEX, Combined Two-Phase Loop Experiment, Reinhard Schlitt, OHB GmBH, Bremen, Germany, ESA

Satellite sensor calibration
RAMBO, Ram Burn Observation, USAF Space and Missile Center, Los Angeles, CA, U.S. Air Force