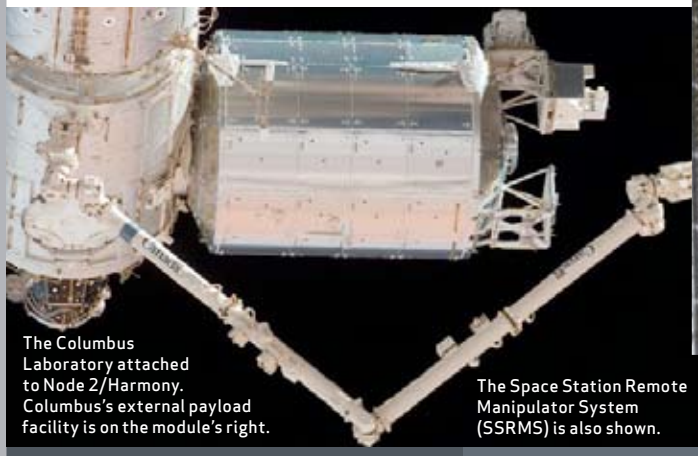
Columbus Research Facilities



The Columbus Laboratory attached to Node 2/Harmony. Columbus's external payload facility is on the module's right.

The Space Station Remote Manipulator System (SSRMS) is also shown.

Columbus Overhead Payload rack.

ESA Astronaut Paolo A. Nespoli, posing in the Columbus module with a model of the Columbus floating in front of him.

Biolab will support biological experiments on micro-organisms, cells, tissue cultures, small plants and small invertebrates.

Biolab Components

- -Incubator
- -Experiment Container
- -Life Support System
- -Automated Temperature Controlled Stowage
- -Ambient Stowage
- -Analytical instruments: microscope and spectrophotometer
- -Bioglovebox
- -Automated Temperature
- -Temperature control unit

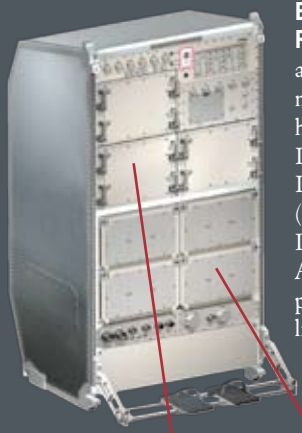
STS-122 European Space Agency astronaut Hans Schlegel works on the Biological Experiment Laboratory (BioLab) Rack as part of the outfitting of the European Laboratory/Columbus module.

European Physiology Modules (EPM) rack will provide a facility for human physiology research. EPM provides a Multi-electrode Electroencephalogram Mapping Module.

EPM research areas:

- -Neuroscience
- -Cardiovascular & respiratory systems
- -Bone & muscle physiology
- -Endocrinology & metabolism

Astronaut Garrett Reisman, Expedition 16 flight engineer, works on EXPRESS 3 rack installation in the Columbus Laboratory module.



European Drawer Rack (EDR) accommodates experiment modules in standard housings; either International Subrack Interface Standard (ISIS) drawers or ISS Lockers. Accommodates: 3 ISIS payload volume 216 litres or 4 standard lockers payload volume of 228 litres.

International Subrack Interface Standard (ISIS) drawer

ISS Lockers

Fluid Science Laboratory (FSL) will be used to study the dynamics of fluids in the absence of gravitational forces. The phenomena is normally masked by gravity driven convection, sedimentation, stratification and fluid static pressure. Effects to be studied include diffusion-controlled heat and mass transfer in crystallization processes, interfacial mass exchange, simulation of geophysical fluid flows, emulsion stability and others.