

Mester John C.

Position: W.W. Hansen Experimental Physics Laboratory
Stanford University, Stanford

EDUCATION

Ph.D. in Physics, Harvard University 1992
Dissertation: *Scattering of Atomic Hydrogen and Helium at Low Temperature*
M.A. in Physics, Harvard University 1985
B.S. in Physics and Mathematics, with highest honors, Johns Hopkins University 1983

PROFESIONAL AFFILIATIONS

Vice Chair, Scientific Committee, ICRANet 2006 – present
Vice Chair, COSPAR Commission H: Fundamental Physics in Space 2004 – present
American Physical Society
Phi Beta Kappa

EXPERIENCE

Hansen Experimental Physics Laboratory, Stanford University 1992 – present

Lecturer: 2009 – present
Stanford Aero/Astro Department

- Lead graduate course on Space Systems Engineering and Design

Director: 2006 – present

Precision Spacecraft Control for Space Science Missions.

- Founded program and secured external funding
- Lead collaboration among American, German, and Italian research organizations
- Design and validate precision attitude and translation control systems for future scientific satellite missions
- Develop hardware-in-the-loop drag free control spacecraft simulations with integrated GPS, optical, and inertial sensors
- Advise 3 visiting research students and one Ph.D. candidate at Stanford

Program Manager and Co-Investigator: 1999 – present

The Satellite Test of the Equivalence Principle (STEP) Program – a NASA and European sponsored technology development collaboration.

- Manage the lead team of scientists and engineers at Stanford
- Direct international STEP collaboration among 12 institutions in Europe
- Lead Small Explorer proposal team of 14 professionals at Stanford, NASA Marshall Spaceflight Center, Teledyne Brown Engineering, Lockheed Martin, Surrey Satellite Ltd. and EADS
- Develop systems requirements and design requirements traceability
- Represent STEP program at NASA and Congressional staff meetings

- Lead flight hardware and payload engineering unit manufacture and test at Stanford University laboratories and facilities
- Advise Stanford students and Ph.D. candidates

EXPERIENCE continued

Hansen Experimental Physics Laboratory, Stanford University

Senior Research Scientist:

1992 – 2005

The Gravity Probe B Relativity Mission (GP-B) – a \$750 million NASA sponsored, space science mission, successfully launched April 20, 2004.

- Conducted research on cryogenic and magnetic systems for space applications
- Established engineering teams at Stanford and contractor Lockheed Martin to ensure key requirements compliance - Achieved the most stringent magnetic requirements of any NASA flight program
- Designed and built specialized test apparatus including a large scale SQUID-based cryogenic magnetic screening device and a picoTesla absolute field magnetometer
- Led Gyro Spin-up Gas Management Assembly system development, test, and integration
- Payload Integrated Product Team Lead responsible for payload assembly, test and integration with spacecraft
- Mission Director (one of five) from launch through the completion of science mission – directed mission operations/spacecraft communications team of 22 people

Goettel & Associates, Inc. Davis, CA 95616

1997 – present

Consultant:

- Conduct benefit-cost analyses and review hazard mitigation programs for FEMA, State agencies, and private sector clients
- Develop mathematical models for flood and earthquake hazard scenarios

Institut Henri Poincaré, UMPC Université de Paris VI, Paris, France

2006

Visiting Professor:

- Developed and taught graduate course on experimental tests of General Relativity
- Invited Speaker, Poincaré Seminar public lecture series