

Educational Product

Educators & Students

Grades 5-12

ET-2004-10-122-ARC

Educational Topic

Human Factors Researcher

Related Job Titles:

Research Psychologist, Research Associate, Human Performance Researcher, Human Physiology Researcher

Job Description:

This type of work within aviation ranges from studying pilots in the cockpit as they relate to the cockpit controls all the way to studying sleep physiology in order to improve safety for pilots during flight operations of long duration. A Human Factors Researcher uses the scientific method to develop a hypothesis and set up an experiment to test the theory. After lengthy and repeated trials, the results would be presented and enacted in a trial of the new methodology being suggested by the study. The researcher would have to be able to develop and perform scientifically-based experiments and document the results. Such studies might occur over a long period of time, other studies might cover a few weeks or days with others lasting no more than an hour. The researcher must be a keen observer with excellent note taking skills as well as fine writing skills with which to develop detailed reports.

Interests / Abilities:

- Do you like to take things apart and see how they work?
- Are you fascinated with the human body and how it works? Would you be interested to see how it operates especially in extreme or unusual situations?
- Would finding a better way to make a machine or assembly line work more efficiently be a fun challenge?
- Do you enjoy studying people and how they interact with machines?

Education / Training Needed:

To perform the lab work would require a bachelor's degree from an accredited college or university in the field(s) of Biology, Psychology or Physiology. To oversee some research projects would require a master's degree in a complimentary subject. To manage a research program would require a Ph. D. Depending upon what specialty you go into, a license might be required which would mean you have to take a licensing exam.

Suggested School Subjects / Courses:

- · Mathematics: Algebra and Statistics
- Psychology
- Sociology (the study of human relationships)
- Physiology (the study of body systems and their interactions)
- Kinesiology (the study of human movement and mechanics)
- Biology

Areas of expertise:

- Behavioral Sciences, Psychology, Clinical Psychology, Physiological Psychology
- · Biology, Biophysics, Physiology, Kinesiology
- Human/system integration technology

Additional Resources:

- Aircraft Owners and Pilots Association http://www.aopa.org/
- Earth to Orbit: Engineering Design Challenges http://eto.nasa.gov/
- Fatigue Countermeasures Group http://human-factors.arc.nasa.gov/zteam
- Flight Safety Foundation http://www.flightsafety.org/
- Graduate Student Researchers Program http://spacelink.nasa.gov/Instructional.Materials/NASA.Educa tional.Products/Graduate.Student.Researchers.Program.Brochur e/.index.htmlt
- MATHCOUNTS Competition http://mathcounts.org/
- Minority University Research and Education Programs http://mured.nasaprs.com/
- NASA Cooperative Education Program for college students http://spacelink.nasa.gov/Educational.Services/ NASA.Education.Programs/Student.Support/NASA.Cooperative .Education.Program/.index.html
- NASA Jobs http://nasajobs.nasa.gov/
- NASA SHARP Internship Program for highschoolers http://www.mtsibase.com/sharp/
- NASA Student Employment http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Student Involvement Program student contests http://www.nsip.net/index.cfm

What can I do right now?

- Visit a medicine and technology museum to see the advances made in medical research so far.
- Interview a psychologist and ask about psychology research.
- Participate in a chat or Web cast at NASA Quest that discusses human factors research. http://quest.nasa.gov
- Do a report in your psychology or sociology class on human factors research in aerospace labs.
- Work with your biology, psychology, or kinesiology teacher to devise a research project that follows all proper safety guidelines.
- · Volunteer to collect data for a research project.

- National Transportation Safety Board http://www.ntsb.gov/
- Revolutionary Vehicle Concepts and Systems student competition http://avst.larc.nasa.gov/competitions.html
- Tech-Interns.com http://www.tech-interns.com/

- Please take a moment to evaluate this product at:
- http://ehb2.gsfc.nasa.gov/edcats/educational_topic
- Your evaluation and suggestions are vital to continually improving NASA educational materials.
- Thank you.



http://quest.nasa.gov/people/index.html