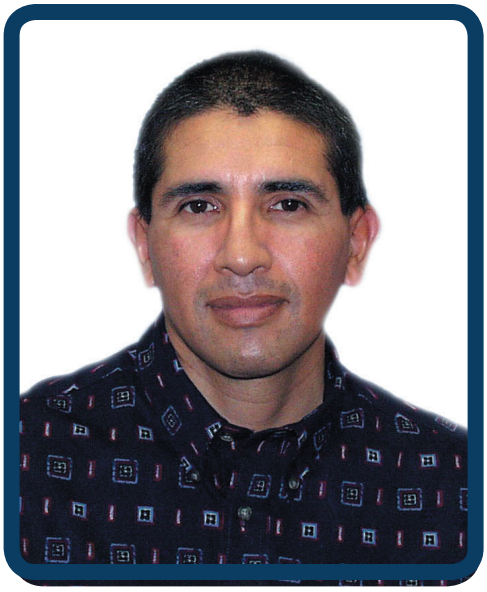
National Aeronautics and Space Administration

Aerospace Engineer



Dr. Donald R. Mendoza

Aerospace Engineer

NASA Ames Research Center

Hopes and dreams are what NASA is made of, and it is my privilege to be counted among the many explorers who keep it this way. However, with all exploration there is risk and it is my job to ensure these risks are minimized. I receive great satisfaction and pleasure in being able to be involved with many of NASA's programs through the Systems Management Office. In system management, we act as the wide-angle lenses for the program scientists, engineers and administrators by helping them maintain a global view of their work. This way, a program's risks are identified and managed so that its chances of success are maximized. It is a job that fosters balance and requires a person to have balance in many disciplines and therefore carries over into all aspects of your life. I believe it is a job that many people would enjoy because it allows you to grow in many ways.

Areas of expertise:

- Aerodynamics
- Heat transfer
- Risk management
- Systems management

How I first became interested in this profession:

As a young boy growing up in the San Joaquin Valley I was captivated by the hawks that flew over the grain fields and dreamt of the freedom flight must bring. By age 6, I began to read about flying and started building airplane and rocket models. Most of my models ended up crashing, but I learned a lot about flight through these early experiences. I also started to read about people in the aerospace industry, like test pilots and scientists (Chuck Yeager and Theodore von Karmen) and they became my role models.

What helped prepare me for this job:

I used the long, solitary hours of farmwork to think, daydream, plan, and visualize my future. I viewed everything as a challenge including school, athletics, and work, and set goals for myself. Striving for these goals allowed me to maintain my strengths and decrease my weaknesses. Using this philosophy, I worked toward balance and harmony in every aspect of life (I may not achieve these states, but my journey maintains the life of my dreams and brings me closer to them).

My role models or inspirations:

My parents encouraged and supported me in everything I did, but most importantly, they showed me how to value and respect knowledge, people, and the environment. I also used the example set forth by astronaut Michael Collins in his autobiography *Carrying the Fire*. I admired his self-assessment as a regular guy who, because of timing and location, had unique opportunities that he made the best of by becoming the first person to orbit the moon alone.

My education and training:

- B.S., Aeronautical Engineering, California Polytechnic State University, (Cal Poly)
- M.S. and Ph.D., Mechanical Engineering, University of California, Berkeley
- National Test Pilot School and numerous other professional training courses

My career path:

- Seven years as a flight test engineer with the United States Air Force
- Four years in graduate school
- Three years as an associate with the National Research Council
- Five years and counting as an aerospace engineer with NASA

What I like about my job:

Since my job is multi-disciplinary, it hardly ever gets boring, and I use many of the fundamental skills I learned in school (pencil, eraser and calculator-type skills). My work requires much study and the use of many resources: books, calculators, computers, and other people's expertise. My current job allows me to make significant and immediate contributions to NASA's mission.

What I don't like about my job:

I do not like it when resources are traded such that political gains are maximized while science and technology gains are diminished. However, when viewed globally, politics become another component of the system and such trade-offs become understandable and even necessary.

My advice to anyone interested in this occupation:

Strive for a balanced life and realize your potential with education and a commitment to be your best. Approach all things with an open mind and embrace the unknown as an opportunity to increase your education/understanding and reach your goals.

Additional Resources:

- American Institute of Biological Sciences
  http://www.aibs.org
- American Physiological Society
  http://www.faseb.org/aps
- American Society for Biochemistry and Molecular Biology
  http://www.biophysics.org/biophys/society/biohome.htm
- American Society for Microbiology
  http://www.asmusa.org
- Astrobiology Summer Academy
  http://academy.arc.nasa.gov/
- Biotechnology Industry Organization
  http://www.bio.org/welcome.html
- Earth to Orbit: Engineering Design Challenges
  http://eto.nasa.gov/
- Education Pays Calculator
  http://www.educationpays.org/calc.asp
- Graduate Student Researchers Program
  http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/.index.html
- 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 Office of Life and Microgravity Sciences and Applications
  http://www.hq.nasa.gov/office/olmsa/
- NASA SHARP Internship Program for high-schoolers
  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
- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.
  http://core.nasa.gov
- Revolutionary Vehicle Concepts and Systems student competition
  http://avst.larc.nasa.gov/competitions.html
- Student's Guide to Astrobiology
  http://www.astrobiology.com/student.html
- Tech-Interns.com
  http://www.tech-interns.com/

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Thank you.