



From Engineering to Aerospace Medicine

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Who Am I?



❖ Rice University – Class of 2008

- Chemical & Biomolecular Engineering
- Hanszen College

❖ University of Texas Medical Branch (UTMB)

- Medical School – Class of 2012
- Aerospace Medicine/Internal Medicine Residency – Class of 2016

❖ NASA Johnson Space Center

- Flight Surgeon



Why Did I Decide on Medicine?



- ❖ Enjoyed engineering in school
- ❖ During summer internship, realized that I didn't enjoy engineering in practice
- ❖ Always fascinated by medicine
 - Mom was a nurse
 - Roommates were pre-med
- ❖ But medical training is a long road
- ❖ Decided that the extra time spent in training was a solid investment if I enjoyed the job for the rest of my life



Careers in Medicine for Engineers



❖ Positives that made it a better choice than engineering for me

- Care for others
- Social interaction
- Engineering problem-solving skills are very useful
- Medical school is easy compared to engineering problem sets!

❖ Negatives

- Human body is not as predictable as inorganic things
- Long training pathway (your engineering classmates will be earning money while you're taking loans)
- Work hours may be longer than typical engineering jobs



How is Aerospace Medicine Different?



- ❖ Engineering knowledge and communication skills can be very helpful
- ❖ Less clinical care
- ❖ Strong focus on prevention
- ❖ Job certification exams & occupational medicine
- ❖ Operational medical support
- ❖ Non-clinical activities
 - Astronaut selection
 - Centrifuge training
 - Health Stabilization Program (pre-launch quarantine)
 - Medical requirements for new space vehicle design (e.g. Artemis missions to the moon)
 - Mission Control
 - Neutral Buoyance Laboratory (NBL)
 - T-38



NASA Flight Surgeon Duties



Launch at Kennedy Space Center

SpaceX Demo-2





Launch at Kennedy Space Center

SpaceX Demo-2





Launch at Kennedy Space Center

SpaceX Crew-8





Launch at Kennedy Space Center

SpaceX Demo-2





Mission Control

Soyuz 55S Launch





Mission Control

Soyuz 55S Launch



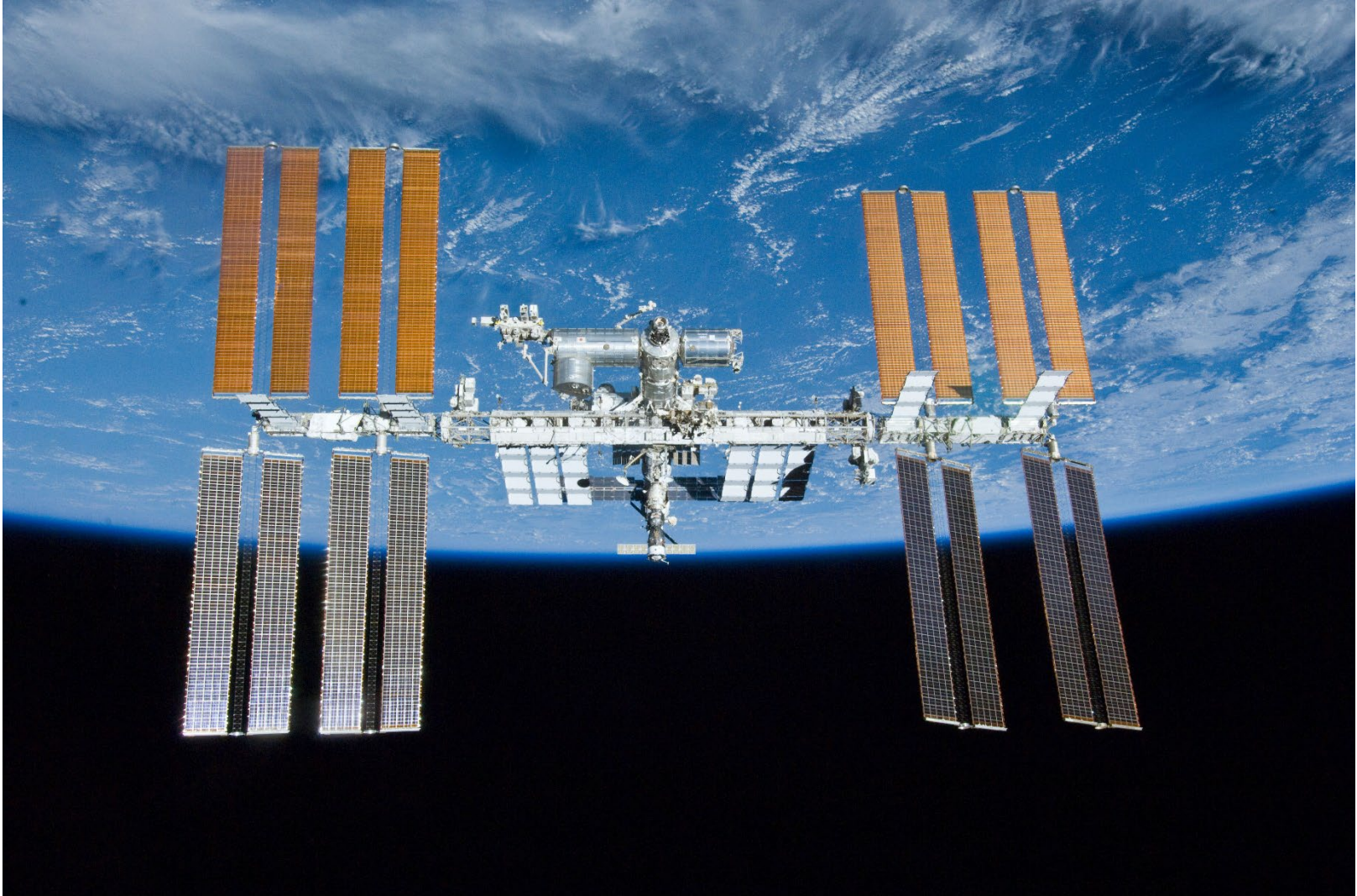


Mission Control





International Space Station



S132E012208



International Space Station

SpaceX Crew-8





Landing in United States

SpaceX Demo-2





Landing in United States

SpaceX Crew-8





Landing in United States

SpaceX Crew-8





Landing in United States

SpaceX Crew-8





Landing in United States

SpaceX Crew-8





Landing in United States

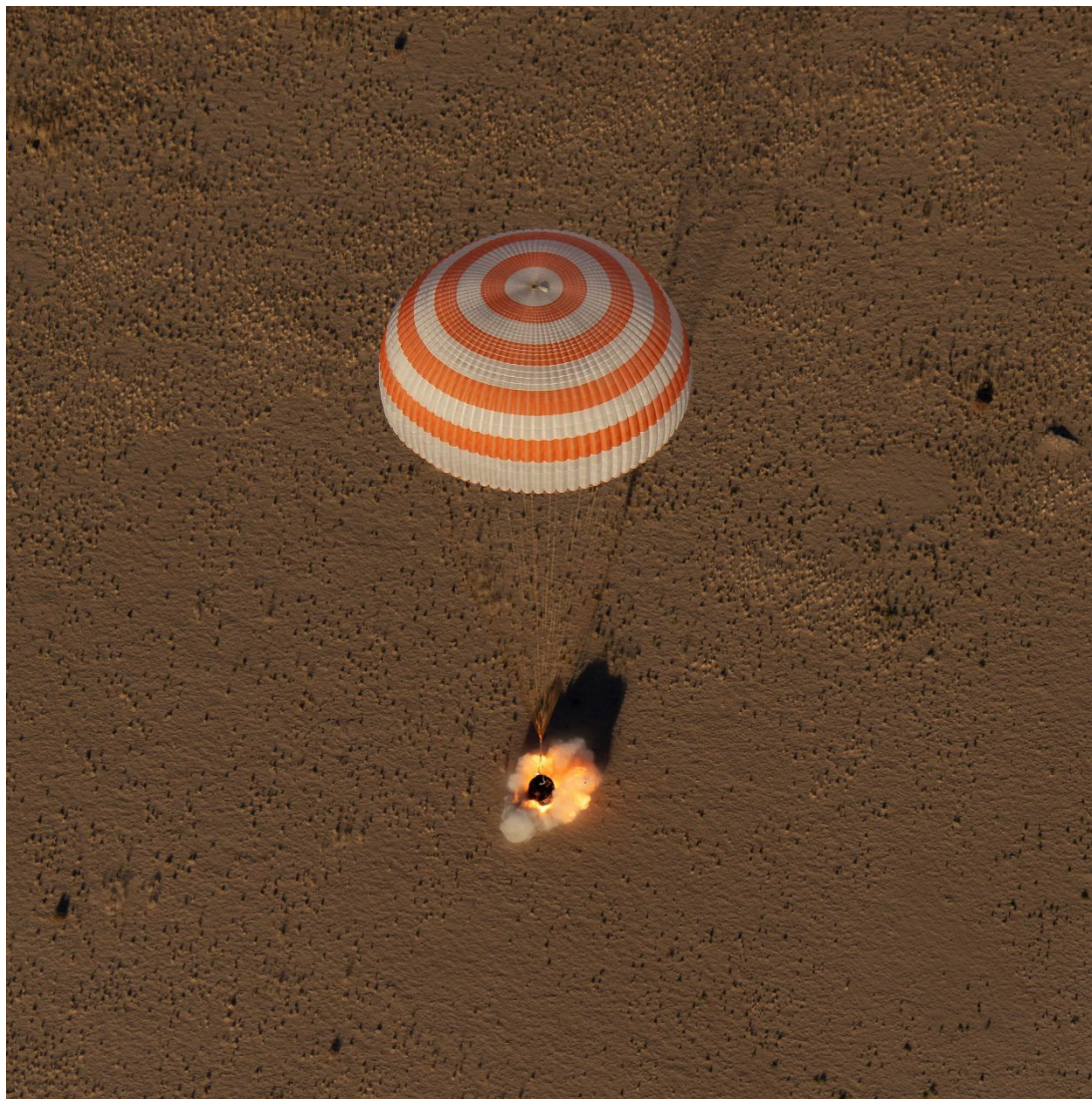
SpaceX Crew-8





Landing in Kazakhstan

Soyuz 54S/MS-08





Landing in Kazakhstan

Kate Rubins on Soyuz 47S/MS-01





Centrifuge Training

Wright-Patterson Air Force Base





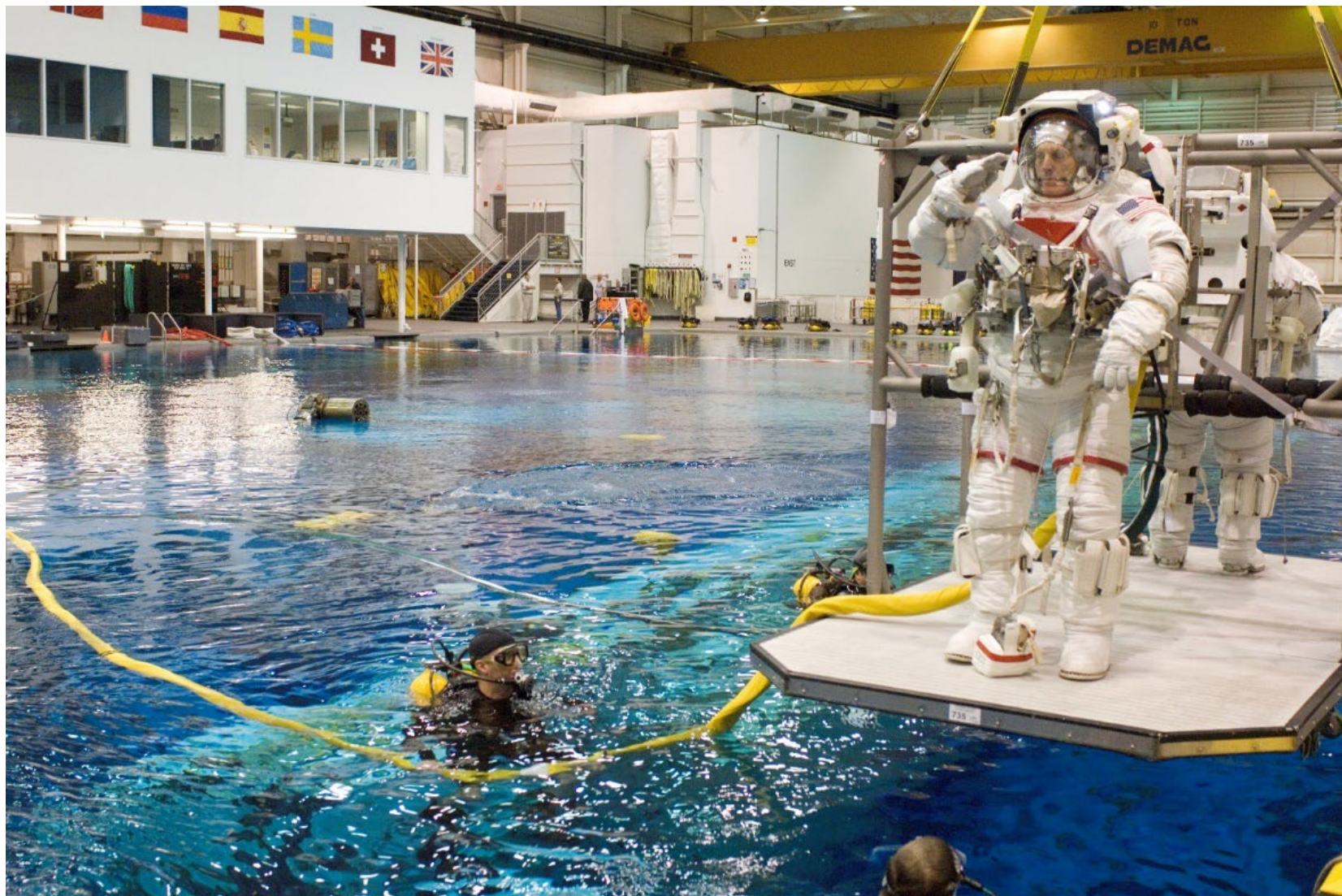
Centrifuge Training

Wright-Patterson Air Force Base





Neutral Buoyancy Lab





Neutral Buoyancy Lab

Water Survival Training





International Space Station Mock-Ups





International Space Station Mock-Ups





T-38





Reduced Gravity Training

NASA "Vomit Comet"





Flight Surgeon Training



Antarctica

Amundsen–Scott South Pole Station





Antarctica

Amundsen–Scott South Pole Station





SpaceX





US Air Force





US Air Force





Questions?
