

IRVINE02 organization and operations plan

1. The Irvine CubeSat STEM Program (ICSP) maintains a mutually supportive and long-term relationship with the 18th Space Control Squadron (18SCS). Our procedure to submit a planned maneuver starts with an email from a teacher to Space-Track.org, containing a summary of what is planned, any preliminary orbital simulation results, and the timing for the maneuver. The maneuver is then executed, followed up by a comparison with the 18SPC to verify the outcome afterwards. Their point of contact (POC) for this communication is listed in #3. Our points of contact are:

POC: Archana Jain
Email: archanajain@iusd.org
Phone: (949) 936-7067
Address: Irvine High School
4321 Walnut Avenue, Irvine, CA 92604

Backup: Jennifer Blackie
Email: jennifer.blackie@iusd.org
Phone: (949) 936-7952
Address: Woodbridge High School
2 Meadowbrook, Irvine, CA 92614

In the event that a second/backup adult is needed, we let JSpOC know ahead of that planned absence. For example, when Ms. Blackie was on extended travel during the Summer, Dr. Brent Freeze substituted for her. The ICSP has at least two adult POCs listed in the Space-Track contacts database, which the 18SPC maintains at all times.

2. The adult responsible for radio operations is the teacher in charge of Team Communications:
POC: Jennifer Blackie
Email: jennifer.blackie@iusd.org
Phone: (949) 936-7952
Address: Woodbridge High School
2 Meadowbrook, Irvine, CA 92614

She coordinates radio communication remotely via the CalPoly ground station, operated by Prof. John Bellardo's team in San Luis Obispo, California. Their POC's are on file with the FCC.

3. Our point of contact for JSpOC reports to the 18th Space Control Squadron, as those two organizations work together "hand in hand" from the same location. She can be reached at:

Cynthia Wilson
SSA Sharing Coordinator
18th Space Control Squadron

Vandenberg Air Force Base, California
Phone: (805) 605-5219
Email: cynthia.wilson.8@us.af.mil
jspoc.ssasharing@us.af.mil

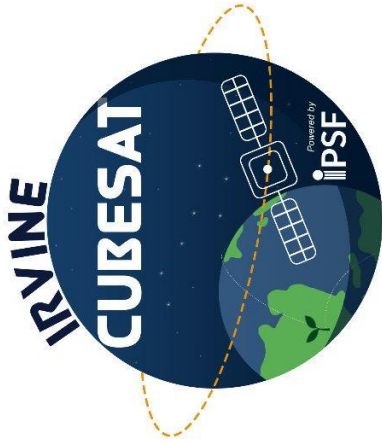
4. The attached organizational chart shows which teachers and adults advise the ICSP, in particular operations, along with their mentoring organizations. The credentials of the main and backup contact persons for 18SPS/JSpOC via Space-Track.org are summarized here:

Archana Jain received her Bachelor of Science in Aerospace Engineering from the University of Maryland in College Park, Maryland and subsequent credentials in Mathematics from California State University in Fullerton, California. Before becoming a teacher at Irvine High School, her previous career was as a Systems and Orbital Dynamics Engineer at Rockwell International's Space Systems Division in Downey, California. She worked on a number of programs including the Space Shuttle, the Manned Lunar Mars Exploration Program, and the Brilliant Eyes Program (for defense satellites). Prior to that she worked at the Naval Surface Warfare Center in White Oak, Maryland, as an Aerospace Engineer in the Flight Mechanics Group of the Reentry Systems Branch. She has lead Team Propulsion at Irvine High School since the inception of the ICSP in 2015. Accion Systems began mentoring her in their thruster products in 2016. Ms. Jain is the primary point of contact for JSpOC via spacetrack.

Jennifer Blackie received her Bachelor of Science in Chemistry and subsequent teaching credentials from the University of California in Irvine. She has since taught subjects at Woodbridge High School in chemistry and physics, as well as been an advisor to the robotics team for the First Tech Challenge and Mini Urban Challenge competitions. She maintains an amateur radio license and encourages many of her students to take up ham radio. She has managed Team Communications at Woodbridge High School since the inception of the ICSP in 2015, including all student field trips to Cal Poly San Luis Obispo for satcomm radio tests for IRVINE01 and IRVINE02. They began mentoring her in their UHF radio and protocols in 2016. Ms. Blackie is the secondary point of contact for JSpOC via spacetrack.

Each team has approximately 25 students, split into two subgroups that are assigned tasks by their teacher. This is represented by the light blue lowest tier in the ICSP Org Chart.

5. David Tovani will email responses to the questions regarding the thruster.



ICSP Steering Committee
 Neda Eaton (Irvine Public Schools Foundation CEO)
 Kain Sosa (Co-Founder & Program Director)
 Dr. Brent Freeze (Co-Founder & Technical Director)
 Keith Tuominen (Irvine School District, Director Secondary Education)
 Grant Litfin (Tustin School District, Assistant Superintendent)

Ground Station Operations
 Cal Poly San Luis Obispo
 Prof. John Bellardo (Lead)

Spacetrack Contact 1
Team Propulsion
 Irvine High School
 Archana Jain (Teacher)
 Accion Systems (Mentor)

Spacetrack Contact 2
Team Communications
 Woodbridge High School
 Jennifer Blackie (Teacher)
 Cal Poly SLO (Mentor)

Team Prime
 University High School
 Matthew Bell (Teacher)
 SpaceFlight (Mentor)

Project Mgt. Group
 NASA Proposal
 NOAA Permit

Payload Group
 Science Instrument
 Launch & ConOps

Simulation Group
 Flight Plans

Thruster & Torquer Groups

Laser Group
 Optical Link
 Budget

Radio Group
 FCC & IARU
 Permits

Team Power
 Northwood High School
 Ibeth Ortiz Jaime (Teacher)
 EXA (Mentor)

Team Avionics
 Beckman High School, in Tustin District
 Siu-Ling & Siu-Kong Sit (Teachers)
 Tyvak Nanosystems (Mentor)

Team BioTech
 Portola High School, *not on IRVINE02*
 Courtney Donovan (Teacher)
 Cal State Long Beach (Mentor)

Battery Group
 Power Budget &
 Sets End-of-Flight

Solar Array Group
 Solar Radiation &
 Thermal Analysis

Electronics Group
 Computer System &
 Navigation Sensors

Software Group
 Guidance &
 Control

Bio Group
 Microbial
 Life Forms

Tech Group
 Life Support
 Systems