



# Reflections from Orbit

Alumni Newsletter for the University of North Dakota's Department of Space Studies

March 2016

Salutations Alumni!

You will find our 3rd newsletter to be very short. I promise the next will be much more robust in content. Several major changes are coming in the near future including an across the board budget decrease at UND, as well as the Lunar & Planetary Science Conference.

The 47th Lunar and Planetary Science Conference will be held at The Woodlands Waterway Marriott Hotel and Convention Center, The Woodlands, Texas, March 21–25, 2016. Faculty members Dr. Hardersen and myself will be in attendance. I will have a poster presentation Thursday evening, March 24, 2016 in Poster Session II: Asteroid Spectroscopy and Classification: A Study of Lumping and Splitting Behavior in Human Beings @ 6:00 p.m. in the Town Center Exhibit Area. Dr. Gaffey and Dr. Hardersen are co-authors. Also, Friday March 25, 2016 @ 8:30 a.m., I am chairing the Asteroids, NEOs, Meteors, and Other Space Oddities session in Waterway Ballroom 5. I welcome you all to come meet me in person if you are attending either of the sessions. In addition, I have put together two separate dining options for alumni to meet, eat, and reconnect. Monday March 21, 2016 alumni will meet at T-bone Tom's Steakhouse (707 TX-146, Kemah, TX 77565) @6pm for our first no-host dinner together, which features Southern food such as steak, BBQ, & burgers. Thursday March 24, 2016 we will gather for a no-host lunch at Américas (21 Waterway Avenue Ste. 130, The Woodlands, TX) @ noon. Américas features dishes that combine Latin ingredients with European culinary techniques. I eat there each year and am always satisfied. This choice is convenient for alumni who do not have transportation as it is a few hundred feet from the convention center. It is also an alternate option for those who cannot make it to the Monday evening dinner. However, you are welcome to attend both. Please contact me no later than March 11th if you plan on attending the lunch, dinner, or both so that I can make appropriate reservations.

Currently, due to the economic situation in North Dakota, UND has been mandated to make a 4.05% across the board budget cut. We do not know the particulars as of yet; however, the university's faculty and administration are resolute in their determination to continue to provide the same exemplary services to our students without raising tuition.

Although we strive for the best, sometimes economics decides otherwise at research institutions. For example, throughout the last decade our faculty have invested great time and effort to find funds for equipment and to get the Space Studies Observatory up and functional for student research and courses. However, since Fall 2015, the Space Studies Observatory has been in a dormant state with little activity. We continue to seek funding avenues that will allow full operations of the facility, which will include a full-time observatory manager who will work with the departmental faculty and students to promote the conduct of research and education projects. Internet Observatory 1 and 3 are operational and Internet Observatory 2 is in the middle of renovations.

Moving like a turtle, I am still in the process of creating alumni events to better unite our past graduates including a yearly career panel hosted at UND Space Studies, Career Fair, and Graduate Seminar. Alumni have been separated by zip code and I will be contacting several of you and inviting you to serve as "regional captains" to help in the coordination of alumni events, and will further refine this role in the coming months. If you are interested in becoming a regional captain, please contact me. Just an FYI...Space Studies bowling leagues are on the agenda.

We still have lapel pins, and for those of you who have not requested a Space Studies lapel pin should do so. They are free, which means 0USD. Please contact Pam Nielsen to get your pin [pnielsen@aero.und.edu](mailto:pnielsen@aero.und.edu).

In this month's Alumni Spotlight, Manish Khatri is featured. I encourage you to read his story and learn more about him and his space endeavors. I need two volunteers to showcase for our next issue. Please send me a brief email if you are willing to participate.

Respectfully,



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# ALUMNI SPOTLIGHT



JSC Mission Control tradition bestows the honor of hanging the mission patch to the flight controller that went above and beyond to ensure the mission was a success. Here you see Manish just after he proudly hung the mission patch.

## Manish Khatri

Manish Khatri received his Master of Science in Space Studies in 2015. Manish is employed at Johnson Space Center for a NASA contractor. His official title is “Engineer II”, but in all actuality he is a certified Integration and Systems Engineer (ISE) Flight Controller and Triton Instructor within the Flight Operations Directorate (FOD) responsible for pre-flight and real-time systems integration between ISS and visiting vehicles (Cargo Dragon, Cygnus, HTV, Crewed Dragon, and CST-100). He is currently leading the work required to bring CST100 to ISS.

As a Space Studies student, Manish’s concentration was long duration human space flight and vehicle design – basically, what do astronauts need their vehicle to be capable of, and why should it have those capabilities? Manish began his Master’s program while working at NASA. The combination of the coursework and online opportunity allowed him to work towards completing his Master’s degree while simultaneously working. “It was really the flexibility and the applicability to my job that attracted me to joining UND.”

I asked Manish to put himself in a hiring position role and explain what he would look for when hiring new graduates from Space Studies. His response, “As an employer, I would absolutely want to hire someone from the



SpaceX-3 flight control team. Manish was the lead systems controller for the SpaceX-3 mission and was recognized both at JSC and amongst the flight controller team for his outstanding efforts.

UND Space Studies program. The most obvious strengths in the Space Studies program are to look at the space industry and discuss current events, benefits to space exploration and to provide students a general overview of the industry as a whole. There are absolutely things that I was able to pick up in my coursework that helped in general discussions at work, and also helped expand my knowledge of the space industry beyond the small sliver that I am a part of on a day to day basis. I feel that my degree has definitely expanded my knowledge of the field in areas that I am not involved in on a day to day basis.”

I asked Manish, “If you had it to do all over again, what would you do differently? Are there opportunities or services Space Studies offered and you wish you had taken advantage of but didn’t?” Manish replied, “Yes and no! One of the questions I asked Bev during graduation week was if I would be able to audit classes in the future. Unfortunately, it would have cost additional out of pocket money, so I was unable to. I would have enjoyed taking Dr. Fevig’s SMAD class, or Dr. Gaffey’s class on Mars and Life in the Solar System. There were definitely more classes I was interested in than classes I could take. That being said, I do wish there were more classes on space craft design and operations for existing space craft, such as ISS. Across the globe, space agencies contribute to the on-going operations of the ISS. Recently, the ISS is playing a major role in the commercial space industry by working with companies such as SpaceX, Sierra Nevada, and Orbital-ATK. The only real exposure on the ISS was provided in Dr. Whalen’s “History of the Space Age”, but even then only the history of the ISS’s current design was discussed without much context. In a number of classes, there were many students that asked questions regarding ISS operations, crew training, systems design, etc. I think a class on all aspects of the ISS would be a great addition to the otherwise very comprehensive course listings UND offers.”



Manish Khatri received the 2014 Individual Achievement Award for the SpaceX-3 mission. He served as the NASA lead for the mission.

In closing, Manish has a few tidbits of advice that he would like to share with Capstone graduates. “For future Capstone students – try and complete your final report and get a good idea on your final presentation before even arriving on campus. This is easier said than done, but it will afford you the opportunity to hang out with your fellow students and give you the chance to explore Grand Forks the week that you are here. After working with my Capstone team for a year, it was an awesome experience to hang out with them outside of working on Capstone.”

Thank you Manish 😊