

## **Hyperloop – Sustainable Transportation of the Future**

By Celene Lovato

How would you like to live in Colorado Springs, eat dinner in Denver, and be back to your house in time to get a good night's sleep, all while not driving?

Impossible? Not for the HyperFalco team!

In January of 2016, a team composed of UCCS and US Air Force Academy (AFA) students took part in the SpaceX Hyperloop design contest (<http://www.spacex.com/hyperloop>), working together to get a jump on the promising technology. Radu Cascaval, associate professor in the Math Department, served as one of the faculty advisors for the team. "Hyperloop is a proposed new form of transportation...consisting of pods traveling through low-pressure tubes at high speeds," explains Cascaval. "This concept, if proven viable, will provide fast reliable transportation with speeds up to 700 miles/hour (transonic speeds), in a weatherproof and earthquake-proof environment."

According to Cascaval, the low-pressure environment of the Hyperloop system will allow for travel at high speeds while still consuming a less energy than traditional forms of transportation. "It would allow people to live in one city and work in another without impacting the environment in the way it is doing now," he says. Beyond just shuttling people to and from work, Cascaval mentions many other upsides of the technology, such as solving traffic congestion and proving an efficient means of shipping products and freight long distances.

"Sustainable technology is being slowly recognized as the only solution to assuring that future generations will benefit from the same quality of life as we do nowadays," says Cascaval. "Engineering departments have embraced the challenge, but the need for more research, development and educating the future workforce is still very acute." The UCCS and AFA design team is comprised of students in the Mathematics, Physics, and Engineering departments. The two schools plan to continue working together to further explore the possibilities of the technology.

Widespread use of this technology may seem far off, but Cascaval thinks the technology could become viable much sooner. "I estimate about 5 years. Smaller distances and lower speeds can be achieved sooner, 3 years, assuming the funding for pursuing the research is made available soon." For now, he's hopeful that the team here will be able to help contribute to the technology, "In the longer term, we hope to develop the technology further, to make this mode of transportation safe for humans, for short and medium distances. The first application could be campus transportation between UCCS and USAFA!"