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Program Brings Space Research Down to Earth

By Naomi Engelman, Space Alliance Technology Outreach Program Project Engineer

During his years in the hotel and hospitality business, Nate Mandalia of Alamogordo struggled with a problem experienced by many people who have to dress professionally for work: how to keep the hem of his pants from bunching up on his shoe or dragging on the ground. Mandalia came up with a solution – an invention he calls the “hemlock.”

With assistance and advice from the Space Alliance Technology Outreach Program (SATOP), Mandalia applied for a patent for his shoe accessory and completed prototypes. His next step is to proceed from prototype design to mass manufacturing.

“I’m not an engineer,” Mandalia said. Turning an invention into a marketable product “is more difficult when you don’t have experience doing (it).”

Brain meld

SATOP is a nationwide cooperative program that provides up to 40 hours of free technical assistance to small businesses or entrepreneurs wrestling with engineering challenges that are impeding their success. SATOP uses technical expertise derived from the U.S. space program to address a variety of problems faced by existing or startup entities.

SATOP assistance is provided by its Alliance Partner Network which is made up of more than 45 companies, universities, colleges, national laboratories and NASA centers (Johnson Space Center in Texas, Kennedy Space Center in Florida and White Sands Test Facility in New Mexico). Program organizers link professionals in these organizations with eligible members of the small-business community.

While many businesses approved to participate in SATOP use far less than the maximum allowable hours of free technical assistance, Mandalia’s challenges required the full 40 hours, most of which were used to refine the design and engineer his product. The program matched him with Yu-Ping Tang, an engineer at New Mexico State University’s Manufacturing Technology and Engineering Center.

Help on many levels

While Mandalia sought help with a product design suitable for mass manufacturing, SATOP's cooperating professionals can assist a small business or entrepreneur with any type of engineering conundrum — from questions about adhesives and acoustics to those concerning materials and fluid dynamics and everything in between. SATOP has helped companies with machine design, process engineering, material selection and just about any other issue imaginable.

A company does not have to be technology-based to receive assistance, as Mandalia's example demonstrates. The program has processed more than 3,000 requests since it began in 2001, and more than 2,500 resolutions have been provided to businesses – usually within 90 days of the start of collaboration.

The program's success has created intense demand for assistance, though SATOP's resources are limited. Business owners interested in applying for assistance can learn more about SATOP at the program's website: www.spacetechnolutions.com. Before submitting an online request for technical assistance, New Mexico entrepreneurs are urged to contact the state's SATOP Center at 2209 Miguel Chavez Road, Suite C, Santa Fe, N.M. 87505 (phone: 505-428-7762). They should be prepared to give their company's name, address, phone number and a brief description of the background, context and description of the technical problem.

Finance New Mexico is an initiative of the New Mexico Small Business Investment Corporation (NMSBIC) and its partners to assist individuals and businesses in obtaining skills and funding-resources for their business or idea. To learn more, go to www.FinanceNewMexico.org.

