



Working to keep us safe: Sara Brambilla, Postdoc creates threat reduction tools

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Sara Brambilla solves real world threats on a local and global scale

Sara Brambilla, a postdoc, experiences a foreign culture, while working with the Systems Engineering and Integration Group. Her role is to develop models and software to simulate the dispersion of chemical and biological agents in the atmosphere after incidents such as a tank truck spilling gasoline or a terrorist attack. She helps create resources that respond to weapons of mass destruction and natural threats on local and global scales.

Sponsors such as the Department of Homeland Security (DHS) and the Defense Threat Reduction Agency (DTRA) use Brambilla's models for real world applications. Brambilla and her team are currently implementing new software for wind patterns and gas dispersion in mountain-valley and urban environments to assist risk assessment studies for chemical releases in cities. She stated, "All the things I work on here get used, not written about and then forgotten. It gives you a sense of purpose."

Another example of her work was used to help develop the new protocol to run the Bioagent Event Reconstruction Tool (BERT) that estimates the location(s) of a biological hazardous release within or in the surroundings of a city. The BERT team is on call 24/7 to help cities.

Brambilla first came to Los Alamos as a visiting student during her PhD program at the Politecnico di Milano, Italy, which required an internship abroad. She became interested in the field of homeland security saying, "It was love at first sight. I had good mentors and enjoyed working here." She graduated with her PhD in Chemical Engineering and returned to her group as a postdoc.

In order to meet people in Los Alamos, Brambilla attends events sponsored by the Student Association, a student outreach program that provides tools and resources for a well-rounded and stimulating internship experience. She says "I didn't know anybody when I first moved here and in a couple weeks I had a handful of friends."

Brambilla is exploring a new part of the country, being from Lecco, a town north of Milan, Italy, she had never experienced living in a small town. She believes, "Los Alamos has a strong sense of community. There are very nice people here who actually care. It's very comforting as a visitor."

In her spare time, she enjoys hiking and running. Brambilla participates in a small running group that consists of other colleagues and students. Her favorite experience in New Mexico was going moonlight snowshoeing at the Valle Caldera in the Jemez Mountains. She states, “ That was the most amazing thing I have done; it’s really beautiful! I was amazed that you didn’t need anything to see at night because the moon was so bright.”

Brambilla gains not only career building skills but also an enriching personal experience. Her career goals are to remain working at the Lab as a technical staff member, expressing, “ It’s a great place to be. You can collaborate with people happy to share their expertise.”

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