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Pet Project: Elizabeth Crowe '15 Brings “Benevolent Computing” to Smithtown Animal Shelter

Elizabeth Crowe '15, an Honors College student enrolled in Stony Brook University's Fast Track MBA program, has a pet project — literally. She is combining her lifelong love for animals and passion for technology to find a way to automate operations at the Smithtown Animal Shelter.

To help bring her idea to life, Elizabeth has teamed up with computer science major Matt Lagueras '15 and computer science lecturer Tony Scarlatos, who teaches a course called Benevolent Computing. Using software called Shelterware that was developed by Lagueras (with supervision from Scarlatos), the faculty-student team is helping the shelter to modernize its services and record-keeping by moving from an antiquated paper-based system to one that is digital and online. Elizabeth was already familiar with Scarlatos and Shelterware after taking the professor's HON113 mini-course, Computing for Good.



Elizabeth walks Zane, a 2-year-old Puggle at the Smithtown Animal Shelter. (John Griffin/Office of University Communications)

The shelter houses 120 to 150 ready-to-adopt animals at any given time. By combining custom web-based and mobile applications, Shelterware can help the staff better manage tasks, from gathering adoption and volunteer information to finding and identifying lost animals.

“We have developed an iPad application that allows volunteers to process incoming animals at the shelter by taking photographs of them, entering data and generating QR barcodes for quick identification, all of which are uploaded to a central database,” said Scarlatos. “This database will generate a catalog of pets for adoption, which can be accessed by potential adopters on the web who can then fill out application forms online.”

Shelter staff can also use smartphones to identify animals by scanning the Shelterware-generated QR codes that are attached to the prospective pets' collars. The app can then reference information about the animals in the online database.

In addition, the app can track lost or stray animals without a QR code by photographing them and uploading the image with a time and date stamp, along with the animals' GPS location to the database. People searching for a lost pet can then review a gallery of images online, query by date and see a pin on a Google map that shows the last known location of the lost animal.

Staff and volunteers at the shelter will participate in a field test of the Shelterware application later this fall. The usability study will examine the utility and ease of use of the software for a number of stakeholders, including potential pet adopters in the community.

But Elizabeth saw uses for the software outside the shelter environment that would benefit the Stony Brook community. A busy undergraduate (BS in psychology with a minor in accounting) with a 20-hour-per-week job in the Department of Psychiatry, Elizabeth is no stranger to stress. She had read about the use of “stress dogs” brought to college campuses across the country to alleviate student anxiety at certain times, such as during finals week. Elizabeth thought that Shelterware could instead help to bring students to the dogs. For example, the software could coordinate rideshares for volunteers and collaborate with the shelter online through a calendar application, which would make ridesharing and scheduling more convenient and efficient, thereby decreasing obstacles to participation.

It seemed like a win-win-win proposition for the students, shelter and animals, but then Elizabeth came up with more questions: What if the students, in



addition to walking and playing with the dogs at the shelter, could journal about their experiences? Shelterware could provide them with an opportunity to share their experiences with the community, potentially making participation more rewarding. Also, what if potential adopters could see those blogs when browsing the catalog of animals at the shelter? Would the additional information accelerate the adoption rate and help reduce unsuccessful adoptions?

Elizabeth decided to explore those questions in depth. She made "Dogs With Blogs" her Honors thesis research project and asked Scarlatos' wife, Lori, an associate professor in Technology and Society, to be her advisor.

The study will have a treatment group of dogs that have blogs and a control group that does not.

Adoption and retention data will be analyzed to assess the impact of the blogs on adoption rates and successful placements.

"This is my first research project in which I am the lead investigator. 'Dogs with Blogs' examines human behavior but from a unique perspective," Elizabeth said. "With the help of Matt, who has been the key to the technological side of the project, we're looking to see if dogs with a Facebook-like Internet presence are more likely to be adopted than those that lack one."

She added, "Currently, the dogs at the Smithtown Animal Shelter are posted to Petfinder. Potential adopters see nothing more than a cute face, breed, age and gender. I want to see if adopters get to see a personality ("likes to fetch," for example), and whether they are more likely to adopt a dog and less likely to return it," she said.

Shelterware was presented at the Stony Brook Undergraduate Research and Creative Activities (URECA) event in spring 2014 and will be the subject of a poster presentation at the Center of Excellence in Wireless and Information Technology conference in October — a prime example of the interdisciplinary undergraduate research that's taking place at Stony Brook, and using information technology to have a beneficial impact on the community.

Not bad for a pet project.

— Glenn Jochum; photos by John Griffin



From left: Elizabeth, Lori and Tony Scarlatos, and Matt Lagueras at the Smithtown Animal Shelter with Cammi, a neutered tortoiseshell cat. (John Griffin/Office of University Communications)