Other Selves

A (MICROBIAL) PORTRAIT OF RALEIGH

Brooklyn-based bio-artist Joana Ricou swabs for microbes on the Sir Walter Raleigh statue for her Portrait of Raleigh (the city).

by Carla Burgess, Special to the Museum

One thing's for certain about Joana Ricou: she isn't shy. Not everyone could ask strangers on the street to let her see what's in their belly buttons. On a day this fall, she approaches a student on the North Carolina State University campus who is holding a "Free Hugs" sign — an easy mark. She tells him she is an artist who investigates the microorganisms that live in belly buttons. He and a friend agree to participate, and she gives them each a cotton swab. They twirl the tips vigorously inside their navels. After that, she drops the swabs into separate plastic bags and is off down the street.

Ricou, a native of Portugal who lives in Brooklyn, is in town to prepare a new piece of art that coincides with the opening of the Museum's new featured exhibition — The Secret World Inside You. Her traditional method has been to put the samples, one for each participant, into a round petri dish with nutrient agar — food for the microbes to grow on. She swirls the swab to create a spiral shape, then lets the dishes sit for a few days until the microbes grow. She photographs the results, then enhances each image digitally by superimposing two colored circles that complement the natural colors of the microbes, which are typically white, yellow, orange or red, with subtle variations in between.

She never knows how the samples will turn out. Just as every belly button is different, so is each result. A person's microbiome — the assemblage of microorganisms found in and on the body — is thought to be as unique as a fingerprint. It is a part of us, yet apart from us. "The microbiome is not even human," says Ricou. Bacteria colonize every inch of our skin, and they are even busier on the inside. Your gut is home to about 99 percent of your microbiome.

Ricou became interested in the human microbiome at about the same time that a team led by NC State biologist Rob Dunn and Holly Menninger, Director of Public Science for NC State's College of Sciences, was beginning a citizen science project in which volunteers swabbed their belly buttons for science. In samples from 60 individuals, the scientists identified a total of 2,368 species of bacteria, most of them beneficial. On average, each belly button contained about 67 bacterial species. The microbes were consistent with bacteria typically found on the skin. The dominant bacteria in belly buttons were categorized as Staphylococci, Corynebacteria, Actinobacteria, Clostridiales and Bacilli.
Ricou joined the coalition to add an artistic component to the Belly Button Biodiversity Project. She created belly button "portraits," which she refers to as "other selves."

"I'm really interested in biology and any insights that relate to questions of identity," she says. "If you look at representations of self in art history, it tells a lot about who we think we are — we are these single human beings. The field of microbiology tells us that we are something else. We are actually this ecosystem, this multifaceted, dynamic bunch of things that are all changing and growing."

Just as scientists continually discover new things about the microbiome, Ricou's investigation of microbes so evolves. The new art she created to coincide with Secret World was a "group selfie" of Raleigh that contains microbes from 25 local belly buttons. It is on exhibit on the first floor of the Nature Research Center along with her gallery of belly button portraits. She also integrated some new techniques on a few experimental pieces not on display, adding debris gathered in Raleigh to some of the Petri dishes. These pieces of debris not only framed belly button microbes in the context of broader society, they also introduced their own microbes to the art. Besides collecting inanimate objects, she also swabbed the non-living — a downtown statue of Sir Walter Raleigh, the shelves of a popular supermarket and jackrabbits on the Pullen Park carousel, to name a few. Instead of round Petri dishes, she worked with square ones. She also introduced paint — oils, acrylics and watercolors — into some small pieces.

**INSPIRING PINES**

As a middle-schooler growing up in Lisbon, Ricou read comic books and loved drawing. She also adored science and spent a lot of time doodling in the margins of her biology textbooks. Across from the school was a pine forest that the class explored often. "It was the defining location, I think, from my childhood." Her passions never dwindled, so it seems appropriate she would discover her current path. Ricou came to the United States to study at Carnegie Mellon University, which offers a program that lets students earn a combined degree in the arts and sciences. These are students who are equally at home in the laboratory and the studio.

Though it's easy to view her work as fine art, it also has powerful elements of participatory art. When she works on belly button pieces, she must necessarily interact with people — drawing them into the world of microbes and their meaning, "I let them know what we're doing, why we're doing it, what we hope will happen. It's just a fun way of learning science."

Sometimes people end up in emotional places they didn't expect to go. She was once talking to a mother whose husband and three children were busy swabbing their belly buttons. The woman was being supportive but reticent. Ricou shared the fact that infants pick up unique microorganisms from their mothers as they move through the birth canal. "I chatted with her about how the microbiome of her children were really imprinted by her. That when they're born, the children receive this kind of physical blessing from the mother in the form of this bacteria. There's something really poetic about that." Afterward the woman warmed to the experiment, having her own portrait made. Ricou later received a gift — all five images combined into a family portrait.

At the other end of the spectrum, people can be a tad too extraverted. "I think by asking folks to lift up their shirts and stick a Q-tip in their belly button, it immediately jostles folks into this space of sharing," she says. "So people promptly start sharing lots of details about themselves and their personal hygiene — it's very funny, but it's not strictly necessary. People often worry about what's going to show up in the plates, that it's going to reveal something bad about themselves. But at the same time I think people want for lots of stuff to grow."

Ricou doesn't know where her art will go next. The driver is curiosity. "I read the news and lots of books, and some of these facts or little headlines get stuck in my head. It may take years before I can really wrap my head around it ... start thinking about the deeper questions behind it."