

There's a Destiny for Everything



written by
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For the Narragansett Native American Tribe, fish hold a central role in its heritage and diet. But possible contamination of its waters sent the tribe searching for solutions.

University of Rhode Island (URI) Assistant Professor of Nursing Marcella Thompson stepped into an untraditional role for a nurse as the Rhode Island Tribe grapples with possibly polluted fish at its Charlestown, R.I. reservation.

This summer, Thompson launched the Namas Project, which translates to "All Things Fish" in the Narragansett language. With Thompson at the helm and backed by a tribal council resolution, a team comprised of the tribe, URI, Brown University and Dartmouth College launched a five-year mission to study the issue and recommend a remediation plan. To fund the effort, the group received grants from the National Institutes of Health/National Institute for Environmental Health Sciences,

the Brown University Superfund Research Program, the U.S. Environmental Protection Agency (EPA) and URI.

The Namas Project team is using novel and multidisciplinary approaches in environmental health research to engage tribal members and build their capacity to fully participate in decision-making processes around this environmental issue.

"I am not a traditional nurse," Thompson says. "As an environmental health nurse scientist, I employ multidisciplinary methods to address very complex environmental health issues."

Her latest project is certainly complex. The EPA warned the Narragansett Tribe that fish in its waters might contain potentially harmful amounts of environmental contaminants, such as mercury. In 2012, Thompson was working with the tribal government and leading workshops with the tribal elders on planning for emergencies such as natural disasters. The tribal government asked her to help determine what to do

Marcella Thompson, Assistant Professor, Nursing (blue dress) with colleagues and members of the Narragansett Native American Tribe.

about the fish and she sprang into action. Thompson works closely with her environmental scientist colleague, Dinalyn Spears, a Narragansett and director of the tribe's Department of Community Planning and Natural Resources.

"Cultural and economic factors are important determinants of health; in particular, fishing and fish consumption among indigenous populations," Thompson says. "Individual participation in community-based research and group discussion of the risks and benefits of consuming fish has been shown to be effective methods for modifying dietary behaviors."

While seeking to protect the public from harmful health impacts, fish advisories do not take into account the impact of the absence of fish on an indigenous culture, including a loss of language and traditional technical and social activities associated with fishing. Conversely, continuing tribal fishing traditions in communities where fishing is critically linked to cultural identity has the potential to place tribal members at increased risk for health impacts from environmental contaminants.

This fall, Thompson and her colleague Elizabeth Hoover, an assistant professor of American/ethnic studies at Brown University, will facilitate talking circles, a traditional way for Native Americans to discuss problems. This first step in the project will offer Thompson insight into how the tribe views the issue while building trust between the researchers and tribe, and especially the elders.

Discussions will center around tribal fishing traditions to understand the meaning of fishing and its relationship to cultural ways of knowing, as well as the potential impact of environmental pollution on fishing and fish consumption among tribal members. Recordings of these sessions eventually will find a home in the tribal heritage collection and the Tomaquag Indian Memorial Museum.

During the last three years, Thompson built and nurtured a collaborative working relationship with tribal leadership, the Tribal Government Administration, and tribal elders. "The elders are the gatekeepers of the tribe. If they don't trust you, you're not going anywhere," she says.



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Thompson with colleagues and members of the Narragansett Native American Tribe.

Separately, researchers from URI, R.I. DEM and U.S. EPA will catch fish to test for toxicity levels. URI’s Graduate School of Oceanography and Dartmouth College will measure the levels of mercury and polychlorinated biphenyls (PCBs), as well as their nutrimental content for omega-3 fatty acids and selenium, a nutrient trace metal that binds with mercury.

“By testing both contaminants and nutrients, we can provide the tribe with a full picture of the risks and benefits of fish consumption,” Thompson says.

As the testing occurs in the lab, URI nursing students paired with tribal members will survey tribal households about fish consumption. These results will paint a picture of the average tribal member’s diet and the role of locally caught fish.

Besides keeping the tribe from eating potentially harmful fish, the tests and survey results also promise to show how contaminants flow through fish and tribal members.

Mercury and PCBs are pervasive and persistent in the environment. The chemicals are toxic to the brain and nervous system, and they can harm fetal and infant brain development. Thompson’s prior research in 2012 documented that 55.8 percent of childbearing-aged women in the U.S. exceeded the median blood level for both of these chemicals.

This is critical because ingested pollutants don’t just pass through our bodies. They tend to stick around and can be passed on by a pregnant woman to her fetus or a nursing mother to her baby. Age and fish consumption are significantly related to elevated blood levels among these women. Fish, especially top predators, are known to accumulate high levels of mercury and PCBs.

Eating the right fish could reduce pollutants for the tribe and provide health benefits, particularly because consuming some fish may reduce the risk of diabetes, obesity and cardiovascular disease.

“We’re exposed to hundreds, if not thousands, of environmental chemicals every day, and they impact our health,” Thompson says.

A report will document the team’s final results: Which Fish Are Safe To Eat? At that point, Thompson will work with the tribal government and its members to connect their cultural ways of knowing about fishing and consuming fish, with technical and scientific knowledge so that they can decide appropriate action. If remediation is necessary and feasible, Thompson will assist the tribe in networking with environmental scientists and chemical engineers.

Thompson and her students also will partner with Lorén



Chief Sachem Matthew Seventh Hawk Thomas, Marcella Thompson, Elizabeth Hoover and Dinalyn Spears

Spears, curator of the Tomaquag Museum, to work with the tribe’s children to design posters, fish puzzles, a children’s book and, if necessary, fish advisory signs about the findings. In addition, Thompson will help organize a fishing event for tribal youth where the elders and other adults will teach them to fish using traditional methods.

“We start with the tribal elders because they are the keepers of tribal knowledge,” Thompson says, “and we will continue to work with the children so that they become the tribe’s environmental stewards.”

The professor hopes that despite concerns about pollution, fish will continue to play an important role for the tribe in nutrition and cultural spirit alike.

“Not all fish are highly contaminated,” says Thompson, pointing out that fish low in the food chain, such as pumpkinseed, typically absorb fewer contaminants yet may hold high nutritional value.

If the team finds safe fish in tribal ponds and the Narragansett people don’t currently eat that species, a

creative solution, Thompson says, would be to create new recipes and traditions around that fish species.

For Thompson, the project continues a family tradition of sorts. Her ancestors arrived in Rhode Island with founder Roger Williams, who wrote extensively about the Narragansett’s fishing culture in 1648.

“It will be interesting to see if Williams got it right,” Thompson says.

Thompson recalls when she began working with the tribal elders three years ago she says, “I thought, ‘This is where I need to be.’ My ancestors knew their ancestors. I consider working with the Narragansett Tribe an honor and a privilege.”

With her latest project, she says she has promised herself and the tribe to leave no stone unturned and no report incomplete. And, she knows that her efforts will improve not only the physical health of the tribe, but their spirit as well.

“I don’t hide in the science,” Thompson says. “I became a nurse because I want to make a difference in people’s lives.”

