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Chapter Seven:
Teaching as Public Scholarship

Tribal Perspectives and Democracy in the Classroom

by Frank Clancy and Margaret Adamek

In early September of 1998, an unusual letter arrived at the office of then-University of Minnesota President Mark Yudof. Printed on the stationery of the Minnesota Chippewa Tribe (the MCT), an umbrella organization that represents six American-Indian bands but has limited governmental authority, the two-page document was by turns diplomatic, conciliatory, threatening, and poetic. It was signed by MCT president Norman Deschampe, a member of the Grand Portage Band from far northeastern Minnesota, who said he was writing about "a matter of great concern and urgency." The MCT, the letter said, had learned that University of Minnesota scientists were "endeavoring to genetically code and manipulate the wild rice stock native to our reservations." Deschampe urged the university to proceed with "the greatest possible level of caution."

The letter subsequently outlined four inter-related objections to research on and manipulation of the wild rice genome:

Economic: Increased development of wild rice in paddies would economically harm tribal members, who generally refer to themselves as *Anishinaabe* (the adjective or singular noun) or the *Anishinaabeg* (plural noun) (Meyer 1994); the tribe is also known as the *Ojibwa,* sometimes spelled *Ojibway* or *Ojibwe.* The Anishinaabeg, Deschampe pointed out, harvest

rice for commercial as well as religious purposes and individual use. Wild rice is, he said, "a unique treasure that has been carefully protected by the people of our tribe for centuries.... Should any party be allowed to genetically manipulate the rice and mass produce the rice in paddies, that would result in harm to our reservations and membership just as surely as if the rice were stolen directly from our rice camps."

Legal/Political: The university's research might violate federal law and treaties between the United States government and the Anishinaabe people. In nineteenth-century treaties, the Anishinaabeg ceded vast areas of land to the U.S. but reserved the right to hunt, fish, and gather rice on that land. The treaty of July 29, 1837, for example, says, "The privilege of hunting, fishing, and gathering the wild rice, upon the lands, the rivers and the lakes included in the territory ceded, is guaranteed to the Indians, during the pleasure of the President of the United States" (Treaty with the Chippewa 1837).

Scientific: The letter expressed concern that a genetically altered strain of wild rice might replace naturally occurring strains.

Cultural/Religious: The spiritual health and well-being of the Anishinaabe people are inextricably linked to wild rice, the letter suggested. "We are of the opinion," Deschampe wrote, "that the wild rice rights assured by treaty accrue not only to individual grains of rice, but to the very essence of the resource. We were not promised just any wild rice, that promise could be kept by delivering sacks of grain to our members each year. We were promised the rice that grew in the waters of our people, and all the value that such rice holds. The tribal signers of the treaty surely understood the singular nature of this rice since they fought a war with the Lakota people over this very resource. This rice from these waters holds a sacred and significant place in our culture."

The letter labeled the University of Minnesota research and the technology that might result from it a "direct threat" to a resource protected by federal law. And the Anishinaabe people, the letter added, were "prepared to undertake every legal and lawful measure to protect our interests in this matter."

Deschampe's letter was widely and quickly distributed among Minnesota's close-knit Anishinaabe communities. On the White Earth Reservation in northwestern Minnesota, for example, the tribe's monthly newspaper, *Anishinaabeg Today*, published the entire letter in its September 1998 issue. Not coincidentally, the editors devoted the entire front page of this issue to coverage of university President Yudof's visit to the reservation the previous month, and another trip by more than 50 university administrators and faculty in early September: Yudof's trip and his meetings with tribal educators and government officials had inspired hope that the university might take the Anishinaabeg's concerns seriously, and White Earth members had helped draft the MCT letter.

A copy of this letter was also sent to the offices of Visions for Change (VFC), an innovative project then located within the University of Minnesota's College of Agricultural, Food, and Environmental Sciences (COAFES) that promoted a sustainable food system and innovative approaches to higher education. A key component of their programming emphasized collaboration between land-grant universities and tribal colleges in Minnesota, North Dakota, and South Dakota through the development of numerous community-led joint ventures between the college and native communities. The letter was circulated to interested parties affiliated with Visions for Change, including Karl Lorenz, a student-affairs administrator who runs COAFES's Honors Program.

By coincidence, Lorenz, who is himself an enrolled member of the Lummi nation of northwestern Washington, had already organized an honors colloquium for the fall quarter entitled "Native American Perspectives on Land Issues and the Environment."

Such small-group seminars, which enable students and faculty members to interact informally, are a centerpiece of COAFES's Honors Program, and typically address timely topics that are directly relevant to at least some COAFES students or that touch on broader societal issues. Lorenz shared the letter with course instructors, George Spangler, a professor of fisheries and wildlife, and associate professor of nutrition, Craig Hassel.

What would happen, those three wondered, if they took the Anishinaabe grievances seriously—if they truly tried to understand the Anishinaabe view of wild rice? What questions must they ask? And who might answer them? What type of learning opportunity would this issue present to undergraduate honors students in agriculture? How would engagement with this issue, in the context of the classroom, move dialogue forward on this unusual and important concern? And, how does one teach a class of predominantly European American students how to sensitively and perceptively penetrate an indigenous worldview?

With the students' consent, Spangler, Hassel, and Lorenz decided to focus the entire seminar on examination of this controversy. Eventually they would describe its premise on the course Web site in these terms:

> This course will introduce students to the problem of perceiving and responding to a Native American perspective on the larger society's investigation of a sacred entity, wild rice. Students should be aware of the fact that eurocentric culture is occasionally (or, maybe even frequently) at odds with the interests of other cultures, including those that are embedded within our geographic boundaries. We trust that, by grappling with a very specific case study in our relationship with Native Americans, students will be able to better understand cross-cultural conflicts, and to develop an appreciation for alternative cultural points-of-view.

Wild Rice

The plant commonly known as wild rice is a grass belonging to the genus *Zizania;* the species *Zizania palustris,* one of three tha grows naturally in North America, has been harvested and eaten by native peoples for many centuries, and perhaps millennia. An annual, it grows in marshes, shallow lakes, and slow-moving streams (Oelke, Bloom, Porter, & Liu 1999; Huber 1999). It's an extremely nutritious food, high in carbohydrates and low in fat, with ample amounts of B vitamins and antioxidants (Vennum 1988; Hassel 2001).

Wild rice has been a staple of the Anishinaabe diet for centuries, a critical resource for surviving the region's long, harsh winters. Before the arrival of European settlers, who would subse quently destroy much of the plant's habitat with dams, drainage ditches, and other alterations to the natural environment, wild rice grew in abundance across much of what is now Wisconsin and Minnesota, as well as southern Canada. Traveling up the Fo River in 1673, Marquette needed guides to find his way through the wild rice. One historian wrote in 1850 about a lake where the wild rice was "so thick and luxuriant ... that the Indians are ofte obliged to cut passage ways through it for their bark canoes." Another writer described rice fields that "stretch as far as the eye can see" (Vennum 1988, pp. 19, 31). Still another wrote, "[N]o other section of the North American continent was so characteris tically an Indian paradise, so far as a spontaneous vegetal food is concerned, as was this territory in Wisconsin and Minnesota" (Jenks 1900, p. 1036). As late as the 1950s and early 1960s, residents of White Earth recall that some lakes were almost complete ly covered with rice.

But for the Anishinaabeg, wild rice has always been far more than an ordinary food, no matter how abundant. According to th tribe's oral history and creation stories, their ancestors moved west over a period of centuries, following prophecies that foretol

of a place where food grew on the water (Benton-Banai 1988). The food they called *manoomin* (roughly translated, the "good berry" or "good seed") (Vennum 1988) was thus a special gift from the Creator to the Anishinaabe people. It was—and still is—served at feasts and used in cultural and religious ceremonies. When someone dies, friends and family members leave wild rice at the grave.

Anishinaabe stories describe how the cultural hero Nanabozho was shown the food *manoomin*:

> One evening, Nanabozho returned empty-handed from hunting. Tired, hungry, and discouraged, he approached his fire, and noticed a duck sitting on the edge of his kettle of boiling water. So surprised was he by his good fortune that Nanabozho forgot to draw his bow, and the startled duck flew safely away. Looking into the kettle, Nanabozho found wild rice floating upon the water, but he did not know what it was. Still, he ate from the kettle, and it was the best soup he had ever tasted.
>
> Early the next morning, Nanabozho set out in the direction the duck had flown, arriving after many days at a lake filled with a strange water grass that bore the grain Nanabozho had seen floating in his kettle. Flocks of ducks, geese, and other waterfowl nested in the dense grass and fed on the grain. After that, when Nanabozho did not kill a deer, he always knew where to find food to eat (adapted from LaDuke 1999 and Smith & Vogel 1984).

"Wild rice is part of our prophecy, our process of being human, our process of being Anishinaabe," says White Earth historian Andrew Favorite. "It tells us, in those prophecies, that we'll find the food growing out of the water when we reach our homeland. We are here because of the wild rice. We are living prophecy fulfilled."

Outsiders have long recognized, at least in the abstract, the importance of wild rice to Anishinaabe life. Thus the tribe's 1837 treaty with the United States mentions the right to gather wild rice alongside the rights to hunt and fish. In 1898 and again in 1899, Dr. Albert Jenks, then a doctoral student at the University of Wisconsin, traveled extensively throughout Wisconsin and Minnesota to study wild rice. So important was this food to the people he met—the Anishinaabeg/Ojibwa as well as other tribes like the Menominee—that they were called "the wild rice gatherers of the upper lakes" in his widely cited report, written for the Bureau of American Ethnology (Jenks 1900).

Conflict over wild rice between the Anishinaabeg and the dominant society is neither new nor unusual. As long ago as 1849, the Mille Lacs Band complained that a dam built by white lumbermen on Minnesota's Rum River (in territory ceded by the 1837 treaty) interfered with the wild rice harvest. Six years later, the dispute erupted into violence, and federal troops were called in (Minnesota v. Mille Lacs Band 1999).

Less dramatic but far more prevalent—and, in the long run, far-reaching—were conflicts about how the Anishinaabeg used (and didn't use) this bountiful resource. Jenks, for example, writes, "The primitive Indians do not take production very seriously. Indeed, they do not take it seriously enough for their own welfare, for often they are in want in an unnecessarily short time after the harvest. In the case of wild rice, their want was due not to overproduction and underdistribution, but to underproduction.... They could gather more 'if they did not spend so much time feasting and dancing every day and night during the time they are here for the purpose of gathering'" (Jenks 1900, pp 1073-1074, quoting Motzfeldt, letter, Dec. 3, 1898). Jenks's articulation of the ceremony and feasting traditions that accompanied the annual harvesting reveals how poorly he understood the central significance of the rice and of the community celebrations and rituals that accompanied the gathering. Far from being a waste of time, these events were essential to preserving the life of the community, the centrality of rice to the culture, and the ongoing health of the crop from year to year.

Jenks was at times dramatically wrong: "The Indian," he wrote, "by his use of the wild-rice seed, is a great enemy of the plant, for it will be shown that the plant, unless it is artificially sown, is gradually being extinguished in such beds as are continually used." But his European perspective, which exalted "civilized agriculture," provided the intellectual, political, and moral foundation for dismissing Anishinaabe protests (Jenks 1900, p. 1026). And as Vennum (1988) points out, it was part and parcel of a broader justification of Manifest Destiny: "This view [of Anishinaabe 'underproduction'] was but one facet of the land-use argument of Europeans settling the North American continent; because the Indians were not using the land to its full capacity, they must relinquish their rights to those who would make it more productive" (Vennum 1988, p. 217). It was not until much more recently that this definition of *underproduction* was viewed as the indigenous practices of sustainable landscape management. This process of stewardship was based on a worldview that was at root participatory—well outside the scope of a modernist culture that considered itself disassociated from, and dominant over, nature. Taking only what one needed ensured a viable harvest for the following year. Additionally, Anishinaabeg had reseeding practices in place that also ensured wild rice beds would continue to thrive.

Similarly, some Anishinaabeg have vocally criticized the commercial exploitation of wild rice by non-Indians for almost as long as whites have been trying to grow a hybridized version of *Zizania palustris* in paddies, a variety developed at the University of Minnesota. In 1971, for example, when the paddy-rice industry was in its infancy, one Minnesota newspaper reported, "Some Indians, and a few non-Indians, resent anyone meddling with a crop that has been vital for Minnesota and Wisconsin Indians for centuries." The Anishinaabeg's goal, the article said, was "preserving something that is theirs alone." It concluded: "Besides, they want to keep their wild rice wild" (Gebert 1971). Vennum says "many Ojibway view the commercial exploitation of this resource by non-Indians as an ultimate desecration" (Vennum 1998, p. 1).

The Anishinaabeg's complaints, however, were no more successful than their attempts, more than a century earlier, to curtail the logging, dam-building, draining, and other development that damaged natural rice stands. At its most extreme, their concerns were mocked. This legacy of neglect and exclusion by policymakers characterizes both historic and contemporary attitudes toward, and experiences of, indigenous people and their traditional lands. It also represents the misunderstanding of indigenous approaches to sustainable development, which did not emphasize intensive resource extraction, but a minimal use for sustenance purposes.

A 1969 report to the Minnesota Legislature, commissioned by the Minnesota Resources Commission, described wild rice as a part of Anishinaabe heritage—something "uniquely his"—yet dismissed the Anishinaabe way of harvesting and marketing wild rice as "a September Santa Claus," a "good-berry Mardi Gras," and "the excuse and provision for a spending spree." This report, supported by taxpayer resources, suggests the prevailing attitude of the public and policymakers toward traditions and beliefs of the region's indigenous people. The trivialization of their central icon reflected a fundamental misunderstanding by European American culture about their own epistemological framework and that of native communities.

In contrast, this report portrayed the development of a paddy rice industry as a moral imperative: an agricultural expression of Manifest Destiny. Some may argue that the report reflects the totality of the quest for domination by European settlers in North America.

> To take the attitude of some sociologists and welfare agents that "the rice should be left to the Indian" is to close the eyes to facts. Once the white man tasted the grain it was no longer left to him—it became a delight of anyone's diet. So the white

man will eventually domesticate the grain! To curb the trend by stubborn, lethargic, do-nothingness will be to lose the business to another state with vision and the will to prosper its agricultural community.

If the Indian is to be raised to a level of equality, respectability and become a self-supporting part of [the] Minnesota economy, it is criminal neglect to let him waste his heritage and make no effort to better the one natural resource that is uniquely his (Edman 1969, p. vii; Vennum 1988, pp. 295-96).

In fact, this (decidedly European) vision of planting *Zizania palustris* in paddies and harvesting wild rice for profit dates back to at least the mid-1800s, but efforts to grow wild rice commercially did not begin in earnest until the middle of the twentieth century. The University of Minnesota, through its Department of Agronomy and Plant Genetics, literally helped birth the paddy rice industry. According to a recently published history of the department, a conference was held on the university's St. Paul campus in 1951, at which the 23 participants outlined a research and breeding program. Although that program was not funded, University of Minnesota scientists continued to work sporadically on wild-rice research for the next two decades.

In 1971, the Minnesota legislature approved funding for a research and breeding program designed to assist the nascent paddy-rice industry. Agronomist Ervin Oelke, who had experience working on rice production in California, was named the university's coordinator of wild-rice research. A wild-rice breeder joined the faculty in the summer of 1972. Since then, University of Minnesota scientists have been endeavoring systematically to develop strains of *Zizania palustris* that are more suited to commercial agriculture—in particular, ones that uniformly retain their seed until it can be mechanically harvested in a single pass. For a wild plant, however, this tendency for seed to ripen and drop at various times, known as "shattering," is an extremely useful adaptation.

Although Minnesota researchers and other breeders have made some progress towards that goal, dramatically increasing yield, wild rice has stubbornly resisted being turned into a predictable (and more profitable) crop like wheat or ordinary rice, both of which have a far longer history of breeding for commercial agriculture. Beginning in 1987 and accelerating in 1992, when Minnesota's paddy wild-rice industry began providing financial support for the project, university researchers took a new tack: they began to map the wild-rice genome. By enabling breeders to better understand how traits like shattering are inherited and to follow the inheritance of recessive genes, this research held promise of becoming a powerful tool that would, at the very least, dramatically accelerate the domestication process (Oelke 2000, R. Porter, personal communication).

In August of 1998—the month that Mark Yudof visited the White Earth Indian Reservation—the Minnesota Department of Natural Resources (DNR) granted university scientists a special permit to "examine wild rice stands growing in any public waters . . . for the purpose of taking, transporting and possessing leaf and seed samples for research purposes." The permit, which came from the DNR's Division of Fish and Wildlife, allowed researchers to gather leaf samples from no more than 100 plants on each site and to take no more than five pounds of seed from each. It said nothing about the purposes of the scientists' research and stated explicitly that researchers were not authorized to collect "samples or seeds from waters or in stands that may be under the jurisdiction of federally recognized Indian Bands." In fact, these scientists had been collecting samples in this manner for years but this time, news of the application and research on the wild-rice genome traveled to White Earth and other Minnesota reservations, where it fed both fears and resentment of the university's decades-long support for the paddy-rice industry.

To at least some Anishinaabeg, what the University of Minnesota researchers are doing is essentially sacrilegious. To them, human beings cannot possibly "improve" a sacred gift

from the Creator. And to change such a gift for financial gain is blasphemous. "We couldn't look at wild rice that way," says Judy Fairbanks, a member of the White Earth band and a fundraiser at White Earth Tribal and Community College. "This is our gift from the Creator. Interfering with it, changing it, is not a good thing. If it cannot grow naturally any more, whether because of interference with its environment or its very essence—its being, the DNA—then we have disrespected our gift." For indigenous people, icons central to their identity are often an important focus for destruction by a colonizing force—whether it be the decimation of the Great Plains buffalo, patenting of Basmati rice by American companies, destruction of linguistic systems, or genetic coding of a plant. These acts contribute significantly to the precipitous slide toward cultural extermination.

This is indeed a terrible fate to face, and one that is difficult to understand for people of European descent. For those who gladly gave up their language and customs to assimilate into the cultural norms of their new homeland as did most European immigrants, it is very difficult to understand what is truly lost by those who resist this assimilation and collectively yearn and struggle to maintain their traditions.

To the Anishinaabeg, their fate as a people is inextricably linked to the fate of wild rice. "We stand to lose everything," says Joe LaGarde, another White Earth Band member. "That's what's going to happen, if they continue with what they're doing. What happens when this wild rice that's been genetically altered gets in with our wild rice? Will [wild rice] turn into a hybrid? What will happen to wild rice? It will be gone within three years.We're going to lose everything if they continue with this research, what I call messing with our wild rice—with genetically altering it. It's our third prophecy. So we have a duty to protect our future. That's what we're looking at—the future of our people. If we lose our rice, we won't exist as a people for long. We'll be done too."

Important in LaGarde's words is his identification of the Third Prophecy, which outlines an incursion that threatens the stability

of wild rice. Thus, Anishinaabeg not only are seeking to protect a longstanding and important commodity, but their religious stories articulate the current situation and dictate what must be done as a response to protect the rice.

The Undergraduate Honors Seminar

Such was the context in which COAFES faculty and staff members planned a seminar called "Native American Perspectives on Land Issues and the Environment." For a century and a half, the dominant society had dismissed and even ridiculed Anishinaabe views about wild rice. For half a century, the State of Minnesota, through its land-grant university, had supported research and an industry that many Anishinaabeg saw as harmful.

As they pondered organizing and teaching this class, Lorenz, Hassel, and Spangler knew they faced an epistemological and pedagogical challenge. Spangler had served as a consultant to the Mille Lacs Band in a treaty rights case that was then at the United States Supreme Court. (In 1999, the Supreme Court ruled that the Anishinaabeg retained hunting, fishing, and rice-gathering rights on lands they had ceded to the U.S.) Hassel had worked with Visions for Change, an experience he credits with radically altering his view of his role as a scientist. In addition to being Native, Lorenz had studied American-Indian history and religions and environmental philosophy, including that of the Anishinaabeg. They wanted to do something different—to go deeper.

How, they wondered, could they avoid the hubris that so often characterized the dominant society's view of Native Americans? Could they do more than describe Anishinaabe views from a Western perspective, and instead help students (and themselves) to understand? How could this course not only address an important local issue, but also respond in a civically accountable way that was in keeping with the land-grant institution's mission of public scholarship?

This challenge required a systematic reassessment of the professor's role in teaching, an important part of teaching as a form of public scholarship. Hassel and Spangler began by showing students the letter from the Minnesota Chippewa Tribe and asking them if they wanted to focus on this issue. After the students chose to examine the issue of wild rice, they were divided into small groups and asked to analyze the MCT letter. What questions should they ask? Who might be able to answer them?

Hassel explains: "I'm a strong advocate of critical thinking. I'm a strong advocate of student-directed learning. I'm a strong advocate of using whatever mechanisms possible to engage students in their own learning, and to have them take responsibility for that. So I made the suggestion that we allow students the opportunity to examine the letter, and then ask, 'What do they get out of it? What are the issues in this letter?' Allow them to unpack this letter and list the issues, based on their reading." This process of student-claimed ownership of the course direction and content provided a purposefully constructed public space, where the key stakeholders set the agenda and outcomes for their own learning. From a public-scholarship standpoint, this democratic approach enabled students to claim and prioritize their individual and collective learning experiences.

From the beginning, students knew, that as a final group project, they would have to make recommendations to President Yudof about how the university should respond to the Anishinaabeg's concerns. In order to do that, the students compiled a list of 13 issues they needed to understand:

1. Legal treaty rights
2. "The University-of-Minnesota side of the story"
3. Economic implications (winners/losers)
4. Research implications (biotechnology)
5. Detachment from general society (general society perspective excludes Native American perspective)
6. Preserving Native American culture
7. Must be players on the political scene (DNR, BIA, legislators ...)
8. Ethical issues and dimensions (equity on use issues—if they can why can't we)
9. "Good intentions" vs. real-life outcomes
10. Environmental issues (preserving the wild stock)
11. Racism
12. Historical perspectives (expropriation)
13. Trust, fear, vulnerability

Even after students had compiled this list, Hassel and Spangler continued to take a fundamentally different approach to teaching. "The stereotypical expectation for a course is that the knowledge exists at the university, and the faculty member represents the source of that knowledge," Hassel says. "In this course, and in other courses I've taught, you have to take the approach that the university is not the source of knowledge but a resource for accessing knowledge. And faculty members are not the experts. They are not the sole source of knowledge, they are not the core of knowledge, but the means by which to access the people who are knowledgeable." This democratized notion of expertise, coupled with the role of professor as facilitator suggests an alternative purpose for the teacher—another key feature of public scholarship.

For assistance, they contacted Joe LaGarde, a White Earth elder who had served on the board of directors of Visions for Change. He, in turn, arranged for a series of speakers, most of them White Earth Anishinaabeg, to visit and address the class. In addition, the instructors invited two of the key scientists working on wild-rice research: Ronald Phillips, the geneticist who was (and still is) leading efforts to map the wild-rice genome; and

Ervin Oelke, an extension and small-grains specialist, who served as coordinator of the university's wild-rice research program from 1972 until his retirement in 2000.

In late October, the class also traveled to the White Earth Reservation, about 250 miles north and west of Minneapolis, where they toured the reservation and heard speakers discuss wild rice as well as an array of other issues, including efforts to restore the band's land base. Established in 1867, the 1300-square mile reservation serves as home to about 5,000 enrolled members. Total enrollment is about 22,000, making White Earth the largest of seven Anishinaabe reservations in Northern Minnesota. But, because of government policies and widespread land swindles early in the twentieth century, individual Anishinaabe people and the tribe actually own only seven percent of the land on the reservation.

The Anishinaabe View

Any attempt to understand the Anishinaabe view of wild rice must begin with the sacred and an appreciation of what wild rice meant and means to them—not in Western terms of history and beliefs, but in terms of their own history and beliefs. White Earth elder Paul Schultz, who helped teach the Honors Course, explains: "From where we come from, the sacred is the absolute essential starting point. And in the case of wild rice even more so, because wild rice is such a sacred sign to us. We were brought to this land where the food grows above the water as a prophecy from our Creator. This is where we were meant to live. The Creator intended for us to always have *manoomin*, wild rice, as a part of our life, as part of our culture, as our reminder of how we got here."

The lives and spiritual well-being of the Anishinaabeg are inextricably tied to wild rice, in a way that science cannot explain or comprehend. Schultz continues:

> That rice is not ours. It is a gift given to the people from the Creator. Because of the significance of the rice—it being the symbol to let our people know that we had reached the homeland—it is a continuing reaffirmation for us. That's why we don't want it messed with. As long as that rice is there, the people are in the homeland. As long as the shells [of the rice] are in the lake, and can come to the top of the water any time the Creator wants them to, we are in the homeland.
>
> Our concern is that Western development and Western science, in their quest for doing whatever they have designated is important, would operate with total disregard for that truth. That's what they miss. This isn't about us owning rice. It's about rice and the Creator, being the symbol that we are where we are meant to be. If the rice were to disappear, and the lakes were to be altered so that the shells were no more, and would no longer come to the top of the water, our people would be in great confusion and despair. The whole idea of cause and effect, for the Western mind, cannot come to that truth for us. That's the point of contention.

In the Anishinaabe view of the world, every living thing has a spirit and soul, at least equal and perhaps superior in value to human beings. That perspective is, of course, diametrically opposed to the Judeo-Christian teaching of Genesis, in which God gives mankind dominion over all the plants and animals. Lori Ylitalo, a professor at White Earth Tribal and Community College, explained this principle in a letter to students: "Our creator gave this rice to us. We are no more important spiritually than the plants that the creator gave to us. We are simply the caretakers of this resource. We feel that this is mankind's purpose in life, to be caretakers of the many resources. Because the rice has a spiritual quality, we must treat it with respect."

That is not an easy concept for Westerners, and particularly those trained in the sciences, to accept. It is also a challenge in the

context of a public institution, where the secular is purposefully elevated above and separated from the sacred. In *Wild Rice and the Ojibway People*, Vennum says, "Traditional Ojibway life elevates rice above being food simply for consumption or barter. Stories and legend, reinforced by the ceremonial use of *manoomin* and taboos and proscriptions against eating it at certain times, show the centrality of wild rice to Ojibway culture." But these factors, taken together, he concludes, suggest that wild rice was not sacred but instead, "at least in the past, approached the status of a sacred food" (Vennum 1988, p. 58). Vennum's analysis reveals an incomplete understanding of how wild rice is intrinsically sacred to the Anishinaabeg, which forms the cornerstone of this issue historically *and* today. In 1982, a food store unknowingly donated paddy-grown wild rice to the St. Paul American Indian Center for a Thanksgiving meal. According to Charlene Smith and Howard Vogel. American Indians "refused to take the free rice, even though it meant their children might go hungry, because the paddy rice offended their cultural and religious sensibilities. Labeling the paddy rice as wild rice was analogous to misrepresenting non-kosher food as kosher" (Smith & Vogel 1984, p. 794 and Vennum 1988, p. 297 led me to this anecdote).

Others, including some Anishinaabeg, have compared wild rice to bread and wine, which are sometimes sacred in Christian faiths. But unlike those foods, wild rice does not become sacred to the Anishinaabeg through human intervention, when it is blessed. To the Western mind, wild rice presents a kind of tautology: Wild rice is sacred because it is wild rice. In a sense, it's akin to the Hindu view of cows—except that the Anishinaabeg embrace the additional paradox of eating (and selling, on a limited basis) a food they consider sacred. To the indigenous mind, however, all living things possess a soul, a mind, and relationship to all other things. The Anishinaabe worldview is participatory, inter-related, and ensouled, whereas the stance of the Western mind is rational, detached, and objective. Westerners have been trained to reject this view, suggesting scientific illiteracy as the cause for the

Anishinaabeg's concerns. A more complex read of the seemingly incommensurable nature of this epistemology suggests that there exists two relationships to one plant, rather than an archaic and primitive view of something that the rest of us know is inanimat

For the Anishinaabeg, history likewise plays an important rol in their telling of the wild-rice story. This history includes both the broader story of how whites stole their land and deprived them of civil rights, as well as the history of the University of Minnesota's relationship to American Indians. They mention, for example, Albert Jenks, the anthropologist who studied wild rice for the Bureau of American Ethnology and later became a professor at the University of Minnesota.

In 1914 and 1915, a decade and a half after he published "The Wild Rice Gatherers of the Upper Lakes," Jenks visited White Earth and other Minnesota reservations as a consultant for white defendants in a number of land-fraud lawsuits that hinged primarily on the question of whether the individual who originally sold the land was a "mixed-blood" or a "pure-blood" (who by law was not allowed to sell his allotted reservation land Like many modern scientists who consult in legal cases, Jenks unabashedly used "science" to assist those who had hired him. Jenks measured the heads, faces, and noses of American Indians; he observed eye color, skin tone (his ostensibly scientific method relied on the pinching of arms), hair texture, and teeth.

Quite predictably, his results, which the University of Minnesota published in a monograph, served the defendants' needs. "It was soon discovered that the pure-blood Indian type was noticeable chiefly by its absence" (Jenks 1916, p. 2; Meyer 1994). It should also be noted that Jenks' method of racial science was part of a broader movement at the time, the methodology of which has since been soundly rejected.

Even more pertinent, to the Anishinaabeg, is the history of th university's involvement with cultivated wild rice. Working for decades at the request and on behalf of a couple of dozen white paddy-rice farmers, University of Minnesota scientists helped

give birth to, and have supported for decades, an industry that many Anishinaabeg perceive to be economically as well as spiritually harmful. Though the Anishinaabeg never truly controlled their economic interest in wild rice—even before the birth of the paddy-rice industry, whites typically acted as intermediaries and manipulated prices—in real terms, the price of wild rice has plummeted since the 1970s. So there is no history of trust and goodwill between the University of Minnesota and American Indians who live within the state's borders.

In legal terms, the Anishinaabeg make a complicated argument based on the tribe's 1837 treaty with the United States, in which the Anishinaabeg agreed to sell land while the federal government guaranteed them hunting, fishing, and gathering rights on the ceded lands. In its 1999 decision favoring the Anishinaabeg, the United States Supreme Court would write (quoting a landmark 1943 Supreme Court decision) that in order to interpret this treaty, "we look beyond the written words to the larger context that frames the treaty, including 'the history of the treaty, the negotiations, and the practical construction adopted by the parties'" (Minnesota v. Mille Lacs 1999). The Anishinaabeg thus argue that their ancestors' view of wild rice as having a spiritual value and essence worthy of preservation in its natural state, gives them a voice in shaping the plant's future: Norman Deschampe's assertion "that the wild rice rights assured by treaty accrue not only to individual grains of rice, but to the very essence of the resource."

In the honors class and numerous times since, the Anishinaabeg have made it clear that they do not oppose either science or scientific research *per se*. In fact, they argue, indigenous people, because they lived off the land, were forced constantly to observe and learn about the natural world. Scholar Gregory Cajete differentiates between indigenous and Western scientific traditions, suggesting that native science is about circularity, interdependence, and relationship, not about causality, detachment, and objectivity. In order to survive, they had to be scientists. "I don't think we're

in conflict with pure science," explains Judy Fairbanks. "It's the value of what to do with [science], or how you use it, how you direct it."

"Not all research is for the good of people," says Joe LaGarde. Clearly, the University of Minnesota's legacy of research in "Indian Country" is not only considered unbeneficial, but extremely harmful.

For the Anishinaabeg who taught this honors class, genetic engineering represents the biggest threat and their greatest fear. They worry that scientists—perhaps relying on a genetic map developed at the University of Minnesota—will eventually do what has already been done to corn, soybeans, potatoes, and many other plants and animals. And that those foreign genes will spread to natural stands of wild rice, much as genetically modified corn has spread beyond its intended boundaries.

What Andrew Favorite objects to, he says, is "When you take the genome, and you take something synthetic, and you alter the natural organic thing, so now you have a hybrid that can affect the natural thing that God created, that's part of our creation and spirituality. That's dangerous, and that's scary, to our worldview. We've already messed with corn. We've got Dolly the sheep."

Vandana Shiva suggests in her pioneering work that indigenous people have experienced colonization in three waves: geographic—in which territories were conquered; development—in which international aid and programs were established to continue resource extraction from former colonies; and genetic research—in which claims are staked on genetic material of traditional plants and the DNA of tribal people by scientists (Shiva 1999, p. 7). Clearly, the Anishinaabeg are not simply rejecting science, but see this research as an ongoing march on a trajectory of colonization that has very nearly eliminated them and all of the things they most cherish.

One Anishinaabe woman puts it this way: "Wild rice was perfect just the way it was made. Why change it?"

Much of what the class learned was knowledge gained from the millennia-old knowledge traditions of the Anishinaabeg that reflects their deep reverence for, connection to, and understanding

of the "sacred web of life," not from books and laboratories. On their visit to the White Earth Reservation, for example, students listened to elder Earl Hoagland describe and demonstrate traditional methods of processing wild rice. He also spoke about the sharp decline of once-prolific wild rice stands, and the environmental and cultural factors that have contributed to the deterioration. This experiential element of the class was critical, as it brought students out of the classroom and into the Native community—near the rice and close to the people and their stories. The issue of wild rice for these students was very local—it was unfolding as they learned about it; it was germane to the culture and practices of their institution; and it was sited in their home state. The site-specific nature of this teaching enterprise suggests an important feature of public scholarship—the uplifting of the local over other contexts.

With many different individuals addressing the class, the method of instruction was almost inevitably circuitous and at times repetitious. When asking people to speak, Joe LaGarde made no attempt to coordinate what they planned to say. In some respects, repetition underscored a key point: Students were hearing the voices of a community, from a culture and individuals who value and work for the well-being of the group before the individual. This approach is not haphazard, but an indigenous means of pedagogy. In this tradition, when representatives are invited to speak, they share what they are inspired to share. Thus, certain points were reinforced through repetition, and new perspectives and nuances were added to the overall narrative of wild rice, Anishinaabe people, and scientific research.

Students were asked to reflect and respond to these presentations through assignments that asked for an articulation of a native point of view on an issue. This process enabled them to reflect, synthesize, and articulate what they were hearing, as well as test their own ability to step into a worldview different from their own. And what that group of people wanted and still want from the University of Minnesota continues to be unequivocally clear: they want President Yudof to suspend all research on wild rice until scientists and the Anishinaabeg reach agreement about what direction it should take, and where it should not venture.

To support their claim, the Anishinaabeg point to laws that require scientists to work with tribes before doing research on native graves and anthropological sites and to ethical guidelines that require the informed consent of individuals involved in medical research, as well as the sharing of information. Helen Klassen, Ph.D., the president of White Earth Tribal and Community College, says the Anishinaabeg should have been consulted decades ago. "When you conduct research within a community," she says, "there are guidelines that usually are followed, one of which is to ask permission of the people whom you are going to be studying. Another guideline would be to publish the results and make them available to the community so that they're aware of the study and what benefits will come from it." While this approach is followed when undertaking human-subjects research, plant and animal researchers are neither expected to ask permission of the human community that interacts with these species nor the species themselves. An important civic outcome from this example of teaching-as-public-scholarship is the identification of the need to reform Institutional Review Board and research ethics codes to address indirect risk and harm to vulnerable populations.

University Scientists' Views

Two University of Minnesota scientists visited and described their work on wild rice for the honors class: agronomist Ervin Oelke, who began working with paddy-rice growers soon after he was hired by the university in 1968 and served as the university's coordinator of wild-rice research from 1972 until his retirement in 2000; and geneticist Ronald L. Phillips, whose research on the wild-rice genome is at the center of the current controversy. They believe that the Anishinaabeg and students both misunderstood and misrepresented their work. Oelke even goes so far as to call

the class structure a "loaded deck" and its recommendations to President Yudof "a slap in the face" of researchers.

The scientists say emphatically and unequivocally that they will not genetically engineer wild rice or otherwise manipulate the genetics of *Zizania palustris* through any means other than traditional breeding. Phillips's work involves creating a basic map of the wild-rice genome, understanding which genes control which traits and where those genes are located. "From my standpoint," he says, "it's standard genetics. It's standard modern genetics and breeding. We're not introducing new genes. But it is breeding, just like we've done ever since we started agriculture. We're selecting types in order to modify the plant's genetics." It is important to consider Oelke's concern about the nature of the agenda of the course. But when the tables are turned and the viewpoint of a particular substance or approach is exclusively scientific, does this too constitute a loaded deck? This question—one that is critical for our multicultural democracy to grapple with—explores how cultural diversity and epistemology can, should, and do influence pedagogy and curriculum in public institutions.

To the scientists, this research is a logical extension of efforts begun decades ago. *Zizania palustris* is different from other cultivated crop plants in that it has a relatively short breeding history; there's still a tremendous amount of genetic variability even in strains bred for cultivation in paddies (Imle, Phillips & Porter 1999). Compared to crops like wheat, corn, and ordinary rice, *Zizania palustris* is thus unpredictable and, by Western agricultural standards, inefficient. Indigenous cultures might construe this unpredictability as the essential diversity that we need to sustain life on the planet. Eventually, scientists hope, genetic research will allow plant breeders to follow recessive traits closely, improving the efficiency of the breeding process and thus accelerating the pace of domestication. It will, in other words, eliminate much of the trial and error involved in typical plant-breeding efforts.

Phillips began his work on the wild-rice genome in the early 1990s, in response to a request from Raymond Porter, a research

associate at the university's North Central Research and Outreach Center in Grand Rapids, Minnesota, who works full time on *Zizania palustris* breeding and genetics. Porter was himself responding to a request by paddy-rice growers that the university conduct basic research on wild-rice genetics. He called Phillips, one of the nation's leading plant geneticists, for advice. To help Phillips get started, paddy-rice growers paid for an initial postdoctoral researcher. Since then, Phillips has obtained funding from a variety of sources, including the Cultivated Wild Rice Council, an industry trade group; the USDA National Research Initiative; and the USDA Agricultural Research Service. Porter's work, which primarily involves the breeding of *Zizania palustris* varieties for cultivation, is funded through the Agricultural Research Service.

This same combination of industry initiative and individual interest prompted initial efforts by University of Minnesota scientists to help develop *Zizania palustris* as a commercial crop, Oelke says: "That's how a lot of things start. We—particularly in agriculture—probably work more closely with the clientele group, so to speak, than engineering and other departments or colleges. So when the clientele comes to us and says, 'Hey, can you help us?'—we listen. And if funding comes, then we do some work. That's just the way that, historically, we've worked in agriculture. If a group comes to us, we'll see what we can do, in terms of helping, if there's someone [on the faculty] interested. If there's no faculty member who has an interest, it doesn't go anywhere either." And, of course, "without any funding, you can't do any work," Oelke adds.

Minnesota's paddy-rice industry is, by economic measures, small. According to the Minnesota Cultivated Wild Rice Council, in the year 2000 approximately two dozen growers raised approximately 6.3 million processed pounds of *Zizania palustris* (worth approximately $9 million wholesale) on 18,000 acres of land in the state of Minnesota. Growers support the council's marketing and research efforts through a check-off program that charges seven cents per processed pound.

By helping agriculture, the scientists believe, they are serving both the public good and the historic mission of the land-grant university. Their work, they say, is especially important to Minnesota growers, who must compete with California farms that typically harvest more than twice as much rice per acre because they enjoy a longer growing season, are hit by fewer storms, and have fewer problems with disease. "As a breeder," Porter says, "my goal is to develop more productive wild rice varieties that will meet the growers' needs. The goal is to develop varieties that are more suited to growers, and particularly Minnesota growers." Clearly, in this equation, indigenous people in Minnesota do not surface as legitimate economic competitors.

Oelke points to the dramatic improvement in yield that has been achieved since 1950, in large part because of plant breeding. Though early paddy-rice farmers harvested just 30 to 40 pounds of finished grain per acre, Minnesota growers today average about 350 pounds per acre. (In California, growers average 1000 pounds per acre.) Ordinary rice produces as much as 9000 pounds of finished grain per acre. "With hybrids, you might be able to get to that range," Oelke says. "It will take a while to get there, because those other plants have been under domestication for thousands of years, and here we're only talking about a 50-year span. [Wild rice] is still too tall; it produces too much green vegetation and not enough seed. Who knows what the potential could possibly be?"

Phillips sees his role as bridging the gap between academic genetics and applied agriculture and acting as a complement to industry scientists who focus almost exclusively on large cash crops like corn and soybeans. "I'm interested in understanding crop plants and trying to bridge that distance between the basic understanding of genetics and how it can be applied to those plants. So I study the genetics of various plants and develop methodologies to make improvement more efficient. I try to think of things that commercial companies won't necessarily do. I've enjoyed working on wild rice, because I think that work is not going to be done by a company. I spend a lot of time on oats, too. All of my work has been to try to complement what goes on in industry.

"I think about what I do as a complement to what others do. And I try to do it in a way that is open to the public and for the public good—try to publish everything, and so on. My goal is definitely to help agriculture in that process." Fascinating in the dialectic surrounding the wild-rice issue is the public aspect inherent in both the course and the historical research agenda. Here is where cultural diversity plays a unique role in rethinking what constitutes public scholarship and how to handle all of the outcomes—anticipated or not—from these inquiries.

From the perspective of paddy-rice growers, the single most important trait is shattering—the tendency of *Zizania palustris* seeds to fall off the plant before they can be harvested. Because *Zizania palustris* is an annual, that's a beneficial adaptation in natural stands of wild rice, since it increases the chance that enough seeds will survive such common obstacles as blackbirds, storms, and human harvesting and thus help the plant to thrive. Corn, wheat, and other domesticated crops all went through a similar breeding process years ago, without, of course, a genetic map. Other traits of interest to scientists include seed dormancy, height, and strength of the plant stem.

A secondary goal of the university's genetic research is to analyze and catalogue the genetic diversity within *Zizania palustris* (Imle, Phillips & Porter 1999). This knowledge, scientists say, may someday help to preserve or restore natural stands of wild rice, which are declining throughout Minnesota. That is, of course, an issue of great importance to the Anishinaabeg.

In addressing fears that traits will migrate from paddies to wild-rice stands, the scientists speak a very different language than do the Anishinaabeg. To them, it's a matter of assessing and minimizing risk. Wild-rice pollen is relatively fragile and does not travel well. If paddies are distant from natural stands of wild rice, there will be little migration of genes, scientists say. In addition,

because paddy rice is bred for cultivation, to thrive under narrowly prescribed conditions, scientists say it's highly unlikely that the cultivated traits will make inroads in natural stands since those traits are less well adapted to life in the wild.

"It depends on what you're willing to accept as a threshold [of risk]," Phillips says. "The possibility of a trait coming in from one of the bred varieties that would significantly alter the wild type is probably not very great. But it is possible. So you can't guarantee [that it won't happen]. You can't guarantee that a bird won't pick up a seed and take it 20 miles away. So that's where you have the conflict.... You've got to agree on some threshold, and in our discussions [with the Anishinaabeg], some people said, 'Well one in a million is too great a risk.'" New research, however, demonstrates the drift of wild-rice pollen up to four miles from its original source. Elders are concerned about the distribution of genetically modified seeds through duck populations' ingestion and elimination of modified wild-rice seeds around the state.

Similarly, although Phillips's research on the wild-rice genome might be useful to others who want to genetically engineer *Zizania palustris,* he says this research is tangential to that process. And unnecessary. Scientists have successfully inserted genes into corn, soybeans, and other plants without a genetic map. Oelke says there's simply not enough profit in wild rice to justify the sort of investment that genetic engineering would require.

The Minnesota scientists also see this conflict as an issue of academic freedom. Phillips says:

> There are things that I don't want to do as a person, because I know there is this sensitivity, but I don't want the university telling me I can't do it. There's no way I'm going to start genetically engineering wild rice. I told them [the honors students and the people of White Earth] that. But I don't want to be in an environment where people say, "This is acceptable for you to work on, and this isn't." That's why we have universities, and why we have people with tenure—so they can address societal issues, and try to get at the facts, and then use that information to understand issues better, and move ahead. It's not uncommon to have social issues that divide people. And knowledge is probably the best way to make some kind of progress. So you don't want a university saying, "You can't do this, you can't do that." But as individuals, you make decisions about what you work on.

The scientists have known for decades about Anishinaabe objections to paddy-grown wild rice, albeit primarily on economic grounds. Oelke, for example, recalls reading letters to the editor and hearing complaints as far back as 1968, when he joined the University of Minnesota faculty. Those objections, however, have sometimes been obscured by the fact that individual reservations have occasionally cultivated their own paddies (and at least one still does). "There was an attempt always to include [the Anishinaabeg] wherever possible, and help them in the marketing," Oelke says. "Even now, the Wild Rice Council is there to help them market their grain as well. It seems to me they have an ideal product to market, and they are marketing it as organic, and as being from the lakes, so they can get a premium price on it."

The University of Minnesota scientists have also worked occasionally on projects designed to restore or preserve natural stands of wild rice, even cooperating with individual Anishinaabe bands. Porter, the wild-rice breeder in Grand Rapids, Minnesota, says, "I have worked as much as I could within the bounds of my position, and my research, to try and find ways that I could do things which would be of benefit to the reservations." From the scientists' perspective, this recent conflict has as much to do with politics as science, since they had been working to map the wild-rice genome for more than five years when the Minnesota Chippewa Tribe sent its letter to Mark Yudof. And indeed, the letter was written while the Anishinaabeg's landmark court case involving usufructuary rights awaited a hearing at the United

States Supreme Court. (As noted previously, in 1999, the Court upheld the Anishinaabeg's right to hunt, fish, and gather food on lands ceded to the U.S.)

The scientists and the Anishinaabeg nevertheless frame this conflict in radically different terms. Porter, who came to Minnesota from Texas, initially struggled with accusations that the paddy-rice industry harmed American Indians. He says, "I had to work through that, and recognize that this [research program] is happening not for the purpose of harming another group of people, but for the purpose of benefiting growers, and benefiting consumers who want to eat wild rice."

To Ervin Oelke, the conflict ultimately boils down to a single question: Who "owns" wild rice? "Are plants on this earth for all people, or are they just for one group?" he asks. "The issue, I think, boils down to this question of, 'Whose plant is it?' My answer is that I think plants should be used by as many people as possible, for the benefit of humans. Actually, wild rice existed before humans were [in the Upper Midwest]. It just happened to be there at the time of the [Anishinaabe] migration, and they utilized the plant."

And that, say the Anishinaabeg who taught the honors class, is precisely the wrong question. "This is not about ownership," Paul Schultz insists, because that concept implies the right to dispose of or otherwise manipulate "property." And that privilege, he claims, "was never given to science." As a gift, rice was to be preserved, protected, and shared. To the Anishinaabeg, then, *manoomin* exists for its own sake, outside the dominion of humankind. Schultz adds, "Scientists have been granted that right [to manipulate wild rice] for so long that somehow they think 50 to 200 years justifies it for all time. What we're saying is that if you've been making a mistake for 50 to 200 years, that still doesn't make it right today."

The Students' Work and Actions

That two groups of people—each meaning well, and each acting on what it considers principle—could define a conflict in such

radically different terms is, in the opinion of the professors who taught this class, exactly the point. "This whole class, I believe, was about an interaction where assumptions are not shared," says Craig Hassel. "There are fundamentally different ways of viewing the world." To George Spangler, part of the course's value stemmed from its location within the College of Agricultural, Food, and Environmental Sciences, which like most land-grant institutions teaches that industrial agriculture is the dominant model of food production and that the purpose of science is to serve that paradigm. Alternative or critical views of commercial agriculture are as rare as classes on Marxism within business schools.

The instructors created a public space where hotly contested perspectives of a local issue were facilitated through a semester-long discourse intended to provoke student learning. As an approach to public scholarship, the instructors simultaneously created public space for discourse on a public issue; democratized the classroom so students were empowered to chart their learning goals; opened a forum for a community who had no access to the institution; and created a process for students to exercise their civic activism within the university community.

As an assignment, students had to write a short paper on the environment from the Anishinaabe perspective. (The White Earth instructors helped grade the papers.) For a final project, Hassel and Spangler asked students to draft a letter to university president Mark Yudof making recommendations about how to address Anishinaabe concerns. In January 1999, they endorsed the Anishinaabe perspective.

"We have learned," the students told Yudof, "that wild rice is important to the Anishinaabe community, not only as an economic resource, *but also is essential to the well-being of the community and rests at the heart of their spirituality and traditions, wholly unlike any other food source*" (italics in original). Although they described the university scientists as "careful researchers with strong professional credentials . . . [who] have obviously served the university well," the students said, "there has been a clear lack of productive

communication between the research community at the University of Minnesota and the Native American communities involved. In our opinion, there has also been little evidence of interest on the part of the University to understand issues surrounding wild rice from the perspective of the Anishinaabe."

The class made three related recommendations:

- The university should suspend all research on the wild-rice genome until "there are opportunities for further education, communication and dialogue...."
- Visions for Change should be empowered to convene a symposium "on cross-cultural research issues specific to wild rice," with the Anishinaabeg playing an active role in setting the agenda.
- A standing committee of researchers, the Anishinaabeg, and a representative from Visions for Change should work to resolve the disagreement about wild-rice research and develop closer ties between Native Americans and the University of Minnesota.

Especially in light of the students' letter, the Anishinaabeg who helped organize and teach the honors class saw it as a profound gesture of respect from a powerful institution. They had met as equals. A small group of people within the university, at least, had treated their view of the world with respect. From the Anishinaabe perspective, none of this would have happened without Visions for Change, which for years had worked hard to forge relationships between faculty members and the Anishinaabeg. Similarly, the existence of White Earth Tribal and Community College, a 1994 land-grant institution, provided instructors, organizational assistance, and classroom space when students visited White Earth in the fall of 1998.

But the fate of wild rice remained foremost in the Anishinaabeg's minds. Whether the University of Minnesota would have responded meaningfully to their concerns without this honors class is, of course, impossible to know.

In October 1998, before he even knew about the class, President Yudof wrote Norman Deschampe of the Minnesota Chippewa Tribe, saying that he had asked the interim vice president for agriculture to meet with Deschampe and resolve the situation. Five months later, Yudof wrote to the students in the honors class, telling them, "Rather than terminate support of the cultivated wild rice industry the university and the College [of Agriculture] should broaden its mission to address total natural resource needs including how to assist [in] maintaining wild rice in natural stands." Despite this apparent rejection of their concerns, the Anishinaabeg continued to meet sporadically with university officials and discuss the fate of wild rice, the scientists' research on the wild-rice genome, and other potential research projects of common interest. Though the two sides remained far apart on the fate of wild rice, the Anishinaabeg and the scientists alike remained hopeful that they would be able to reach a compromise acceptable to both. The Anishinaabeg gave credit for this dialogue to the class—and the students' letter—which they believed had amplified Anishinaabe voices and served as a sort of fulcrum.

For a time, many of those involved in teaching the class thought that leverage, however small, might be enough to convince the university to negotiate an agreement acceptable to the Anishinaabeg. In retrospect, says Karl Lorenz, he thinks it was naive to imagine, as he had, that a few faculty members and students could change a vast bureaucratic institution. "In reality, what we managed to do was raise awareness [of Anishinaabe concerns about wild rice]," he adds. "To think that we could effect change was not realistic."

Anishinaabe elder Paul Schultz believes the failure of negotiations exposed a deep-rooted institutional bias at the University of Minnesota towards Western science and agriculture, and against the Anishinaabeg, who do not exalt science above the sacred, and

who see as sacred a plant, wild rice, that science wants to change. And that bias, in Schultz's view, prevents the university from fulfilling its historic responsibility, as a land-grant institution, to serve the people of Minnesota—at least the people of Minnesota who are not white. Is the university, he asks, committed to community? And do American Indians qualify as legitimate communities? "If not," Schultz adds, "is it because we are culturally different? In other words, is the ticket to membership in Minnesota still being white, Anglo-Saxon, Protestant, Catholic, or whatever? And if Indians are part of Minnesota's public, does the university carry a moral and ethical responsibility, as a land-grant institution, to sit down and work this matter out in a better way with us?"

Land-grant institutions are typically able to work with communities, Schultz argues, only so long as the community believes in the preeminence of science, and in Western concepts of man's relationship to plants and the environment. But not everyone in Minnesota subscribes to those beliefs. "We are not anti-intellectual," he says. "We are not even opposed to this [Western, science-based] system. But we are railing against this system's self-proclaimed capacity to control us, and to say that we have no contribution to make, even in an argument about something that was a sacred gift to our people." The core of the conflict, in Schultz's view, is the inability of Western science, and thus the University of Minnesota, to respect the sacred.

Even as that effort to negotiate a resolution stalled, the Anishinaabeg began collectively to explore other ways to protect wild rice. Emboldened by his work on the honors class, Joe LaGarde led efforts to form a broad coalition of tribes and sympathetic outsiders, including several University of Minnesota professors, who together tried to figure out how to pressure the university to halt research on the wild-rice genome. "The class," he said, "lit a spark.... What woke me up was to realize that you could take a bunch of young people who had never set foot on the reservation—who had never even been off concrete, really—and get them to understand the problem."

"When the community was asked to share its knowledge," says Karl Lorenz, "it was empowered. And it began to see itself as being empowered." The public-scholarship process was not only effective for the students and faculty, but was an empowering experience for grassroots community members as well. Not only were they the true "experts" around this important issue, but they gained access to the institution and important support from institutional stakeholders.

At White Earth, Helen Klassen and others began planning to prevent similar problems from arising in the future. Again sparked by the honors class, they worked to establish an institutional review board and written guidelines that would govern all research affecting the reservation, the tribe, its members, or its interests, including indigenous knowledge. Once passed, those rules, modeled on guidelines for medical and anthropological research, will require advance approval from the review board, disclosure of the economic and environmental effects of research, and other safeguards. This impact is a direct offshoot from the course and suggests that significant public gains can be made from constructing a course to serve a public good. Usually, Klassen points out, land-grant professors work hand-in-hand with farmers and other communities who are affected by research, in order to ensure that it serves the public good. "In this particular case [wild rice], it was not done that way," she says. "The people within the region were excluded. They were voiceless; they were not seen as important parts of this process. So the economic development and other benefits that might come from that research have never been realized by the native community."

Despite lingering tension over wild rice, Klassen also worked on efforts to build an environmental research and learning center, known as *Nibbi* ("water," in the Anishinaabe language), that will be located on the reservation and operated jointly by the Tribal College and the university.

The University of Minnesota instructors who organized and facilitated the honors course were also affected. It was George

Spangler's first experience in allowing students essentially to steer a course. Although apprehensive, at first, he left impressed by their ability to ask the right questions and to find individuals who could answer them. On an entirely different level, Spangler says, he came to understand that an individual's way of knowing is, to a large degree, culturally defined and, in this case, two ways of understanding wild rice—Anishinaabe and Western—exist in parallel, with each asking different questions, and finding different answers. This realization, in turn, has become an essential ingredient in an interdisciplinary graduate course, called "Ways of Knowing," that Spangler teaches.

For Craig Hassel, that insight was *the* key lesson of the course. Though he had brought outsiders into the classroom before, he says, they had all basically thought like university professors; this was the first time he'd invited speakers who saw the world through a different lens. "Paul Schultz was very eloquent in talking about the spirituality of wild rice and why this was so significant for the Anishinaabe people," Hassel recalls. "The level of student engagement as he was talking was really quite amazing; many were experiencing educational transformation. In fact, I remember telling Karl [Lorenz] on the way back that this is what education is about. It was truly an opportunity for the students to see a fundamentally different way of viewing the world that challenges some of the basic assumptions that we hold but usually do not question. It was very different from any other experience they have had." Hassel learned alongside the students: "I had never experienced such a powerful learning experience—both for me and for a significant number of the students," he says.

Karl Lorenz continues to bring different voices and perspectives into the COAFES honors program. He organized one seminar, for example, that focused on the experience and impact of Hispanic migrant workers in Minnesota. Like the wild-rice course, this seminar brought people on campus to talk about their lives and experiences, which schools of agriculture generally

ignore. "What's taught in that college," he says, "is essentially a party line.... The worldview of the dominant culture is echoed without fail in the curriculum." An important part of his job, he believes, is to make sure divergent voices are heard.

For Lorenz, organizing the wild-rice class was also a deeply personal experience. "As someone whose father is American Indian, it allowed me to integrate my worlds, which is something I usually can't do at the university," he says. "There is no place for me to be Indian. In a way, the class gave me a chance to stand by my people.... On a very personal level, I found it healing to see myself included in a world that up to that point had excluded me." But it was more than personal: he also took pride in knowing the class had inspired continuing efforts by the Anishinaabeg to stop genetic research on wild rice.

The nexus of scientific research, economic interests, and cultural diversity have proved to be a fertile ground for learning around the wild rice issue. In this particular case, there are multiple publics—students, researchers, instructors, Native American stakeholders, white commercial producers, industry, and state and federal policymakers. The emphasis on scholarship is focused less on the research in this case study, and more on the public aspects of pedagogy for undergraduate students.

Clearly, the instructors, students, and community-based experts were significantly impacted by their involvement with the course. Multiple, ongoing public outcomes emerged from this course, including development of other courses addressing public issues and using a similar pedagogical format, continued interaction between faculty and native communities, and new policies protecting indigenous concerns in native communities. Students were able to take a local, timely issue and develop a process for their own learning. They asserted their influence as members of a public community by requesting a series of actions by the administration and also learned what it meant to exist in a pluralistic society. Public scholarship in this context is as much about reflecting upon what pluralism means (in this case a pluralism of

epistemologies) as it is about addressing a public issue through a democratic, participatory process.

In 2003, this honors course was once again offered, entitled "Native American Perspectives on the Environment." Using the same pedagogical format, professors served as facilitators, students identified learning outcomes, teaching was a collaborative dance between scholars and Native American elders, and experiential learning (including a weekend stay on the reservation parching and winnowing rice, gathering wild fruit and preserving it, making birchbark rice winnowing baskets, and listening to stories about wild-rice traditions, treaty history, native cultural beliefs about landscape and ecological stewardship) were all elements of this course. Once again, students, faculty, and community members alike reported on the deep learning, democratic potential, and power of public scholarship in the form of teaching. While the wild-rice issue has not yet resolved itself, it persists as a rich learning opportunity in which the scholarship of teaching can be practiced around a local civic issue enriching dialogue about ecological values, multicultural collaborations, and the public good.

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Chapter Eight: Engaging Campus and Community to Improve Science Education

A Down-to-Earth Approach

by Robert Williamson and Ellen Smoak

This chapter tells the story of why and how we collaborativ developed, and implemented an experiential science educa curriculum called *Down-to-Earth: Enriching Learning Through Garde* (DTE) with and for secondary-school students and teachers. Th DTE story is a story of public scholarship. We believe that it hol important lessons, not only for historically black land-grant institu tions such as our own North Carolina A&T State University (NCA but more broadly for all those who are interested in engaging campus and community in addressing important public issues and challenges.

In the first phase of our story, we describe our motivations f developing DTE and how we went about pursuing it. In this ph we used focus group interviews, literature reviews, and a field experiment—all typical elements of scholarly research—to infor the curriculum development process. In the second phase, we provide an account of how we tested and refined the curriculur the context of a community-university partnership with Smithfi Middle School (SMS) in Johnston County, North Carolina. Here continued our public scholarship as we implemented and revis DTE with a community that is striving to address challenges re to academic achievement gaps for African-American youth. In t