

Extraordinary Partnerships

How the Arts and Humanities
Are Transforming America



**CHRISTINE
HENSELER
EDITOR**



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ARE TRANSFORMING AMERICA

Edited by
Christine Henseler



LEVER
PRESS

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The complete manuscript of this work was subjected to a partly closed (“single blind”) review process. For more information, please see our Peer Review Commitments and Guidelines at <https://www.leverpress.org/peerreview>

DOI: <https://doi.org/10.3998/mpub.11649046>

Print ISBN: 978-1-64315-009-3

Open access ISBN: 978-1-64315-010-9

Library of Congress Control Number: 2019954609

Published in the United States of America by Lever Press, in partnership with Amherst College Press and Michigan Publishing

CHAPTER FOURTEEN



BODY OF WATER

Merging Biology and Dance to Reach New Communities

Jodi Enos-Berlage and Jane Hawley

In 2014, Jodi Enos-Berlage, professor of biology at Luther College in Decorah, Iowa, was in the midst of a project investigating water quality in an impaired local stream that drained twenty thousand mostly agricultural acres. She needed to communicate water quality information to landowners and the broader community, as their participation would be key to making improvements, but she questioned whether traditional science communication approaches would be effective.

Meanwhile, Jane Hawley, professor of dance, was also facing challenges. She was searching for ways to broaden her audience and demonstrate that dance could help solve problems. Jane was putting her paradigm-shifting Movement Fundamentals (MF) curriculum into practice—training dancers in concepts rather than steps—to develop a nonstylized movement vocabulary that bodies of all sizes, shapes, ages, and abilities could use to communicate ideas.

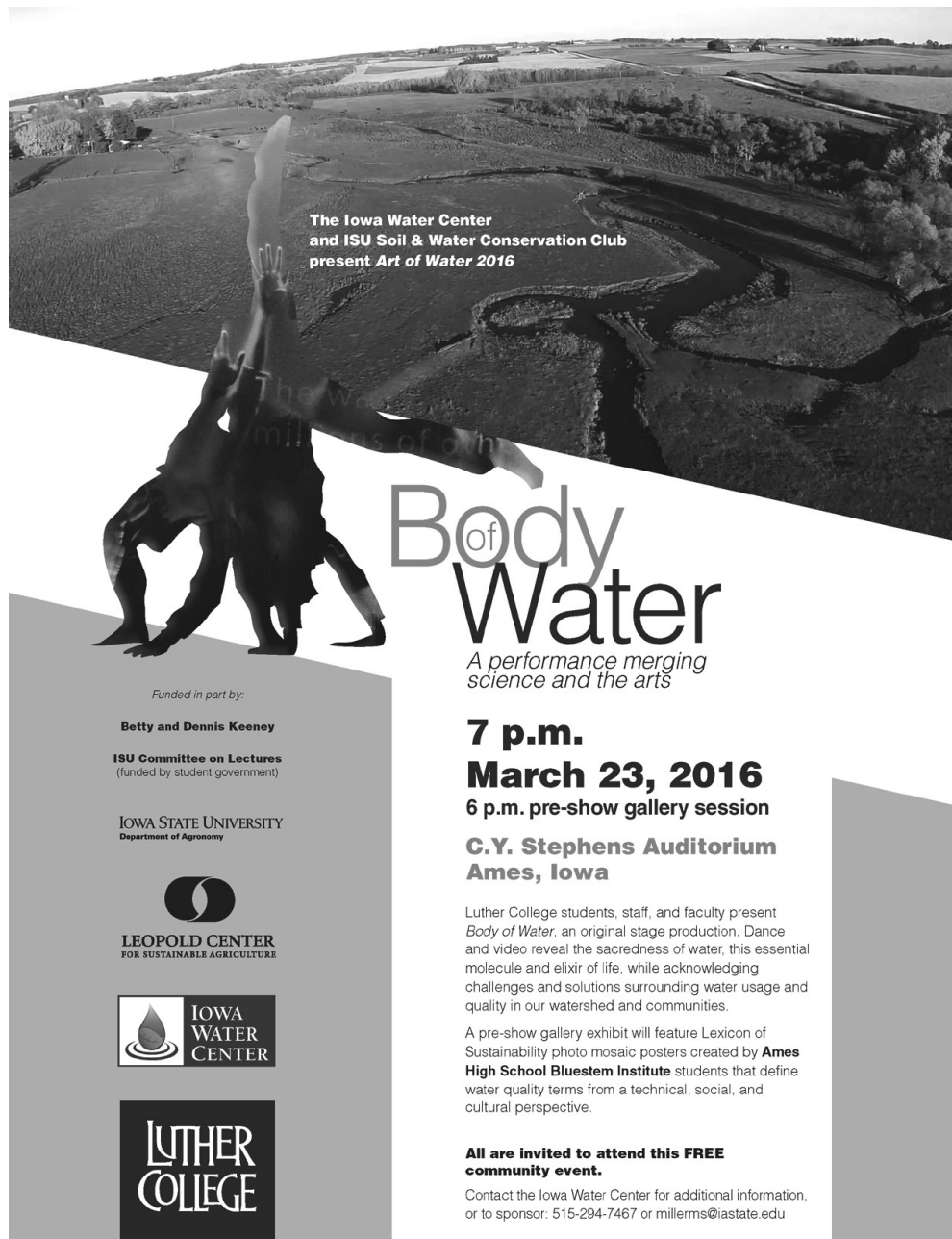


Figure 1. *Body of Water* poster design by Michael Bartels. Courtesy of Luther College.

As Jodi and Jane shared their research one day over lunch, they wondered: Could they partner to help each other? Could dance, usually considered an emotive form, be used to communicate science information? Could science provide an avenue for a broader audience to experience and value dance? Thus, the vision for *Body of Water* was born—a project and performance interweaving art and science.¹ (See Figure 1.)

*

This case study describes how our paths entwined in a performance, how collaboration instilled trust between our disciplines, how our vulnerability sustained our commitment, and, finally, how *Body of Water* impacted both audience and performers alike, creating connection points for new communities.

PARALLEL STREAMS

Jodi: I grew up on a 320-acre outdoor playground in scenic northwest Illinois, where I would lose myself in the grass and woods, amongst bugs, birds, and the occasional four-legged mystery. My siblings and I helped raise and care for cattle and hogs. However, the biggest draw, in the farm's center, was Lawhorn Valley Creek.

Traversing the creek from one end of the farm to the other, we discovered swimming holes, fish, and dragonflies. We spent hours catching crawdads, slowly lifting rocks to investigate clinging critters, and pursuing the ever-elusive water strider as it jetted with unmatched speed on the water's surface. In this place, my curiosity and affinity for the natural world was born.

I left home to pursue biology, eventually focusing on the littlest of life's creatures: microbes. Studying these organisms, unseen to the naked eye yet key to the function of all of Earth's ecosystems, fulfilled the curiosity I had experienced as a child.

After obtaining a PhD in bacteriology, I landed at Luther College, where I could study and share the wonder and awe of the



Figure 2. Oneota Flow. View of the Upper Iowa River from Phelps Park, Decorah, Iowa. Courtesy of Sarah Frydenlund.

microbial world with undergraduate students. This residential liberal-arts learning environment in northeast Iowa bore striking similarities to the rural hillsides, bluffs, woodlands, and winding streams of my home.

Jane: My passion for movement began near a stream that ran beneath an old wooden bridge on a dirt road a quarter mile from my farm home in Vail, Iowa. I improvised on the dry dirt floor of this outdoor studio, where the birds, bees, and plowing tractors were my musicians.

Because my mother endured the challenges of rheumatoid arthritis, I grew up helping her bathe, dress, clean, cook, sit, stand, and walk, and witnessed her restricted-yet-moving and mysterious body. Meanwhile, I experienced the capacity of my father's movements while joining him in calving, feeding, baling hay, fencing, bean walking, thistle pulling, and horse riding.

Inspired by the range of movement within the human body, I left home to study physical therapy, with my science teacher's

suggestion to pursue science: “You’ve got a brain, you might as well use it.” Yet, I was not *moved* by lecture halls and textbooks. Dancing, however, awakened my imagination and thinking. How was I not using my brain when I danced? I pursued dance and earned my MFA in performance and choreography. I became curious about renovating dance training to welcome all body types and abilities. The foundation for my research was developing principles and practices for MF, an experimental dance training curriculum at Luther College that focused on practicing embodiment, refining movement, and crafting expression (Hawley).

INTERMOLECULAR ATTRACTION

In fall 2000, we both joined the Luther faculty, in a learning environment where chance interactions between a scientist and an artist were not only possible but likely. Through faculty meetings, students we shared, and occasional encounters with our teaching and research, we became intrigued with each other. In 2010, we applied for and were awarded a dean’s office Teaching Partnership, which provided formal time and support for us to learn from each other’s teaching and generate ideas for interdisciplinary projects.

TEACHING PARTNERSHIP

Jodi: While taking part in MF classes, I was struck by the atmosphere in the dance studio, an open space with windows overlooking woods rather than the typical wall of mirrors (Figure 3). Students were comfortable and secure with the diversity of their bodies. No one lined up to follow the leader’s steps or took direction on how to point their toe or hold their body. In my more structured science classroom, students seemed less comfortable contributing. While the intent of the dancing was not always clear to me, it was thought-provoking; the degree to which students expressed themselves through body *and* words was intriguing.



Figure 3. Luther College, Center for the Arts, Studio One. Courtesy of Jana Lundell.

Jane: Sitting in science lecture hall, I noticed how different this arena was from the collaborative dance studio. Students sat in rows and dutifully took notes from overheads and PowerPoints at the front of the room. A substantial volume of information was covered; however, when Jodi lectured, she included metaphorical prompts and even *movement* to help students learn and absorb the information. Her teaching style enlivened the science lecture, and I recognized a rich potential for using movement to tangibly connect students to science information, awakening their imagination and thought.

ANALYSIS

In each other's classrooms, we discovered an unexpected parallel between our disciplines. As Jodi described the scientific method of

formulating a hypothesis, testing it, then analyzing the results to form a conclusion, dance students remarked, “That’s what we do every day developing movements.” Jodi had never considered that a dance score could be an experiment, and Jane had never considered that developing movement was like the scientific method.

DUAL DILEMMA

Jodi: As Jane and I were completing our teaching partnership, I received a phone call from Chad Ingels, an Iowa State University Extension watershed specialist. Ingels was helping to organize a group of area landowners to address bacterial pollution in a local stream. The stream contained high levels of fecal bacteria, an indicator of mammalian poop. Ingels asked, “Would you be interested in leading the water monitoring effort?”

Although my expertise was not in water quality, the work intrigued me, as it connected with my backgrounds in agriculture and microbiology. In addition, the small farm that my husband and I owned and operated was located within this watershed. In this case, twenty thousand acres drained into Dry Run Creek, which entered the city of Decorah through a popular campground and emptied into the upper Iowa River next to Luther’s campus (Figure 2). Could our farm be contributing to the pollution? I said yes to Chad.

Thus began a multiyear effort in which over fifteen undergraduate students climbed up and down stream banks in rough terrain and through noxious weeds to collect water samples from ten different sites between April and October over a range of conditions, including heavy rains (Figure 4). In the lab, we analyzed these samples for levels of bacteria and chemicals as well as tiny creatures that indicate stream health. We published and presented our work, and I developed several new Dry Run Creek labs and integrated them into my microbiology course.

During this process, we became *intimate* with our watershed.



Figure 4. Jacob Wittman (left) and Andrew Weckwerth (middle) measure water-quality parameters in Dry Run Creek, Decorah, Iowa, with biology professor Jodi Enos-Berlage (right). Photo courtesy of Luther College.

We learned to recognize the plant, animal, and topographical uniqueness of each site; where the water ran shallow, deep, smooth, turbulent, clear, or cloudy; where we could walk on rocks or get stuck in the mud; where the riverbed or banks moved in response to a flood; where the beavers built their dams; and where, after exceptionally heavy rains, the water at some sites ran reddish-brown between our fingers and smelled like manure. The vulnerability of this precious resource suddenly became tangible.

The level of concern increased as we became aware of additional data: (1) at least 75 percent of Iowa's surveyed waterways are consistently impaired for at least one of their uses (e.g., recreational contact) and almost 25 percent are impaired for drinking ("Iowa Assessment"); (2) Iowa is one of the top contributors of both nitrogen and phosphorus pollution in the Gulf of Mexico that results in the depletion of oxygen and *all macroscopic life in a five thousand to seven thousand square-mile area*, causing the dead zone, an ecological disaster of epic proportions ("Agricultural"); and (3) the vast majority of nitrogen and phosphorus pollution in Iowa comes from agricultural sources, the primary economic driver in the state ("Iowa Nutrient").

As a scientist, educator, farmer, neighbor, and water monitor, I was anxious for others to see the data and *feel* its impact but also appreciated that water quality is a complex and sensitive topic. Adding further complication is that science communication tends to be highly technical. In the necessary effort to be thorough and precise, the message can become inaccessible.

Jane: As Jodi was researching water quality, I was struggling with pervasive internal queries: Why dance? Why Iowa?

Though I had established the MF curriculum at Luther over fifteen years earlier, a majority of my colleagues, administrators, and prospective students still wondered *what* type of dance we were doing if we did not teach ballet, jazz, tap, and musical theater techniques. Many failed to understand the need to change the paradigm for dance training from a step-based repetition model to



Figure 5. *Dance Magazine* article. Courtesy of Silver Moon Photography.

conceptual-based practice. This shift toward a phenomenological perspective empowered students to become artists, guiding them to imagine and create rather than repeat and do.

The MF curriculum was gaining momentum in the professional dance world, and in 2009, it was highlighted and recognized in *Dance Magazine* as a “groundbreaking dance curriculum culled from somatic and scientific movement studies” (“Radically”). (See Figure 5.)

In 2014, at the Fostering the Future: Higher Education Dance Curricula Development Sessions, an invitation-only conference hosted by New York University’s Tisch School of Performing Arts and Movement Research, the MF curriculum was highlighted as one of twelve dance curricula in higher education currently in practice that addressed the needs for the year 2050 (“Dance”).

But, despite these national recognitions, how could the potential of dance as a discipline—and, in particular, Movement Fundamentals—be best realized at a rural liberal arts college in Iowa? To

address this question, I found myself searching for a mechanism that could explicitly test how dance could be applied to communicate ideas across disciplines. After all, MF dance courses focused on the *body* as a site for critical socially, culturally, ideologically, biologically, and psychologically embodied discourse through somatic-movement education and artistic expression. MF dance courses established ideal conditions for thinking across disciplines. They also included texts, which supplemented the practice-based studies and framed class investigations by addressing sociocultural perspectives, biological-anatomical understanding, race, gender, sexuality, health-wellness, nature, and the body in contemporary culture.

Further, I wanted to diversify our dance audiences. While performances in Decorah consistently attracted artists and niche members of the community, I felt a need to widen the audience appeal and expand dance sensibility to new attendees and nontraditional arts goers.

As I listened to Jodi share the watershed data from Dry Run Creek and Iowa's contribution to the dead zone, I, at first, felt upset but then inspired as I realized how we could help one another. By merging biology and dance, we could create a performance for both agricultural and urban audiences. We could share her research while emphasizing the emotional connection to water, a universal and necessary resource heavily impacted by human practices. Such a performance presented an opportunity to highlight Jodi's important findings, while at the same time diversifying the dance audience and communicating a vital message across disciplines.

CONNECTING SOURCES

Our lunch meetings generated a flurry of ideas. The more Jodi shared with Jane about the unique molecular characteristics of water and how bacteria devoured the oxygen in the dead zone, the more Jane visualized how movement could demonstrate this

information on an emotional level through the body. The more Jane shared how the science research could be visualized through movement vocabulary, the more Jodi could imagine how the data could move off the page and into the hearts of the audience. We soon focused our conversations on a full evening performance comprised of dance and video. Video would function as a medium to capture local waterscapes and sounds, key data points, and interviews with local water stakeholders, including farmers. Movement would embody human engagement with water, interactions between molecules, and the dramatic impacts of pollution. Our goal was to increase awareness and create an emotional connection to water for an audience that reflected the diversity of water stakeholders.

During the summer of 2014, Jodi teamed up with Ian Carstens, a recent Luther College graduate and videographer, to create the videos for *Body of Water*. After capturing footage of local water bodies, Carstens videoed Jodi narrating in multiple contexts: drawing water molecules on her chalkboard, highlighting data from her stream research sites, and tracing groundwater movement through an underground cave. Carstens then videoed interviews with water stakeholders, including farmers, urban dwellers, city leaders, local authors, artists, scientists, trout fishermen, duck hunters, swimmers, and others.

In their fields and at their kitchen tables, farmers shared their stories. Paul Johnson described Iowa's pollution challenges: "The toughest one and the one we have to deal with most in Iowa is what we call non-point source pollution, and this is the pollution that occurs when that raindrop hits the land."¹

John Lubke, a longtime organic farmer, spoke of how these challenges have increased in response to climate change: "When I was growing up [more than sixty years ago] it was my job to check the rain gauge after a rain. . . . I can only remember one time of seeing four inches in the gauge in the morning after an overnight rain, otherwise it was—you know—a quarter, half, or inch and a

half or two at the most . . . but now . . . it's 4 or 6 [inches]; all over the country it's that way."²

Many farmers spoke of conservation practices aimed to reduce the impact of raindrops. Grain and beef farmer Paul Hunter shared: "We've got some farms that have been no-till for fifteen years—we can get a two-inch rain and not a drop of water runs off."³ Challenges were also revealed: "I really like the cover crops . . . the challenge is some of the seed you get doesn't take off and grow like it's supposed to . . . and I spent forty-five [dollars an] acre on it. . . . I hope it works, I really do," remarked dairy farmer Dale Humpal.⁴

We also sought voices of women landowners. One elderly widow, who had put her entire farm in a prairie conservation program, consented to an audio recording, one that became a key component in the performance finale: "Because I was a woman . . . I thought it was just ideal for me—I didn't have to worry about renters and what was being done with the land. . . . Now, I would just be concerned about plowing it all up again; I just wouldn't like to see that done [softly giggles] I like it; I like the land."⁵

The video interviews then expanded. Ryan Bishop, a geologist and manager of a local cave, highlighted that our region "has karst topography; you can basically compare the bedrock to swiss cheese—it's full of holes."⁶ Carstens traveled to interview Kevin Stier, a Mississippi River boat captain from Dubuque, who spoke of urban pollution: "When I first started on the river, I ran trout lines, and if you didn't pull the trout lines at midnight or one in the morning, they would have so much toilet paper on them they would break—and we ate those fish—and it was just normal."⁷ David Faldet, a Luther colleague in English and author of a book about the Upper Iowa River, spoke eloquently: "We are water creatures; I'm 70 percent water, and the water I get all comes from the river basin. It all comes out of the same cool water that feeds the Upper Iowa and feeds local springs. So, whatever's in that water is in me."⁸

During one of the landowner visits, an exciting discovery

emerged: the family's son was a power paraglider. Thus began the development of one of the most memorable film sections in the performance. Through aerial footage, the camera followed drops of rain as they fell on Jodi's farm and moved through the watershed, the city of Decorah, the Upper Iowa River, and into the Mississippi. Carstens felt deeply inspired to follow them all the way down to the Gulf of Mexico, and on a spontaneous weekend whim, he did. His trip set the stage for Jodi's emotional final narration of that footage: When I touch the water flowing off my farm now, . . . I am thinking about all of the connections between those molecules . . . and it makes me realize that I'm touching the ocean.

COLLABORATIVE CONFLUENCE

As the work progressed, the collaborator roles changed and began to cross over typical discipline boundaries. Jodi became an interviewer, narrator, storyteller, and film director. Jane dove into research. She observed water in all its forms; took photos; read books, journals, and poems; and viewed documentaries. Jane also explored how to kinesthetically exemplify human-water interactions, from the mundane to the spiritual. Gestural patterns of brushing teeth, splashing in a puddle, washing windows, swimming in the ocean, experiencing a rainstorm, crying, making coffee, and a baptismal blessing became the artistic fodder for the dancers to create movement phrases. The dancers embodied the use of water and water practices and linked these gestural patterns to form solo dances so that when performed together, they revealed impressions about water not commonly felt or considered.

In the fall, Jodi entered the dance studio to connect with the sixteen college students who would become the cast for the *Body of Water* performance. She shared details of the molecular structure of water, its ground sources, how it moves over surfaces, major pollutants, and Iowa's Nutrient Reduction Strategy, a major state initiative aimed at reducing the amount of nitrogen and phosphorus

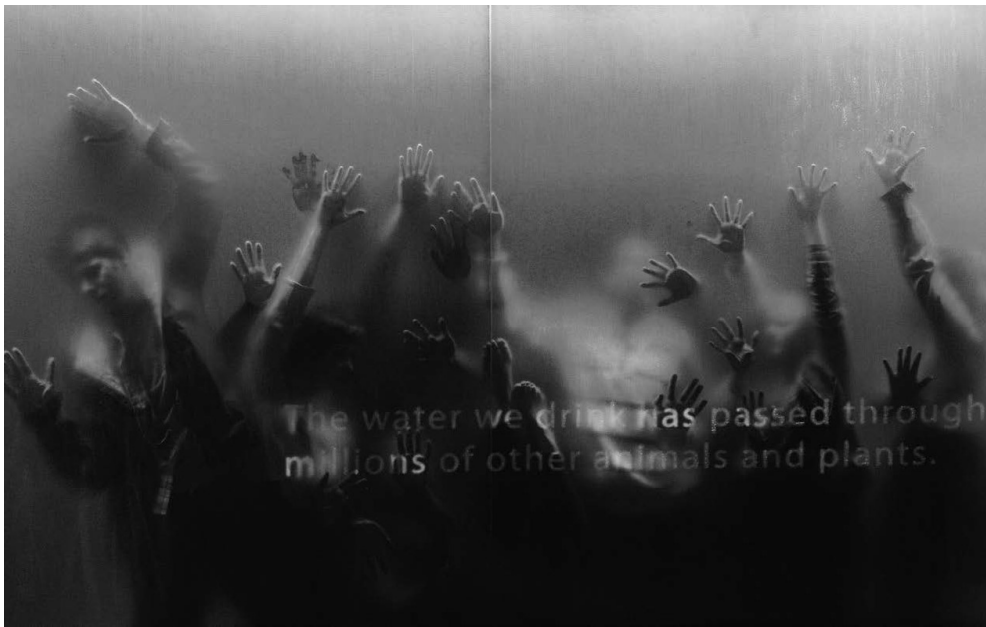


Figure 6. *Body of Water* performers at the National Mississippi River Museum and Aquarium, Dubuque, Iowa. Courtesy of Luther College Theatre/Dance.

fertilizer being lost down Iowa’s waterways. Ironically, it became clear that “nutrients” in this context referred to pollutants.

After Jodi shared her data from Dry Run Creek, everyone packed into vans and Jodi led a tour of the watershed, observing the thousands of acres of streams, woodlands, grasslands, corn, cows, and hog confinements. As the dancers got in the water to test it, they became inspired by doing science. A second field trip to the National Mississippi River Museum and Aquarium in Dubuque (Figure 6) mapped Iowa’s land share in the thirty-one-state Mississippi River watershed and illuminated Iowa’s disproportionate pollutant contributions. The dancers realized from the displays *Fish on Drugs* and *Frogs with Abnormal Growths* that what humans put into their bodies directly goes into the water and into all water life!

Armed with the science, the dancers developed specific movement vocabulary in response to their knowledge. Taylor Gomez described an example: “Jane would give us a task, like going to a body of water and creating a short phrase with the upper body

about how the water was moving . . . then we came together and tried our phrases in different formations and directions.”⁹

Jon Ailabouni, jazz improviser and composer, worked similarly with the musicians, producing complementary and novel moments. Alone and together, the musicians and dancers experimented with how rivers twist and turn, how water ripples and transforms, and how marine life within the Gulf of Mexico experiences the lack of oxygen. Movement phrases were also inspired by water creatures (e.g, the schooling of mackerel or the movement of a blue whale protecting her calf during migration). The dancers kinesthetically portrayed the science findings through images and actions that were sometimes difficult to watch.

For over six months, dancers talked, thought, learned, witnessed, and became water. As they embodied the impacts of pollutants on water and water creatures, this creative process revealed that humans play an abusive, destructive, and ignorant role in their relationship with water. This outcome contrasted with our earlier movement patterns, which emphasized our natural attraction to and daily dependence on this substance (Figure 7). The irony that we damage something so vital to our existence dramatically changed our thinking.

TRANSFORMATION

Suddenly, water was sacred, and dancers felt a new level of empathy (Figure 8).

Daily interactions with water became more meaningful. In the words of Sara Maronde: “Washing my face became a ritualistic act; stepping over a puddle would force me to pause about how the water got where it was and where it was going.”¹⁰ Marah Owecke went further: “My daily life shifted to being constantly aware of faucets, showers, sewers, drains, bodies of water, children playing in pools, and how much I depended on water.”¹¹ Dancers also altered their practices, as Michael Ehrecke highlights: “I took to



Figure 7. Marah Owecke, Holly Williams, Taylor Gomez, and dancers wash themselves. Courtesy of Luther College.

turning off the shower as I shampooed and conditioned my hair . . . and instead of leaving the water running while doing dishes, I filled the sink and used only that much for the day's damage."¹²

The experience also promoted a deeper "connectedness." "I have found myself sitting in front of maps and tracing the rivers, streams and deltas . . . the project brought into the forefront of my mind the idea of bodies of water physically connecting millions of people," remarked Travis Nietert.¹³ Danica Kafton commented: "I found a vital connection to water through my body . . . I became aware of how water travels through others to us and through us to others."¹⁴ For some, including Jana Lundell, the feeling approached the spiritual: "I became aware that this was a resource that I had been taking for granted most of my life . . . I never had thought of water as a source of true feeling, a vessel that could carry emotion."¹⁵

Composer/musician Jon Ailabouni reflected: "I was overcome



Figure 8. Michael Ehrecke's water mantra. Courtesy of Luther College Theatre/
Dance.



Figure 9. Malanaphy Springs, Decorah, Iowa. Courtesy of Ian Carstens.

by the realization that water is the ‘molecule of life’; that all life—in its vast immensity and with all its variety and complexity—is united by this infinitesimal element (Figure 9). This led to an urgent awareness of my responsibility for the water that passes through my domain and flows downstream to all living things.”¹⁶ Ian Carsten, videographer, revealed: “The nature of water’s interconnectedness has shaped my perspective on understanding conflict, responsibility and action/inaction. . . . I have begun to ‘feel’ the presence of water . . . I see it in living things and find myself moved to a place of empathy. . . . My sensitivities of body, heart, and mind have been forever changed by this project.”¹⁷

*

As Jodi witnessed these effects during two brief visits to the dance studio in late fall, she could sense that the intimacy she had experienced while monitoring Dry Run Creek had not only been transferred to the performers but powerfully magnified. If only a fraction of this emotional connection could be captured and conveyed to the audience, this project would be a success.

TURBULENCE

In January 2015, after almost a semester of working independently, Jane and the dancers met with Jodi and Carstens to share their work. It was not the climax moment and affirmation that we had envisioned. The dancers watched the final videos with confusion and uncertainty. From their perspective, the ten- to fifteen-minute videos seemed long, static, and motionless. The audience was coming to see a live performance, not a science lecture. Dancers worried that the videos would dominate and not captivate. Where was the dancers' semester of work supposed to fit? The video components, in their current forms, were not yet open to being interwoven with the dancers' material. Complicating this, Jodi and Carstens's time and energy for editing was nearly exhausted.

Jodi sensed a second problem. While she was moved by the choreography, she knew that her appreciation of the movements was in part because she understood the biological inspirations behind the movements. For example, Jodi knew that a mass of moving bodies was inspired by schooling fish; a series of movements cascading down a line of dancers represented a water ripple, and eight synchronous legs in the air portrayed an octopus. Would audience members new to this form of expression—including farmers and scientists—be able to access the choreography, receive the information, *and* understand dance? Scientists cannot use jargon with a lay audience. What does this mean for dance? If the audience left without a sufficient understanding of the science or appreciation of the dance, we would not have achieved our goals. The outcome: *Interdisciplinary collaboration is hard.*

Slowly, with dedication and meticulous effort, the performance came together. Sarah Frydenlund, a performance editor who was impartial to the dance and video components, helped the collaborators compromise. Films were broken into two- to five-minute pieces. Some were limited to audio only. Some sections were dropped entirely. The dancers layered and modified the



Figure 10. Turbulence. Courtesy of Ian Carstens.

choreography in order to help the concepts shared in the videos come to life in interesting, unexpected, and emotional ways. At the same time, having shorter video clips interwoven throughout the performance provided familiar handles to help the audience access and understand the choreography. The videos communicated scientific concepts and data. The movement scores included just enough cues to suggest meaning while protecting the integrity of dance as an art form. Music connected the components and added sensory layers. The process identified the attributes and limitations of each discipline and how they could complement each other.

BODY OF WATER

Muslin-layered “limestone” walls, indicative of Decorah’s geology, line the theater and angle up to what could be an altar. The audience waits in silence in what feels like a sanctuary. Steady drops from a one hundred and fifty-pound hanging block of ice accumulate into a pool of water in a large stainless steel bowl.

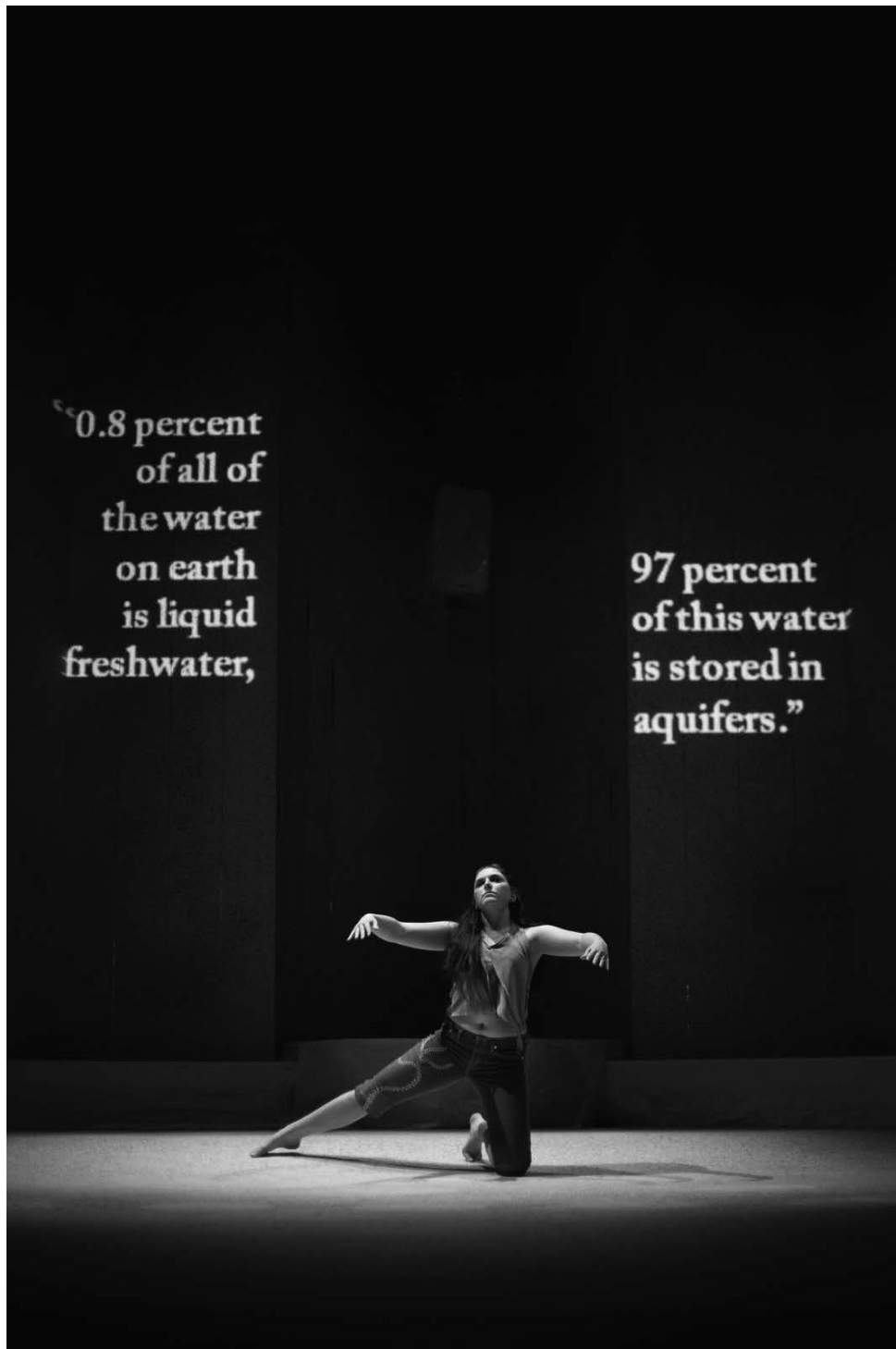


Figure II. *Body of Water* opening with Taylor Gomez. Courtesy of Luther College Theatre/Dance.

A single body lies splayed and barely lit on the floor (Figure 11). She begins to move, and reverberations from an electric guitar fill the space. The dancer repeats her movements and speaks of being water in all its forms. In a video, wind and water is heard as Jodi sits next to the Upper Iowa River and describes the human biological, innate attraction to water. The audience senses, hears, feels, and even imagines the taste of water. Dancers wash and chant their prayers over steel water-filled bowls, an ancient link to what is both familiar and mysterious about this substance.

Cylinders arranged in the shape of a water molecule elevate dancers in a mirage of the mundane: washing windows, playing in puddles, showering, swimming, canoeing, crying (Figure 12).

Music pulses, lights shift, and dancers submerge into the underwater worlds of an octopus quartet, a deep sea creature duet, and an alluring pair of sirens. Limbs arc and tumble, creating curvilinear patterns. Soaring lifts mix with thrashing turns, head dives, and flying catches.

The rat-a-tat-tat pattern of a drum rim shot sounds. A video shows Jodi at the chalkboard, drawing the hydrogen and oxygen bonds that make up a water molecule. Dancers animate these bonds (Figure 13).

Aerial views of the twenty thousand-acre watershed appear as the raindrop's journey is followed to the ocean. The lighting shifts and the scene is back to land. A pattern of movement ripples through sixteen bodies as a series of videos reveal Iowa's pollutants: from fertilizers to fecal bacteria, soil to street-car residues to lawn pesticides. A dancer now pauses on what looks like a bridge for a smoke (Figure 14). She flicks the butt into the river below.

Other dancers cross and toss a plastic water bottle, a Styrofoam takeout container, oil, paint, vomit; mounds of plastic fill the stage. The bridge breaks and pillar pieces and trash rise and roll over, under, and around the dancers' bodies.

A flood rushes downstage in unpredictable waves. The music builds and crashes to a halt and everything is again silent and still.



Figure 12. Jana Lundell and Travis Nietert in the “Molecular Mundane.” Courtesy of Luther College Theater/Dance.



Figure 13. Interacting water molecules. Courtesy of Luther College.

The sanctuary exhibits bodies as dead organisms are strewn across the space, entangled in trash, nearly touching the audience's feet (Figure 15).

An audio track begins: "Where do we go from here?"

All involved were challenged about how to conclude the *Body of Water* performance in a way that would inspire change in agricultural and urban practices and communal care of water. How could we move from a climax of pollutants and despair to an offering of hope without some feeling targeted? But after listening again to the interviews of the watershed community and reading Native American writings from a key source, we found a solution (McLuhan).

During the performance, an audio track restarts, with the voice of Doug Rossman, a scientist deeply familiar with Native American practices, reciting: "From traditional Cherokee—people who live in the southern Appalachian Mountains—it was a living thing—not just a—you know—a fluid part of the geology, but it was a living thing—and it had the power of healing."¹⁸



Figure 14. Christie Owens pauses for a smoke. Courtesy of Luther College Theatre/Dance.



Figure 15. Bodies strewn with trash. Courtesy of Luther College Theatre/Dance.

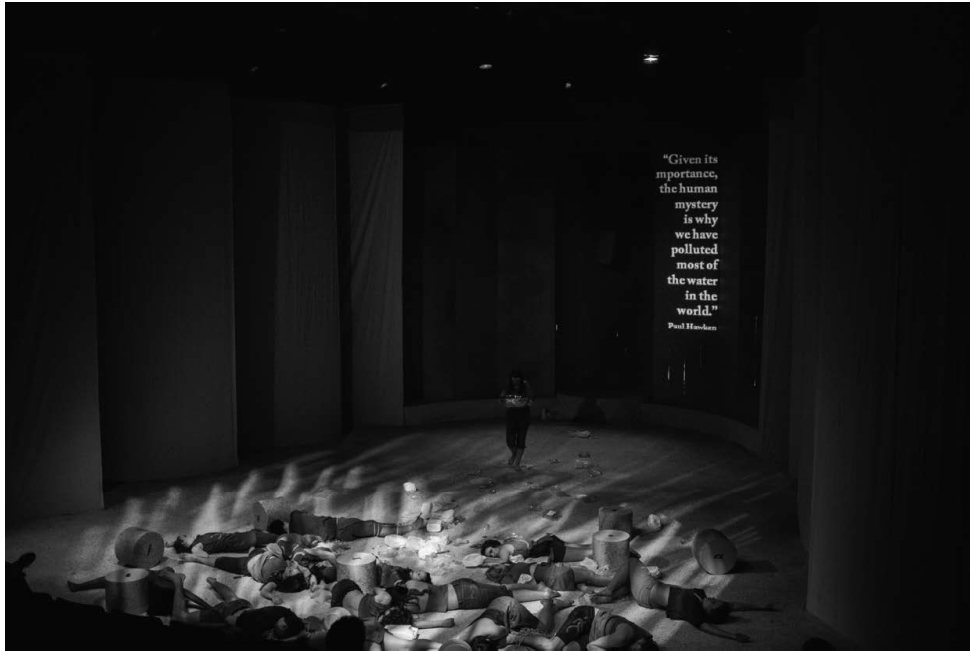


Figure 16. What is the molecule of Life Worth? Jennifer Schmidt and dancers. Courtesy of Luther College Theatre/Dance



Figure 17. Reflections. Courtesy of Ian Carstens.

A solo dancer returns and takes the silver bowl from the altar and begins to wash herself among the strewn bodies and trash (Figure 16).

The music begins to pulse and drive her baptismal shower. A wild wet dance brings a rain of renewal, and then darkness. In the dark, voices of farmers and naturalists describe their personal attempts to address water quality. Singly, the dancers rise to address the audience and link hands, recognizing that, in the end, humans cannot succeed by attempting to dominate or control but, rather, by harmonizing: seeing themselves as a part of natural systems.

OUTPOURING

Combining two seemingly disparate disciplines and media types, we took a risk making *Body of Water*. But while the project was an experiment with rural neighbors, community, colleagues, and students, the results surpassed expectations.

All five performances of *Body of Water* sold out. As seats ran out, audience members stood in the aisles, on the stairs, and on the catwalks. Farmers came and liked it. Science students were enthralled. Conservationists, urban leaders, city dwellers, outdoor enthusiasts, artists, writers, scientists, educators, and others made up one of the most diverse audiences ever at a Luther visual arts performance. Some people cried. Others exclaimed: “Take it on the road” and “Our Iowa legislators need to see this.” The *Des Moines Register* ran a feature article highlighting how the work connected to a major water-pollution lawsuit in the state (“Dirty”).

The talkbacks following each performance provided the audience with additional opportunities, as the dancers could share candidly how they developed empathy by *embodying* water molecules, rivers, pollutants, and dead organisms. Several dancers from farm families explained how the project prompted new conversations. As James Mueller indicated, “I began inquiring as to land practices

being used on my family's farm. . . . My mom and I talked about the creek that ran through our property and what a joy it was to be able to cup your hands and drink water bubbling up from the earth. From that conversation began a movement within my family of how the use of our farmland can more closely reflect our love of the land, while also respecting the agricultural and financial needs of our land renter."¹⁹

After the performance, the codevelopers felt *relieved*. The experiment that had taken the better part of a year had worked. Audience members revealed that they had gained new or enhanced appreciation for the extent of water pollutants, their sources and impacts. Payton Schultz remarked, "After watching the performers 'pollute' the water on stage, I felt a sense of guilt, realizing that I have been that careless person in the past, letting myself pollute waterways in ways that I hadn't realized."²⁰ Jake Seibert was more specific: "After seeing the performance, I do worry more about field runoff leaching its way into the watershed, culminating into dead zones like in the Gulf of Mexico."²¹ Dairy farmers Dale and Mary Humpal reflected on their operation: "I am more aware and think about our water supply and how what happens on our farm could affect people miles and miles away."²²

Body of Water prompted a new way of thinking about water or water practices, or new plans for action. Schultz said, "I knew that going forward I would be much more conscious of how I use and treat water."²³ Landowner Paul Frana reflected: "I guess I look at the creek running through our farm differently now. We have a group of beavers that have dammed up parts of the stream in the last year, and though it has made some things a lot more difficult for us . . . I know they are helping filter the water running through our land much better than any structure we could have built."²⁴

Some attendees' plans for action became very specific. Steve Hopkins, Nonpoint Source (Pollution) coordinator for the Iowa Department of Natural Resources, indicated that, "*Body of Water* helped me to spend a lot of time thinking about the creek closest to

my home in Newton, Iowa. It has the unfortunate name of ‘Sewer Creek.’” He went on to describe that due to his prompting, a local high school class had begun “conducting water monitoring of the creek and submitted an application to the US Geological Survey to officially change the name . . . to ‘Cardinal Creek’ . . . expected to be officially approved this summer.”²⁵

Finally, additional commentary highlighted the collaborative nature of a project bringing science and the arts together. Chad Ingels, the former Iowa State University Extension watershed specialist who made the initial phone call to Jodi to start the project, shared, “I was moved by the connection of agriculture, water, and the arts. I had never really considered that dance could be used to educate an audience about water and the connections to the land and farmers while entertaining them as well . . . I have been involved in water-quality improvement efforts for a long time, but after seeing *Body of Water*, I find myself being more comfortable using creative means to talk about water and connections to what we do on the land.”²⁶

Holly Moore, associate professor of philosophy at Luther, shared reflections that went beyond water: “I was really energized by seeing what’s possible when people invest in deep and authentic interdisciplinary collaboration. The communal nature of the performance gave me hope.”²⁷ Sara Maronde spoke from her perspective as a dancer: “The biggest and most enduring impact of my participation in *Body of Water* is . . . the integration of two distinct forms of creative research . . . I felt the power of the two women who initiated this project . . . their compromises and adaptation of their own work styles to meld into a single integrated idea and performance.”²⁸

A RIPPLE EFFECT

Body of Water created a ripple of inspiration, spurring additional performances beyond Luther, a production of a DVD of

the premiere, and a variety of new public outreach mechanisms, including educational workshops and this book chapter.²⁹ The outcomes of the *Body of Water* project continue to engage local landowners, community members, and college students, in addition to women's groups, retirees, and K–12 students (where science, technology, engineering, and math [STEM] courses are being refocused into science, technology, engineering, arts, and math [STEAM]), as well as broader regional and national audiences through programs such as the Iowa Water Conference and National Water Dance. The codevelopers remain humbled and inspired by the results of this experiment.

REFLECTIONS

Jodi: *Body of Water* was the most substantive and difficult project thus far in my academic career, stretching me beyond my training and experience and cementing a lasting influence: collaborations generate a product more powerful than the sum of their parts. Science is essential but not sufficient. Understanding and motivation are intimately tied to human emotion. I now seek the power of the arts to communicate science, whether in my research laboratory or classroom. Working with artists is invigorating! I am convinced that reaching out to engage with the other is the key to solving our most vexing problems as humans. Let us be inspired to continue.

Jane: Since I can remember, I have loved contemplating Albert Einstein's quote: "The most beautiful thing we can experience is the mysterious. It is the source of all true art and science. He to whom the emotion is a stranger, who can no longer pause and stand wrapped in awe, is as good as dead; his eyes are closed" (Einstein). The creative process and outcome of *Body of Water* confirmed for me the importance of embodied learning. When I *think* through my body and *feel* what I am studying, I learn differently and something mysterious happens. I become immediately aware

of how everything relates and that extraordinary partnerships are possible. My eyes are open.

NOTES

1. Paul Johnson, personal communication to author, June–Sept 2015.
2. John Lubke, personal communication with the author, June–Sept 2015.
3. Paul Hunter, personal communication with the author, June–Sept 2015.
4. Dale Humpal, personal communication with the author, June–Sept 2015.
5. Rose Frana, personal communication with the author, June–Sept 2015.
6. Ryan Bishop, personal communication with the author, January 2016.
7. Kevin Stier, personal communication with the author, June–Sept 2015.
8. David Faldet, personal communication with the author, June–Sept 2015.
9. Taylor Gomez, personal communication with the author, July 18, 2017.
10. Sara Maronde, personal communication with the author, July 18, 2017.
11. Marah Owecke, personal communication with the author, July 18, 2017.
12. Michael Ehrecke, personal communication with the author, July 18, 2017.
13. Travis Nietert, personal communication with the author, July 18, 2017.
14. Danica Kafton, personal communication with the author, July 18, 2017.
15. Jana Lundell, personal communication with the author, July 18, 2017.
16. Jon Ailabouni, personal communication with the author, July 18, 2017.
17. Ian Carsten, personal communication with the author, July 18, 2017.
18. Doug Rossman, *Body of Water* (performance), June–Sept 2015.
19. James Mueller, personal communication with the author, July 18, 2017.
20. Payton Schultz, personal communication with the author, July 18, 2017.
21. Jake Seibert, personal communication with the author, July 18, 2017.
22. Dale and Mary Humpal, personal communication with the author, July 18, 2017.
23. Schultz, personal communication with the author, July 18, 2017.
24. Paul Frana, personal communication with the author, July 18, 2017.
25. Steve Hopkins, personal communication with the author, July 18, 2017.
26. Chad Ingels, personal communication with the author, July 18, 2017.
27. Holly Moore, personal communication with the author, July 18, 2017.
28. Sara Maronde, personal communication with the author, July 18, 2017.
29. Acknowledgments: We thank David Faldet, Bob Larson, Eric Baack, Andy Hageman, and Lise Kildegard for their helpful editorial support and guidance.

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