

NDSU NORTH DAKOTA STATE UNIVERSITY SPRING 2006 magazine



Hand Holding (Cont.)

John Sargent 2006



contents

Editor's note	5
Letters	6
Contributors	7
On the cover	8-9
Raising a red flag on the wrong problem Essay by Tim Sellnow	10-13
First ride Equine course "Colts in Training"	14-21
Ballroom dancing NDSU alumna's glamorous pursuit	22-25
Eat, drink and be wary Etiquette expert and the mealtime interview	26-31
Excerpts United States Poet Laureate Ted Kooser	32-33
Poems on the bus Short-short poems	34-35
The cell game Technology brings students inside cells	36-39
Behind the scenes The guys behind the virtual cell project	40-43
Privileged Essay by Gene Berry	44-47

NDSU Volume 6 Number 2 SPRING 2006 magazine

Editor

Laura McDaniel

Editorial staff

Char Goodyear
Dan Koeck
Kathy Laid
Carol Renner
Tammy Swift

Art direction/design

Julie Babler

Consulting editor

Sally Ann Flecker

Address changes

Send address and name
changes to:
office@ndsualumni.com

Letters

Unless noted “not for publication,” communications to the editor are considered for publication, often in a condensed version.

E-mail: *laura.mcdaniel@ndsu.edu*

PO Box 5167
Fargo, ND 58105

Fax: 701.231.1989

Volume 6, number 2

NDSU magazine is published twice a year, in spring and fall, by North Dakota State University, University Relations, PO Box 5167, Fargo ND 58105. NDSU is an equal opportunity university.

President

Joseph A. Chapman
joseph.chapman@ndsu.edu

Provost and Vice President for Academic Affairs

R. Craig Schnell
craig.schnell@ndsu.edu

Vice President for Student Affairs

Prakash C. Mathew
prakash.mathew@ndsu.edu

**Vice President for Research, Creative Activities
and Technology Transfer**

Philip Boudjouk
philip.boudjouk@ndsu.edu

Vice President for Agriculture and University Extension

D.C. Coston
d.c.coston@ndsu.edu

Interim Vice President for Business and Finance

Broc Lietz
broc.lietz@ndsu.edu

Vice President for University Relations

Keith D. Bjerke
keith.bjerke@ndsu.edu



editor's note

Many years ago in a tiny little rambler that was home to a family of six, a girl got a beautiful doll buggy for Christmas. Made of a fine vinyl, black and red plaid, it was roomy enough for all the girl's dolls, their blankets and perhaps a stuffed animal and some tea set dishes.

As Christmas Eve does, the evening came to an end too soon, and the girl reluctantly went to sleep. As little girls do, she had to get up in the night for a trip to the bathroom, and she wheeled her precious new vehicle into the tiny powder room along with her. When it came time to get the buggy out of the bathroom, somehow what had rolled in so nicely was not as easy to decamp. The more she struggled to steer the buggy, calm the dolls and still reach the door handle, the more commotion she caused. The banging of the buggy off the bathroom walls woke her father, who quickly came on the scene and got both child and buggy back to bed.

This isn't the story my family tells about me, but I wish it were. I love the little girl who didn't think it the least bit silly to take her buggy to the bathroom. They tell of a girl less sweet, a little more bossy, stubborn. Supposedly I told a neighbor to keep his trap shut when he was eating, but this is said to have occurred when I was so young that it had to be a phrase picked up from one of them. And that time I took it upon myself to brush my teeth with Ivory soap, scraped onto my brush from the bar by the sink because I couldn't reach the toothpaste. I'm sure it did look funny to see a child blow bubbles from an internal soap supply. At least I brushed.

I've been thinking about childhood lately, trying to remember how a child's mind works, as I adapt to living with stepsons. A boy who thinks I can't tell he hasn't brushed his teeth because they're still orange

from eating Cheetos. His brother who wants to know if I've made the nectarine ice cream we now have every 4th of July for anyone else but them. Both of them tickled every time I get a good zinger in on their dad. They're wise when it comes to figuring out where in your heart they reside. But they're just not that good at practical matters, say, the logic behind closing the back door in the winter, good posture or tidying up a room.

I guess by definition kids wouldn't be kids — happy and carefree — if they were aware of heat bills, car problems, cellulite, sump pumps, but don't you wish you'd known then what you know now? If only toddlers understood how great it is to take naps, be transported like royalty in a stroller, and eat without calculating nutritional value and justifying calories.

I think I've met a kid who gets it. A senior at North Dakota State University, who seems to have understood all these things without trading in his youthfulness. He's been the student body president, is a member of all kinds of student groups, gets good grades. He moves comfortably in circles many adults find intimidating. For fun, last summer he climbed Mt. Rainier. Poise, he's got. I was recently most impressed by a thing he knew to do — something I so didn't know at that age. He asked for advice. Maybe I'm just a little star struck because the person he asked was me, but I'm telling you, when I was in college, I did not have the savvy to seek wisdom, much less the contacts to know who the heck to consult. These days I ask for advice like crazy. But I just learned that inspiration can come from someone half my age.

Thank you for reading.

Laura.McDaniel@ndsu.edu

letters

My husband, Anthony, and I have enjoyed receiving and reading the NDSU magazine. You always have such interesting stories. It is a story from the recent issue that prompted me to write this letter. The article by Laura Oster-Aaland was simply outstanding.

Laura and I have been friends for a number of years, and we also are former colleagues at NDSU. My praise of the article, however, goes beyond that friendship. Laura's article was so personal and reflective, and her words articulated very clearly her passion for her work. It seems to me that often we know "what" people are doing, but not necessarily "why." Laura took a risk in sharing her personal story and motivations, but what better way is there to connect the personal and professional parts of ourselves. Laura is an exemplary model of this.

As a friend, I feel like Laura revealed a lot of herself in the article, and I got to know her a little bit better by reading it. As a fellow higher education administrator, Laura's words reminded me of the importance of reflecting on what we do, and the reasons why.

Shari Ellertson

contributors



Eugene Berry (*Privileged*, p. 44) is a serious microbiologist, which is to say he has an extremely impressive resume, pages long, listing degrees, funded research projects and articles published in scientific journals with titles like “Insertion of bovine sMT3B gene in the NS2-3 region of a cytopathic bovine viral diarrhea virus genome.” He earned his doctorate in biology at Northeastern University in Boston, and has been on the faculty at North Dakota State University since 1987. He’s earned many of the prestigious teaching awards on campus, including a seven-year string of preferred professor

awards from the student honor group Mortar Board. His daughter, Andrea, lives in Pullman, Wash., and is starting a career in massage therapy. Daughter Marissa, Phoenix, teaches 4th grade in Glendale, Ariz.



Tim Sellnow (*Raising a red flag*, p. 10) grew up in the northern Minnesota town of Brainerd. He earned his bachelor’s degree at St. Cloud State University, master’s at North Dakota State University, and a doctorate at Wayne State University, Detroit, Mich., all in communication. He has taught in the Department of

Communication at NDSU for 18 years. Since 2000 he has worked on funded research projects with the Department of Homeland Security, the United States Department of Agriculture, and the Centers for Disease Control and Prevention. His wife, Deanna, also is a professor of communication at NDSU. Their daughter, Debbie, is a sophomore in Political Science at the University of Minnesota and their son, Rick, is a sophomore at Fargo North High School. In his spare time, Tim enjoys working on his father’s ranch in Wyoming, running marathons, and playing hockey.

A fourth-generation North Dakotan and third-generation rodeo cowboy, **Shadd Piehl** (*First ride*, p. 14) grew up near the Mouse River south of Minot, North Dakota. He has been a ranch hand, stockyard bird, hog hide shaver, warehouse lumber, teacher, and rodeo cowboy. As a saddle bronc rider, he competed for North Dakota State University in intercollegiate rodeo and was twice the Great Plains Region’s bronc riding champion. Shadd has taught English in Belcourt and Casselton, and teaches at Aaker’s Business College in Fargo. He lives in Fargo with his wife, Marnie, and sons, Owen, Wyatt and Ryder.



on the cover



James Rosenquist, (*North Dakota*, b. 1933)
EAST (*Horse Blinders Series*), 1972, silkscreen, collage, lithograph, ed. 37/85
Gift of Wells Fargo, 2004.001.0001
Collection of the Plains Art Museum, Fargo ND

"[My art is] about contemporary life. It's like sitting and unraveling your sweater; all of a sudden your sweater comes off and the whole atmosphere changes because of one loose thread." - James Rosenquist

The title of this work, East (Horse Blinders Series), is Rosenquist's reference to the science of peripheral vision, which many modern artists felt played a significant role in the viewer's perception of a work of art. This work is one of a series of four prints that emulate the "wrap-around" effect of Rosenquist's room-sized painting, Horse Blinders, created in 1968-69. The painting and prints are composed of four related parts labeled north, south, east, and west. Rosenquist suggests the content of his work is not in the images he paints, but, rather, the relationship of the images is the subject matter, and the subject matter is what blossoms into content.

JAMES ROSENQUIST CAREER HIGHLIGHTS

- 1933 Born in Grand Forks, ND
Parents Swedish and Norwegian descent
- 1942 Moves to Minneapolis at age 9
- 1952-54 Attends University of Minnesota. Paints commercial
billboards during summer for General Outdoor Advertising
- 1955 Receives scholarship to Art Student League, New York
- 1957-59 Paints billboards in Times Square
- 1961 Paints Zone, the first studio painting to use commercial
techniques and imagery
- 1962 First solo exhibition
- 1963 Shows at Museum of Modern Art, New York
- 1964 Joins the prestigious Leo Castelli Gallery
- 1965 Exhibits the now famous F-111
(86-foot long, room-sized installation mural)
- 1968 First retrospective, at age 35
- 1986 F-111 sells for \$2 million
- 1996 Museum of Modern Art acquires F-111
- 2003 The Guggenheim Museum tours major retrospective curated
by Walter Hopps
- 2004 Commissioned by the Plains Art Museum for a North Dakota
themed mural
- 2005 North Dakota State University bestows Honorary Doctorate

ROSENQUIST ARTIST RESIDENCY BEGINS IN FALL

NDSU has established the James Rosenquist Artist Residency Program for Visual Arts. “This residency program allows us to honor Mr. Rosenquist, who is one of the greatest artists this state has ever produced,” said Thomas Riley, dean of arts, humanities and social sciences.

The program, scheduled to begin in fall 2006, will bring a guest artist to campus for a semester, providing studio space, equipment, a stipend and accommodations. During the time in residence, the artist will develop his or her work and interact with students and the community.

RAISING A
RED FLAG
ON THE
WRONG
PROBLEM



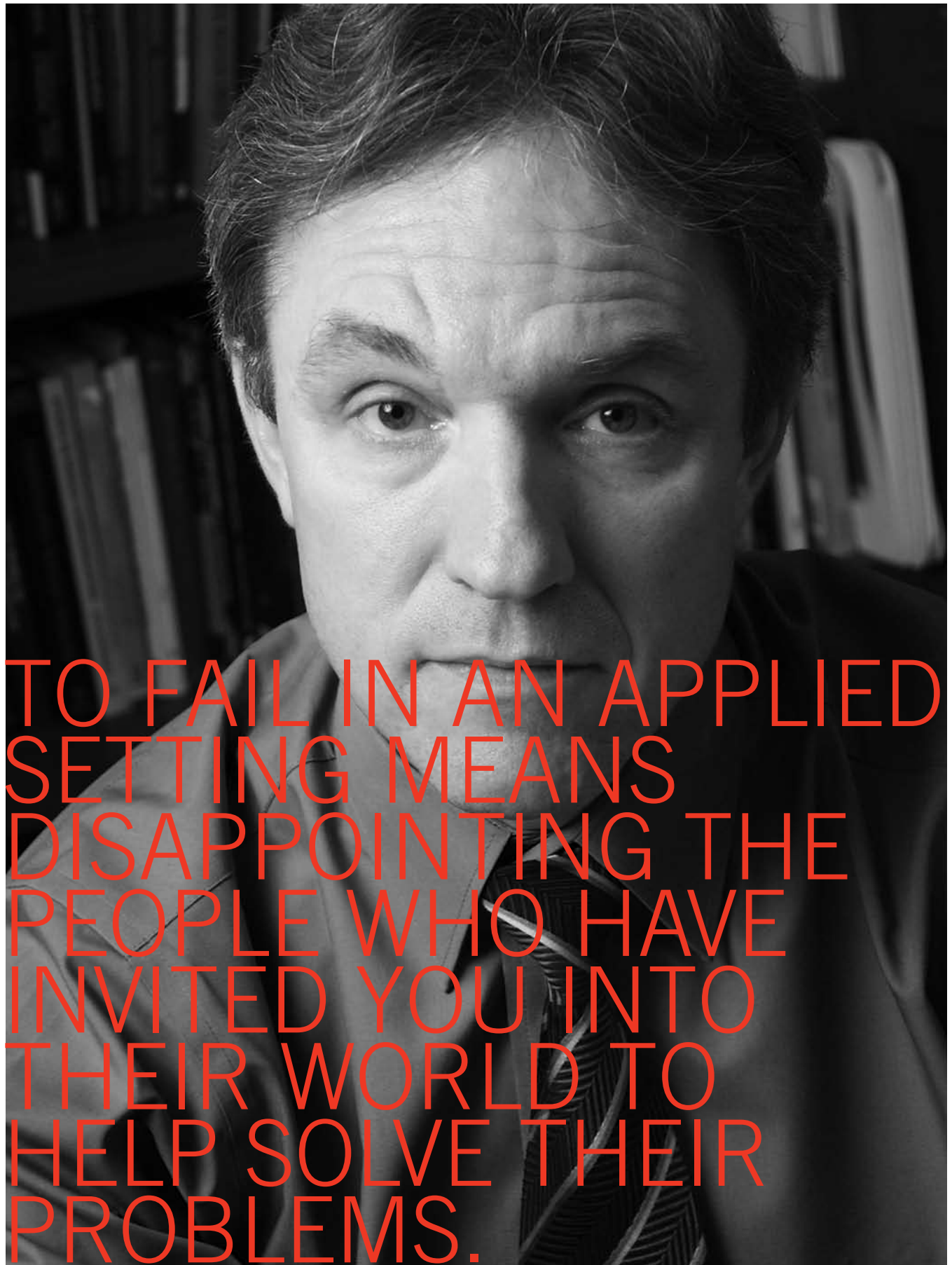
an essay « *Tim Sellnow*

The enthusiasm that inspired us for 18 months vanished instantly. The moment my research partner, Steven Venette, and I learned a second plane hit the World Trade Center, we found a television set and improvised a set of rabbit ears so we could watch a fuzzy picture of the coverage. We sat watching and writing in a cramped Minard Hall office, surrounded by stacks of printouts that represented nearly two years of work. We were writing a final report for a study designed to enhance risk communication in America's major ports. When the first tower collapsed upon itself, Steve and I shared a look that said we had worked for nearly two years on a federally funded project that solved precisely the wrong problem. We continued writing, more as a diversion than anything else. We still needed to finish the report, but the project had lost some of its relevance.

As we watched the second tower crumble, we recalled the forewarnings we heard consistently from agents at the ports

we visited. Inspectors for the United States Department of Agriculture's Animal Plant Health Inspection Service from nearly every port told us they knew something big was going to happen — they feared a major terrorist attack on American soil. This persistent warning only inspired us to work harder on the project, hoping to contribute in some way to the agency's vigilance. On September 11, I recall saying, "this must be what they meant." Steve nodded, turned away from the television, and we returned to writing the report.

The entire nation mourned in the hours and days after September 11, 2001. For Steve and me, however, the dejection crossed the boundaries of our personal and professional lives. We had visited every major port in the United States. We introduced the best risk communication theory and practice to the United States Department of Agriculture. Like every agent we interviewed, we wanted to make a positive difference. On September 11, we realized the true



TO FAIL IN AN APPLIED
SETTING MEANS
DISAPPOINTING THE
PEOPLE WHO HAVE
INVITED YOU INTO
THEIR WORLD TO
HELP SOLVE THEIR
PROBLEMS.

threat. I can only hope I will never feel such dark disappointment again in my professional life.

We had experienced the best laboratory to study risk and crisis communication in the real world. We listened to agents describe the challenges they face and responded with strategies for meeting those challenges. The benefits of working in an applied setting, however, come at a cost of added pressure. To fail in an applied setting means disappointing the people who have invited you into their world to help solve their problems.

Risk and crisis communication scholars describe three types of failure. A **Type One error** occurs when we advise a group to prepare for a crisis and the crisis does not occur. A **Type Two error** — the one I consider the worst — happens when we fail to recommend preparing for a crisis that does occur. A **Type Three error** transpires when we obligate considerable resources to solving precisely the wrong problem. Our goal as risk and crisis specialists is to help organizations dedicate the right resources to the right problems. While this may sound reasonable, the uncertainty that naturally surrounds potential crises makes achieving this goal very difficult.

Steve and I did finish the report. We were even awarded funding for a new project designed to study communication surrounding resource allocation in American ports. Still, the disappointment lingered.

We got a little enthusiasm in December of 2001 with a rushed trip to the Centers for Disease Control and Prevention in Atlanta. The true magnitude of the situation became frighteningly clear to me as my CDC escort and I walked quickly past pushcarts loaded with small pox vaccine. The carts had been assembled soon after September 11. They were stored temporarily in the hallways outside the auditorium located deep within the campus of the CDC. Inside the auditorium, the nation's best minds in disease diagnosis and epidemiology meet regularly to plan for crises and to coordinate their response to major disease outbreaks. As representatives from many CDC departments shuffled into the auditorium, I felt a little out of place, but also highly relevant. The CDC wanted to debrief about their communication during the Anthrax crisis of 2001, and I was one of three communication scholars invited to attend.

Approximately 30 CDC directors and selected staff members participated in the day-long debriefing. The process began with group discussions. The three communication specialists spoke briefly and were then rotated among the groups to share ideas and recommendations based on their areas of specialty.

The discussions went on for hours. Highly technical and procedural aspects were hotly debated. After hours of intense deliberation, one moment crystallized in my memory. A simple, honest, and straightforward comment from Dr. Julie Gerberding, the director of infectious disease for the CDC during the anthrax threat. Her department was criticized, somewhat unfairly, for communicating inconsistent messages early in the crisis. During a group discussion, I asked a question about coordinating information among CDC staff members, which sparked a defensive comment from a department member. Gerberding politely interrupted, reminding the staff member that the goal was to learn whatever they could so they would be better prepared for future crises. From that point on, the group's attitude shifted from defensiveness to genuine concentration on the task at hand.

I was impressed with Gerberding's authentic interest in and commitment to the entire debriefing process. Her comment assured me the process was worthwhile. Her words also instilled a sense of patience and candor on the part of her staff. In that moment, I learned a lesson about effective management in post-crisis communication situations that I never forget.

Not surprisingly, several months after this meeting, Gerberding was named director of the CDC. She has a reputation for strong management and communication skills.

I honestly can say I do not remember working harder than I did during those nine hours in the CDC auditorium. Perhaps it was the demanding schedule. Maybe it was the stressful nature of the situation. Perhaps the meeting had instilled me with a sense of redemption. Whatever the cause, I can recall having run full marathons without being as exhausted as I was after that CDC debriefing. When we were finally dismissed from the meeting, I passed on having dinner with the other communication specialists. I walked across the street to the hotel, sat down on my bed and fell asleep at 8 p.m., still wearing my suit. I slept hard for nearly six hours. This may have been the most soundly I had slept since September 11.

My research agenda has continued to expand since attending the CDC meetings in December 2001. Venette and I have been to the CDC repeatedly to work on a variety of projects since 2001. We also have teamed with William Njanje, associate professor of agribusiness and finance at NDSU, on a major project funded by the Department of Homeland Security.

I am grateful for the opportunity to share my research in ways intended to enhance national security. In the sinking moments of September 11, I could not have imagined so many new opportunities to work with national security would emerge.



First Ride

CAJUN

By a quarter past two, eight colts and eight riders are in the North Dakota State University Equine Center indoor arena warming up for Friday's class. Some riders are mounted and walking their horses around and near obstacles like barrels and cones, while others are on foot lunging their colts, exercising the horses in a circle with a long lead rope. A stocky little bay tries to stop trotting. He is given encouragement to keep moving with a tap on the rump from a Plexiglas stock stick. When the rider decides it's time to end the exercise, he cues the bay with a verbal "whoa" before pulling the lead rope and making the horse stand and face.



The rider then rubs his horse down. This is called sacking out. The goal is to have the bay stand still while being handled. He touches the horse's neck, back, legs, chest, head and rump with his hands and a stock stick with a plastic bag tied to the end. He waves his hat and arms, pulls and slaps his stirrup leathers and saddle. This commotion teaches the horse not to spook. It also takes the edge off the young pony. After all, the objective is to ride these colts without them bucking or otherwise throwing a fit.

It's good watching, and five or six people are in the stands observing the array of horses moving in the arena. There are bays and sorrels, roans, a paint, one that's maybe got a little appaloosa in it, and a fancy looking *tiger-striped dun*. Most are Quarter horses, some are larger three-year-olds, and others are slighter, shorter two-year-olds. Some have been worked a lot. A few seem pretty green. This is also true of the student riders. Some are accomplished hands, while others appear to be learning along with their horses.

This is Colts in Training, Animal Range Science 396, a two-credit, three-day-a-week class restricted to students who have a two- or three-year-old horse. The student riders also must have completed Basic and Intermediate Riding, part of the series of courses offered in the Equine Studies program.

In all this commotion one horse stands out. He's the only one not saddled, and his coat looks pure white, an unusual color. He's well built for a two-year-old and moves cat-quick on the *lunge line*. This is Cajun.

FIRST RIDE

Catty is a term often used for a lively horse. Waspy is another word that comes to mind watching this colt move. A waspy horse is fast, but somewhat erratic. Something else sets Cajun apart, he's never been ridden. A first ride reveals to a trainer what kind of work lies ahead. Theoretically, any horse can be trained, some just take longer than others. Today, fourth-year equine studies student Abra Grosz plans on putting Cajun to the test.

Grosz moves with the sure grace of an experienced horse person. Raised on a dairy and horse ranch near Hazen, N.D., she's trained five or six horses back home. When she bought Cajun three weeks before this class began, he hadn't been *halter broke* or *gelded*, now he is both. A palomino, he will probably darken to a cream color as he gets older. With the performance bloodlines of *Frenchman's Guy* on the *top side* and *Three Bars* on the maternal, Cajun's breeding means he should have the power and speed to excel in a rodeo event such as barrel racing, which is Grosz's plan. "He's bred to the nines as a barrel racing horse," she says, her fair complexion already flushed with the groundwork of the day's class. She is excited about his potential and eager to start riding him, to see how much Cajun has learned in the last three months.

While Cajun is being saddled, Tate Eck demonstrates how to make a horse walk in a straight line. Eck, a former member of the university's rodeo team, rides one of the colts along the arena's fence. When the

horse tries to turn away, the 35-year-old rodeo cowboy turns the colt back into the fence, cues with a verbal cluck of the tongue, and makes the horse walk forward. Eck, lean and tall for a bronc rider, slouches in the saddle. He wears a black cowboy hat above a headset with a microphone. His voice projects over the arena's sound system:

"Keep your left hand on the top of the rail [of the fence]. Keep a loose rein," he instructs, his eyes focused on the horse's head. "When they want to turn away, pick up on your reins and turn them back to the fence. They'll get good at doing this at a walk and then at a trot and then at a lope. When they get good at that, pick a spot across the arena and make them go straight to that spot."

Meanwhile, Grosz has saddled Cajun and is back in the arena. She has shed her jacket for a duck-canvas vest and tied her light brown hair up in a ponytail. It's time for Cajun's training to move into the round pen, a necessary element in any horse classroom. As the name suggests, a round pen is a small enclosure; this one's made of nine ten-foot fence panels and a five-foot gate. Once inside, Cajun cannot run away. This isn't the first time he's had lessons there. He's already learned to give and bend or flex his neck to pressure from a halter rope and reins, to wear a saddle, to move out with verbal cues and pressure from the trainer, and to stop and stand when asked. But is he ready to be ridden?

Grosz, frowning in concentration, smoothly switches Cajun's halter for a *snaffle bit* with *split reins* and tightens the front cinch on her saddle. By now Eck has joined Grosz and Cajun in the round pen and stands to the front and left of the horse and rider. Grosz makes Cajun turn his head a little to the left, puts her left foot in the stirrup, and ever so gently stands in her stirrup until all of her weight is on Cajun's left side and she is standing upright. Although they both are still, the stiffness of Cajun's stance and Grosz's back shows the tension. When Cajun doesn't bolt, Grosz decides to commit herself to the ride. It is a delicate maneuver. Once a rider swings a leg over a horse, there is no going back. Grosz slowly





G

GLOSSARY

Lunge: Exercising a horse in a circle from the ground.

Lunge line: A long rope used for exercising a horse by someone on foot.

Ring snaffle (snaffle bit): A training bit designed to exert less pressure on a horse's mouth.

Split reins: Reins consisting of separate lengths of leather strips.

Withers: The high point of a horse's back, located at the base of the neck and between the shoulder blades.

Bogging: Said of a horse bucking with its head between his forelegs.

Halter broke: A horse that is gentled and trained to lead from the ground.

Gelded: Neutered.

Top side: The sire's side in horse breeding pedigree.

Frenchman's Guy: A Palomino stallion born in 1987, he was the nation's No. 1 Barrel Racing Futurity Stallion in 2001. A proven competitor with proven pedigree, his Web site is www.frenchmansguy.com.

Three Bars: A famous pedigree for Quarter horses, it is claimed that Three Bars has had the greatest impact on the Quarter Horse breed of any horse in history. Three Bars left his mark in racing, halter, cutting and other arena performance events. Web site: www.foundationhorses.com/threebarsped.htm.

Off side: The right side of a horse, a rider typically mounts and dismounts on the left side.

Tiger-striped dun: A tan-colored horse with stripes on lower legs and a dark dorsal stripe from mane to tail.



forks her leg over her saddle and sits down, finding her off stirrup with her right foot. Again, Grosz pulls on each rein in succession, making Cajun turn his neck around in each direction.

Teaching a horse to give to pressure, to turn by flexing the neck, is an important part of training as it will help a horse move naturally. Eck also preaches flexion as a safety measure. A horse that will flex will also one-rein stop, that is stop all forward movement and give to a rein pulled to one side or the other.

“Ok, he’s seen enough,” says Eck, deliberately speaking into the microphone so the whole class can hear his instructions. “Let’s move him out. Bring his nose around, ok, hindquarter, front quarter.” Eck conducts Cajun’s movement with the five-foot stock stick, waving it toward the horse’s rump to get the hind legs moving first. As Cajun’s neck is already turned to the left, the horse has no choice but to move his front legs to complete an equine pirouette. “Make him move his hindquarter, then his front quarter. Cue him with your foot,” Eck instructs. “Nice turn, he’s athletic with his front feet. Nice turn, now hold him.”

After making Cajun stand for a minute, Grosz and Eck ask the colt to do the same turns in the opposite direction. They want him to move on cue, to flex and turn with his neck and hindquarters. Grosz praises the colt, bending forward in her saddle and speaking into his ears, rubbing mane and *withers*. They switch direction again, making Cajun go the other way. The next step is to get him to move forward out of the turn; the physical cue will be a squeeze with both heels.

“Now let’s get him to move out. Move the hindquarter, ok keep him going in that direction. Now squeeze him into it. Oh, he’s got it,” Eck exclaims, watching from the center of the pen. “Speed won’t be a problem with him. What we’re teaching him is gas pedal. Keep a loose rein. Squeeze him into a canter. If he’s going to try anything, it’ll be now. Let him go. He’s going to get tired of loping around in here. Let him get that energy out. Ok, now he’s slowing down ... keep him moving ... ok, now stop ... nice.”

Again they have the horse stand for a minute and repeat the same exercise in the opposite direction. This time, when Cajun canters, it isn’t as fast and Eck asks Grosz to keep him going. They want Cajun to move on cue, to give to pressure from foot or rein, to work collectedly, fluidly and not spastically.

“Squeeze him. He’s not willing to go 100 miles an hour now. ‘This is work,’ he’s saying. Squeeze, cluck, spank. Remember always in that order.”

Four or five laps to the right and Grosz stops Cajun, lets him stand another minute, and they repeat everything to the left. This time Cajun moves out nicely and then as Grosz squeezes and clucks, asking for the trot, he ducks and tries to turn back. Grosz, who has been waiting for such a move, spanks Cajun on the rump with the end of her reins driving him forward.

“Watch him,” Eck says. “Keep him moving. Oh, he’s a catty sucker ... keep him moving. Ok, stop him. That was an excellent first ride. Good job, Cajun.”

Grosz, relaxed now and smiling broadly, dismounts and leads Cajun from the round pen. “See, I told you I wasn’t going to get bucked off,” she tells one of her classmates.

THE WRECK

Cajun’s first ride went so well on Friday that Grosz repeats the lessons on Saturday. Again, Cajun works fine, perhaps even better than the day before.

For the third ride on Sunday Grosz does everything the same, puts Cajun through the paces: *lunges* him, sacks him out, saddles him, puts him in the round pen, lunges and sacks out again, and tries to step aboard. Cajun waits until Grosz is at her most vulnerable. With his rider standing in her left stirrup, just starting to swing her right leg over the saddle, Cajun comes uncorked, driving Grosz face first into the arena dirt.

Like all good cowgirls, Grosz thinks she wants to get right back on, but after three hours, her nose is still bleeding. A visit to the emergency room reveals the damage – a broken nose and dislocated jaw. Not much can be done for a broken nose. With her jaw realigned, she is advised not to ride for a few weeks and given a prescription for pain medication. It’s advice Grosz doubts she can follow. Two weeks is a long time for her colt to go unriden.

Although he was worked from the ground, no one rides Cajun in Monday’s class. On Wednesday Eck takes his microphone headset off and rides Cajun in the round pen. “I can ride those two-year-olds no problem, but he tried me,” he recounts. “I went to fling my leg over him, and he went to it. He’s athletic; he really tried to buck me off.”



PRETTY BUCKY

By the following Friday's class, Grosz, whose pretty face is still a bit puffy, is determined to ride Cajun again. A few onlookers sit in the stands near the round pen. One woman has a recorder ready to videotape the class.

"Is everybody expecting a rodeo?" Grosz asks wryly as she leads Cajun by the fence and into the arena and the round pen. Despite the joke, her determination shows in her expression and the assured way she handles Cajun. She is serious about the training, and she wants to get it right.

Once in the round pen, Eck demonstrates from the ground how he wants Grosz to make Cajun flex his neck completely around to the left while mounting. So if he bucks, he can only go in a tight circle — unless he pulls the reins from her hands.

"How does he feel?" Eck asks. "Tight? No? Ok. Feel him. If you feel that hump in his back, you know he's getting ready."

On this, his fifth ride, Cajun works nicely. He walks, trots, lopez in each direction, stops, flexes his neck fluidly to the left and right. After twenty minutes, Grosz steps off and leads Cajun from the round pen. She spends a few minutes praising her colt quietly while patting him on the neck.

Eck, who has been instructing from horse-back, rides over to the pair. He covers his mike and leans from his horse, talking.

Later, Eck says he told Grosz that Cajun looked wound up, stiff. He advised her to keep Cajun moving in the arena, not to try too much. "You know how a horse will twitch his hide to get rid of flies? Well, his back was doing that but there weren't flies. He was nervous."

Outside the round pen in the big arena, Grosz makes Cajun flex his head almost all the way to his left shoulder. She gathers her reins and steps up on him. She hesitates a bit in the left stirrup before swinging her right leg over the saddle. Cajun tries to move forward and is only able to crab around in a tight circle. Grosz steadies then asks him to move out.

As she rides past the stands, she calls out to the woman videotaping the session. "Hey, Mom, I didn't break my face today."

While Grosz rides Cajun, Eck keeps instructing the rest of the class on lateral movement, making their horses step sideways. "Don't cheat your horse, tell 'em you're a better horseperson than you are. They won't know the difference. We're working on their transmission. We're trying to get that gear box going."

Suddenly, Cajun, who has been asked to move from the trot to the lope, comes unglued. He takes large frog hops, *bogging* his head, and hitting the ground hard. Three jumps and he's almost to the middle of the arena, the other horses scatter. Grosz, ponytail whipping, being flung impossibly forward with every jump, tries to stay aboard by leaning back and pulling Cajun's head up.

Over the sound system, Eck's voice booms, "One rein stop! One rein stop!"

Grosz pulls hard on the right set of her split reins. Cajun's head comes around, and he stops bucking. Standing, head bent around so his nose is almost touching Grosz's right foot, he looks like a coiled spring. Later Grosz will joke with a classmate about becoming a bronc rider, but it doesn't appear that she really enjoyed the ride.

"One rein stop," continues Eck, his voice calmer now. "That's why we've been working on that so hard. You've taught him one rein stop. That's your safety. He gets going a speed you don't want, one rein stop."

"Now that you've lost that left rein," Eck tells Grosz, who in the excitement had dropped it completely, "go ahead and step off on the right. Now check your saddle. You might want to move it back, tighten it up. And like all good horse people, get right back on."

Grosz does just that; she climbs back on. It looks like it's going to be a long semester in and out of the classroom for her and Cajun, a lot of work and pain for a two-credit class.

FLY WRINKLES

After Cajun's bucking exhibition, Grosz opts for discretion and decides her horse needs to go back to ground school. For the next couple of weeks she stops riding Cajun altogether and continues the class on foot. They worked and worked and Cajun came around.

Now, three weeks later, Grosz is back riding Cajun, who appears to have lost much of his nervous, waspy energy. He's more controlled, collected, working for his rider and not against. Maybe he's a little behind the rest of the class, but he'll catch up. As for Grosz, she's having fun working with her colt again.

"She put the time in and that's what it took," Eck says. "It's like night and day. All horses are different. For him it took another couple weeks of work on the ground to get those fly wrinkles out."

— story by Shadd Piehl; photos by Dan Koeck



Ballroom Dancing

It's the first night of a regional ballroom dance competition being held at the University of Minnesota's McNamara Alumni Center, a geode-shaped building that rises from the campus' East Bank like a strange pink gem. Inside, the McNamara's soaring,

hemlock-plank ceilings and asymmetrical windows provide an elegant backdrop for ballroom dance. But the audience is pleasantly down to earth. People lumber in from the cold in lumpy ski jackets. Kids chase each other around folding chairs as if at a church supper. A humble chair by the coatroom acts as a hairdressing station, where female contestants have their hair coaxed into twists and curls. Earlier in the evening, while kids competed on the dance floor, parents yelled out their numbers in support.

The adult contestants are glamorous. When dancing the waltz, the women's long, frothy skirts swirl around their legs with each graceful step. For the Latin numbers, the women change into strappy, sequined little numbers held together by Lycra and sheer will. Spray-on glitter sparkles from their shoulders and hair. Their stiletto-heeled shoes would be tough to walk in, much less dance in. Even amid these exotic creatures, Lynn Helm Kohlasch stands apart. Warming up before her round with husband and dance partner Frank, she wears a gray Seattle sweatshirt over a crystal-studded, tomato-red dress. The two spin through a few dance steps. Stop and reassess. Repeat. She has worked her whole life for moments like this.

Dance coaches say it takes at least two years for a dance partnership to jell. The Kohlasches have reached that stage. Lynn and Frank move with a dramatic flair and synchronicity that reveals countless hours of rehearsal. Frank, relatively dressed down in black slacks, black shirt and red mock turtleneck, is the ideal foil to Lynn's glittering figure. He bends her into a deep dip, whirls her around and lowers her into a split, managing to make it all look effortless.

Their specialty is international Latin, which includes the cha cha, rumba, samba and pasa doble — the bullfighter's dance. The four dances





photos by bill alkofer



are performed back to back, then capped off with the jive, a hopped-up form of swing. The jive's roots are closer to Harlem than Honduras, but it demands similar speed and stamina.

Kohlasch and her husband have a lot of company these days on the ballroom dance floor. In the past two years, membership in the U.S. Ballroom Dance Association has doubled. At least a quarter of the group's current members are college students or younger, and many participate in DanceSport – ballroom's sexy and competitive cousin. In fact, ballroom's promoters are lobbying to make DanceSport an Olympic event. Accordingly, they've adopted international regulations and a stringent formal format for national competitions. Top-level dancers must possess the artistry of a ballerina and the athleticism of a gymnast. A contestant can be docked for a trifling error.

Oddly enough, it was the fall of Communism in one part of the world that led to the revival of ballroom dance in another. After the Berlin Wall fell in 1989 and the USSR dissolved two years later, many exquisitely trained ballroom dancers moved to America for the chance to earn a better living. They arrived ready to compete and to teach, and soon names like Ivanenko and Demidova dominated American ballroom competitions. In Russian-owned studios, pupils witnessed displays of finesse and flourish Americans hadn't seen since Fred Astaire.

Meanwhile, American pop culture in the mid '90s offered up movies like "Swingers," a swing-themed Gap ad, and retro big bands on the radio. Young Americans, quick to latch on to a trend, hit the dance floor. Suddenly they understood what their grandparents already knew: organized dance moves could be fun, and a great way to meet the opposite sex. A few years later, ABC began airing *Dancing with the Stars*, the reality show in which has-been celebrities paired up with professional dancers in efforts to outrumba each other. As critics scoffed, the show's ratings soared. Popular films like 2004's *Shall We Dance?* and the documentary *Mad Hot Ballroom* fueled the fire.

Tonight's competition is less to crown the next Fred and Ginger than to encourage dancers to participate. Even so, it's stressful. Judges circle the floor, shifting their gaze from contestants only long enough to scribble on clipboards. After each round, they hand their results to the scorekeepers, or "scrutineers," who crunch numbers at a long table.

Although well conditioned, the Kohlasches are winded after their Latin and jive numbers. The lightning-fast jive is exhausting – especially against 20-year-old dancers who are ballroom veterans. But the Kohlasches wouldn't want it any other way.

Lynn's story follows the well-worn premise of high school girl who doesn't make cheerleading squad, then finds her true path somewhere else. In her case, the somewhere else is a drill team, where she discovers a love of dance. While studying speech and mass communication at North Dakota State University, she dances every chance she gets. She joins Orchesis, the campus dance troupe; founds the Gold Star Band's first dance line; and studies Broadway-style jazz and tap on the side. A job brings her to Minneapolis, where Lynn eventually finds her way back to the dance floor. She also finds Frank, a chemist-turned-law student who, fortunately, loves dance as much as she does. They marry in 2004.

Ballroom is a rewarding mistress, but it's also a demanding one. After working all day – Lynn as an independent marketing consultant, Frank as a management analyst – they practice three nights a week. Dance classes can cost \$95 an hour; a bejeweled gown, \$1,000. Now the Richfield, Minn., couple has added another commitment to their schedule. They have formed a company, Minnesota PerformDance Productions, with aspirations to produce Broadway-style dance shows in Minneapolis. A Christmas 2006 show is already in the works, with plans for top-tier ballroomites, jazz and tap dancers and a Rockettes-style precision dance ensemble.

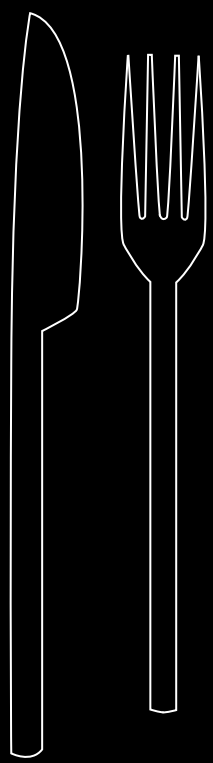
Besides running things behind the curtain, the Kohlasches also will dance in front of it. They will move in unison, performing the steps they've practiced hundreds of times. Lynn will extend her long limbs artfully and sway her hips to the Latin beat. Then Frank will twirl his wife around and lower her into a dip so deep it makes your back ache just watching it.

It's all just part of the dance.

— T. Swift







Tall, slim and sandy-haired, Anthony P. Cawdron is partial to perfectly tailored suits and silk pocket-handkerchiefs.

He possesses a veddy British wit. His accent has softened slightly in 15 years of living in America.

He has spent six of those years at Purdue University, where Cawdron plans dinners and events at the university's presidential residence. On one such occasion, he'd planned a formal dinner with his usual eye for detail, making sure the courses flowed seamlessly and the silver and china gleamed.

But then Cawdron's staff reported something that shocked the most jaded among them. Even Cawdron – who has witnessed distinguished guests chucking toothpicks on the floor like barroom peanuts and using knife handles to clean out their ears – was appalled. In the midst of the meal, as guests murmured appreciatively over good wine, one man suddenly grabbed a fistful of the creamy linen tablecloth and used it to blow his nose. Loudly.

Ever the gentleman, Cawdron took it in stride. After all, the only thing worse than having bad manners is letting the guest know how bad his manners are. So he continued to make sure the wine glasses remained full, the service remained seamless and the guests – even the nose-blowing guy – remained content.

If not to the manor born, Cawdron could take excellent care of someone who is. An Air

Force brat, he traveled extensively with his family as a child. The early exposure to travel, dining and hotels prompted him to pursue a hospitality career.

Cawdron proceeded to build a resume that included turns as an assistant butler at Winston Churchill's former birthplace, a restaurant manager and a faculty member at a Swiss hotel school. As head butler at London's Sutton Place, he worked with several members of the Royal Family, including the Queen, Prince Charles, the late Princess Diana and the late Queen Mother.

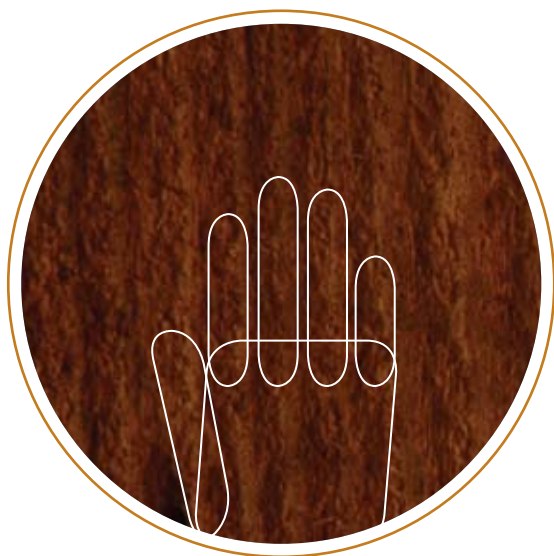
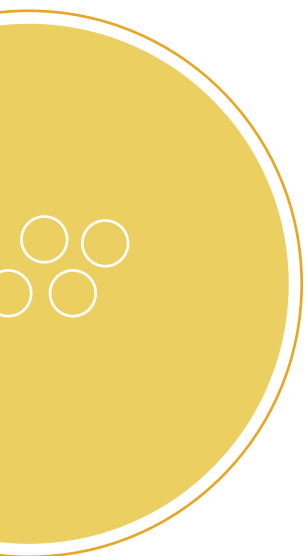
Through a faculty exchange program with Iowa State, he wound up in the land of corn and cattle in 1990. After the exchange ended, he became event coordinator at ISU's president's residence. When ISU president Martin Jischke was hired to helm Purdue, he and his wife Patty asked Cawdron to come with them.

Today, in addition to his event-planning duties, he instructs hundreds of Purdue students each year on the intricacies of proper service and business etiquette. Occasionally he takes his lecture on the road.

Which is why he's at North Dakota State University's Alumni Center, teaching students the art of the business handshake and which wine glass to use. Because – in this post-charm school era – there aren't that many opportunities to learn business etiquette. Cawdron keeps the proceedings light with his arsenal of amusing stories and Old World charm. It helps break the tension of getting through a meal that could make Miss Manners fumble: hard rolls, French onion soup capped by a stubborn slab of melted cheese, chicken Alfredo atop slippery noodles, runaway peas and a dense wedge of cheesecake.

But by meal's end, Cawdron's mission is accomplished. The students have been drilled in everything from appropriate dinner conversation to the art of genteelly cutting cherry tomatoes. They leave the dinner armed with a pocket-sized etiquette book, the confidence to face their next business dinner head-on and a minimum of soup stains on their shirts and ties.

Jolly good show.



PALM PILOT

Cultivate a handshake that's firm, not bone crushing, timid or lingering. "Gentlemen: Don't have one handshake for men and another handshake for women. That's actually sexist. Have a good handshake for everyone."

- Do not stick your hands in your pockets. That gesture says: "I'm not interested in meeting anyone."
- Americans are so obsessed with personal space that we'll often stand too far apart when shaking hands. As a result, we may wind up grabbing each other's fingers – "which feels strange," Cawdron says. Step toward each other for the handshake, then step apart to visit.
- Beverage napkins serve double-duty: They protect your host's furniture when you set down a drink, and they allow you to discreetly blot sweaty palms before shaking someone's hand.

THE DRINK TAKES THE MAN

- When moving from reception area to dining room, leave behind whatever drink you were sipping. Otherwise, "People will think you need that drink to get through the evening."
- Wait to drink until everyone has been served at your table – unless you're sipping water.
- A series of wines may be served throughout a formal meal. The smaller glass, located closest to you, is for white wines, which go with the earlier courses of the meal. The larger wine glass will hold red wine. If servers are offering refills, don't try to drain each glass. "If halfway through the meal, yours is the only voice you can hear in the room, this is your cue to stop drinking."

HARD TO HANDLE

- If an appetizer looks difficult to eat, politely decline.
- Approach salads – with oversized greens, oozy cherry tomatoes and pesky croutons – with caution. If salad greens aren't torn into bite-sized pieces, it's perfectly acceptable to cut them with your entrée knife.
- Make educated decisions when ordering foods during an interview meal. You don't want to spend more energy on de-boning a whole broiled fish than on impressing your host.
- Round foods such as peas and berries are notoriously difficult to eat. You'll find yourself chasing that last blueberry around the plate, hoping to nudge it onto the fork with your finger when no one is looking. Instead, either use your spoon to help move the uncooperative food onto your fork or to gently spear it with a fork while holding it still with your spoon.





WHEN IN ROME ...

- If you're stumped over which fork to use or what to do with your napkin, discreetly watch the host.
- It can be embarrassing to order a five-course meal, only to learn everyone else is ordering salad. If you have to order first, ask open-ended questions to gauge what your host typically eats.
- Know the etiquette rules of different cultures. In Asian countries, it's considered a compliment to the chef to slurp your soup. In France, you won't get a bread plate, so you're expected to rest your roll on the paper-covered tablecloth.

TABLE-READY

- Worried you'll sip out of your prospective employer's water glass? Think "BMW." B stands for your bread plate on the left, M represents the main plate and W symbolizes your water glass on the right.
- When going through a buffet line or serving yourself family-style, eat everything you've selected. "Particularly if you travel in countries where food is considered to be a rarity or luxury, and a large percentage of the population doesn't have enough food to eat, it is considered very bad manners to be seen wasting food."
- As soon as everyone is seated, place napkin, still folded in half, on lap. The open side should face you, so you can use the inside of the napkin.
- Eat bread by breaking off bite-sized pieces and buttering each individual piece at a time. Always spoon soup away from you. Rather than hunching over the soup bowl to avoid tie splashing, sit up straight, fill the bowl of your spoon sparingly and bring the soup carefully to your mouth.
- Thank servers for doing something for you. Otherwise, when you want something later in the meal, they'll ignore you.
- Cawdron's rule for disposing of pits, gristle and other things you don't want to swallow: "The way it went in is the way it comes out." That means removing it with your fork and placing it on the side of the plate or beneath a garnish. If eating olives by hand, you may discreetly remove the pit with your cupped hand. Never spit food into your napkin.

- When making conversation, avoid the usual hot-button topics: politics, sex, religion, money. And steer away from health, lest you invite a hypochondriac to fire off a litany of complaints. Cawdron advises sticking to safe topics – travel, weather, area of study. "I know it's boring, I know it's a cliché, but at least it's a good start."
- After the meal, your napkin should remain folded in half and look relatively clean. "If it's wearing more makeup than you, if it's concealing large amounts of gristle, mashed potato and chewing gum or it looks like you just washed the car with it, that's not the impression you want to leave."

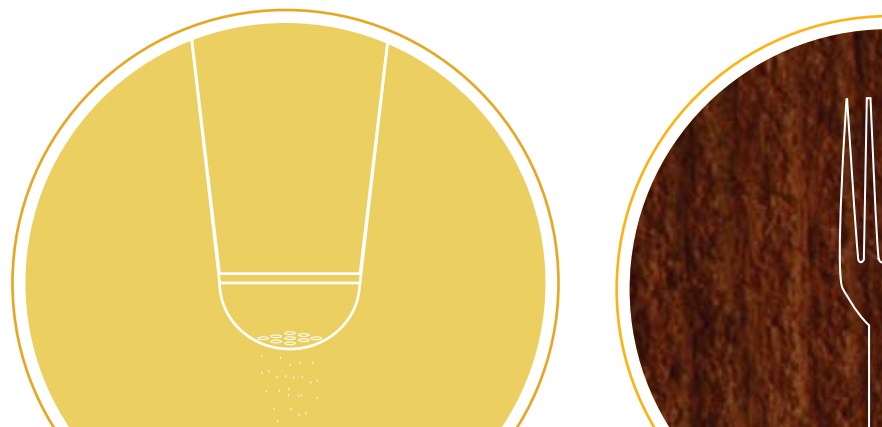
YOU ARE HOW YOU EAT

- When faced by a lot of silverware, start at the outside and work in with each course.
- There are two acceptable styles of dining: American or European. The European style consists of keeping the fork in your left hand as you cut, assemble and eat each piece. The knife remains in your right hand and may be (subtly) used to move food onto the fork. Legend has it the European style was created so both hands were visible at all times, rather than reaching under the table for daggers or poison.
- "Silverware is one of the things that people do use to make a judgment about you and the table manners you have," Cawdron says. He tells of an American spy who parachuted into France during World War II. Although the spy was dressed as a Frenchman and spoke perfect French, Germans nabbed him when they saw how he gripped his utensils.
- When finished, place knife and fork together at about the 4:20 and 5:25 positions on the plate, with the knife on the right side and fork tines facing up.

WELL-SEASONED

- Always taste your food before seasoning it. Some large corporations will even cull out job candidates who salt before tasting. "They basically say you're not analyzing the situation before you make a decision."
- Likewise, some interviewers will judge how you open your sugar packet. "If you tear off the sugar top completely," Cawdron says, "you won't get the next interview." Leave the empty packet on your cup saucer or your bread plate.

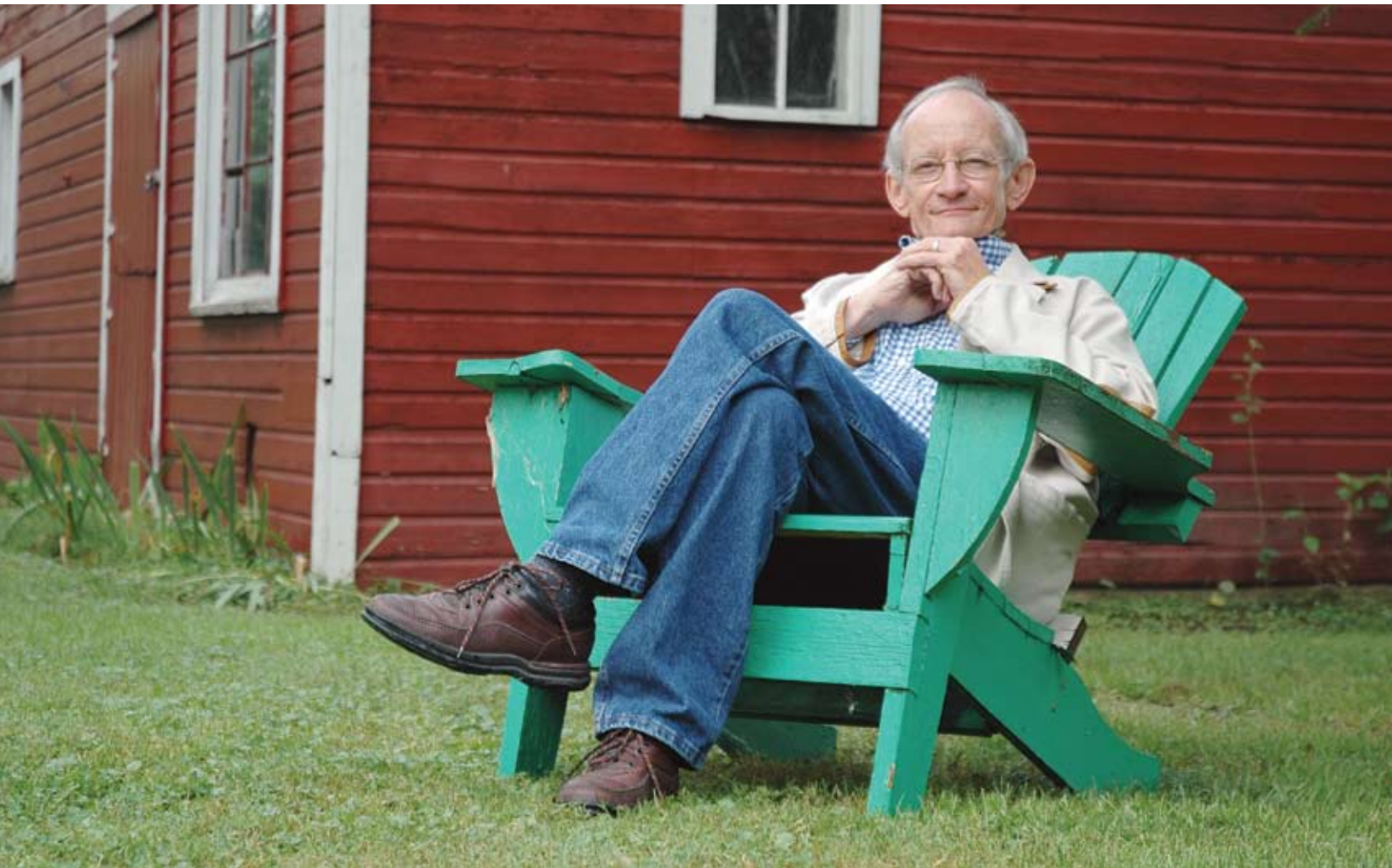
— T. Swift



TED KOOSER is a poet and essayist, professor of English at the University of Nebraska-Lincoln, the United States Poet Laureate Consultant in Poetry to the Library of Congress, and a Pulitzer Prize winner.

His writing is known for its clarity, precision and accessibility. He worked in the life insurance business, retiring in 1999 as a vice president. He spoke at North Dakota State University in March.

EXCERPTS



UNL Publications and Photography

SELECTING A READER | *Ted Kooser*

First, I would have her be beautiful, and walking carefully up on my poetry at the loneliest moment of an afternoon, her hair still damp at the neck from washing it. She should be wearing a raincoat, an old one, dirty from not having money enough for the cleaners. She will take out her glasses, and there in the bookstore, she will thumb over my poems, then put the book back up on its shelf. She will say to herself, “for that kind of money, I can get my raincoat cleaned.” And she will.

From Sure Signs, 1980 University of Pittsburgh Press, Pittsburgh, Pa.

I started out as an architecture major and sort of flunked out of architecture and stumbled into the English department. By then I was already interested in writing poems. My primary motivation in wanting to be a poet was girls.

I had no talent for business at all but I've often looked back on my business career — and I've talked to a lot of students about this — the reason I was able to ascend, eventually to a vice presidency of a pretty good sized insurance company, was because I could write complete sentences and paragraphs.

All this time I was trying to write. Every morning I would get up at 4:30 and I would write until 7 o'clock and then I'd grab some breakfast and put on a tie.

The fact that I am now Poet Laureate of the United States is really about the fact that I have been trying to be a writer pretty much every day for almost 50 years. I have worked at it.

I'm a person of relatively average intelligence I would guess.

I have a limited vocabulary, but poetry is a skill and I have been working on this skill all these years.

Poetry doesn't have to be impossibly difficult. There are people who are very deeply invested in difficult, challenging poetry. They don't much like what I'm doing but I happen to be in the seat right now.

I think we all could probably write poetry. I'm sure only a few of us are ever going to write great poetry. But it is an activity that everybody could be engaged in and we'd all be the better for it. What would be wrong with a world in which everyone was trying to write poems, considering how we spend our time watching reruns of Jeopardy? It's a way of clarifying your thoughts, a way of helping you think through things.

I happen to have been given a talent for metaphor and I have found that metaphor is a difficult thing to teach. But everyone else could have something else.

When I was just starting out I wrote with tremendous restraint, as far as emotional restraint. I would let out a little glimpse of feeling once in a while but the poems were very cool and very hard, and then in later years I have been much more comfortable with at least talking a little bit more about how I was feeling.

When I'm writing well I'm paying very close attention to what's going on around me.

If at the end of the year I have eight to ten poems that I think are worthy of publication, that's really a good year for me.

We have poets all over this country who have been carping for years and years about the fact that people won't buy books of poems. It needs to occur to them at some point that people will buy books of poems if we are writing books of poems that they want to buy. We have to write books that people really want to buy, more than they want to get their raincoat cleaned.

I use 9 x 12 spiral bound artists sketchbooks.

I don't know how this works, really. I wish I did know, because if I really knew how, I could get through that little door every day and there'd be a lot more poems.

As a poet you learn by reading other poetry. The more you read the better you're likely to get at it. I ask my graduate students to read 100 poems for every one they try to write.

A poem is a way of appreciating and celebrating life and the ordinary day-to-day world that in a way has a political content to it. It is a kind of low-level patriotism.

Writing well is hard. Writing with an audience in mind is harder. Giving it to the audience is harder still.

Poems on the bus

In some cities, the insides are peppered with snappy advertisements, layers upon layers of personal messages carved or marked or inked by passengers. In the No. 13 buses in Fargo, a rider inclined to read will find poetry.

Short-short poems — small enough to fit on the wall and easy to read while bumping along on the road — will be updated a couple of times a year.

The city and the university also collaborated in adding art to the bus shelters around town.

NEW TOYS

A woman wants to communicate

A man tells her which buttons to push

A child watches

—Amy Hanstad, *NDSU Creative Writing*

BUS THOUGHTS

“Invalid” or “thank you” — what will it be today?

My card is so ragged I never know what it will say.

Thank goodness it thanked me, so I can sit down

Next to a stranger. I smile, he frowns.

Up and down my stomach starts to feel icky.

What’s that? Oh no! I just put my hand in something sticky!

Who puts their gum under the seat?

Wait, oh ... crap, there goes my street.

Pull the yellow cord and jump off out of place.

He pulls away as if in some sort of race.

Walking to school, I guess it’s not that far.

Besides, riding the bus is better than filling my car.

—Laura Oja, *NDSU Creative Writing*

ZEBRA

Even his skeleton
Has stripes!

—Glenna Luschei, NDSU Creative Writing

ODE TO BREAKFAST

Cold coffee
 Burnt bagel
Late for class

—Angela Smith, NDSU Creative Writing

POEM

If you can make a poem
A farmer approves of,
You should feel lucky.
A blacksmith you can never figure out.
The worst to please is a carpenter.

—Olav Hauge, N.D. poet

AGAINST SCHOLARSHIP (Mr. Magoo)

I can't really transcribe his laughter. Partly because
it's not always clear what he's laughing about.
He seems just to laugh. Has whole conversations
with himself in the language of chuckles.
He's carbonated.

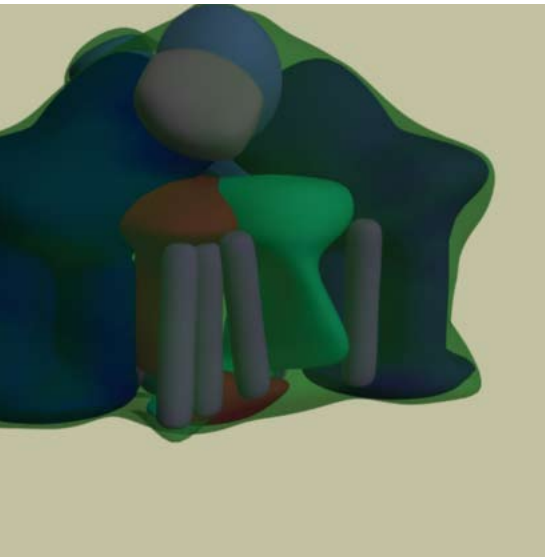
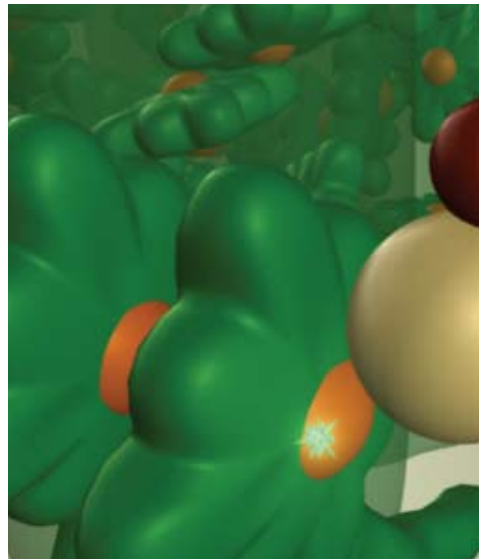
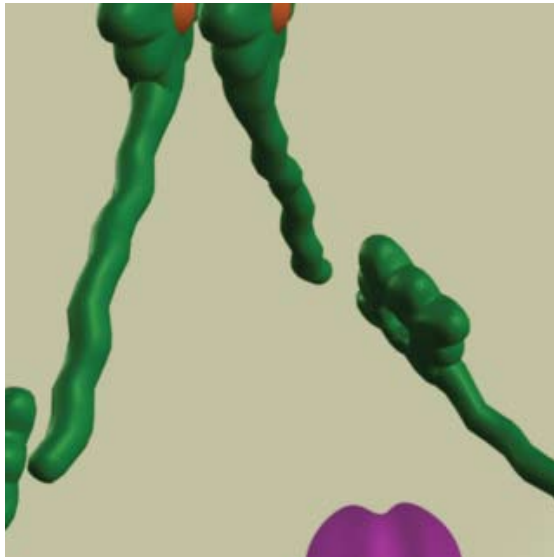
Surely we don't have
a Theory of Laughter? I won't look it up.

—Cynthia Nichols, NDSU poet and teacher

HAIKU

Why are you looking
at poetry instead of
out the window there?

—Terry Mondry, NDSU Graduate Student in English





THE CELL GAME

Fingernails grow. Hair gets longer. Skin heals. Bones mend. A virus abates. An infection is quashed. As if a wizard's wand waves to make it so. Inside the human body are clues to why this magic occurs.

It's all in the cells.

We're all composed of microscopic cells — some 10 trillion cells. Muscle cells, liver cells, brain cells and a couple hundred more types of cells.

Inside each cell are workhorses known as enzymes. Think of each cell as a miniature chemical reactor made possible by enzymes. The enzymes speed up the chemical reactions as they break molecules apart, stitch the molecules together and jettison others that are no longer needed. Our DNA — deoxyribonucleic acid — provides a master blueprint to guide cells in producing new enzymes. Cells use enzymes to grow, reproduce and create energy. Enzymes are one class of proteins being made and only part of the cellular story. An intricate control system ensures genes are turned on in the right tissue at the right time and produce the correct amount of protein for the cell to function properly.

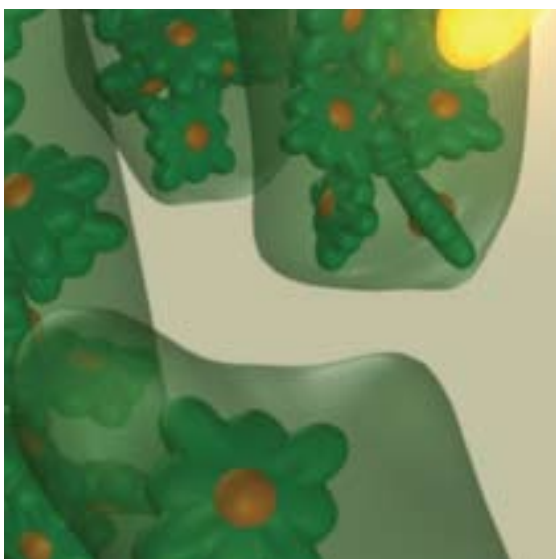
In turn, the cells tell each other what to do, synchronizing every operation within our bodies. Cells create messages, and then transcribe and deliver them within each cell so every part knows its role.

There's a lot more going on. While the enzymes are zipping around making things happen at the behest of our cells interpreting directions from our DNA, a substance known as ATP — short for adenosine 5-tri-phosphate — stores chemical energy within cells. Each ATP molecule is recycled 2,000 to 3,000 times during a single day, and like electricity, it is a source of energy that cannot be stored and must be used right away. So if you weigh around 150 pounds, your own body might be creating 88 pounds of ATP each day. An electron transport chain, resembling a relay team, passes electrons from one compound to the next as it sets the stage for ATP production. It's a busy place inside cells.

But we can't see all these cellular and molecular processes as they accomplish dizzying sequences of action. They're just too small. Pluck a hair from your head, (gray or otherwise) and take a look. The strand might be a tenth of a millimeter, which is 100 microns. A cell might be only 10 microns — really, really tiny. Teaching students about cells and more importantly, what occurs inside them, represents a challenge. How do you portray something that's not readily visible? How do you engage students in not just memorizing terms for a test, but in truly understanding molecules, cells, proteins, enzymes and their amazing actions occurring within plants, animals and people?

ENTER THE VIRTUAL CELL

First, eerie strains of music, then the dark screen comes to life. Opening titles roll. "Virtual Cell Presents" appears within a cosmic blue circle against a black background. The name of the movie comes into view. Blue, transparent oval images wiggle within a spotlight that expands into blindingly white light. An articulate female narrator sets the stage as the action begins.

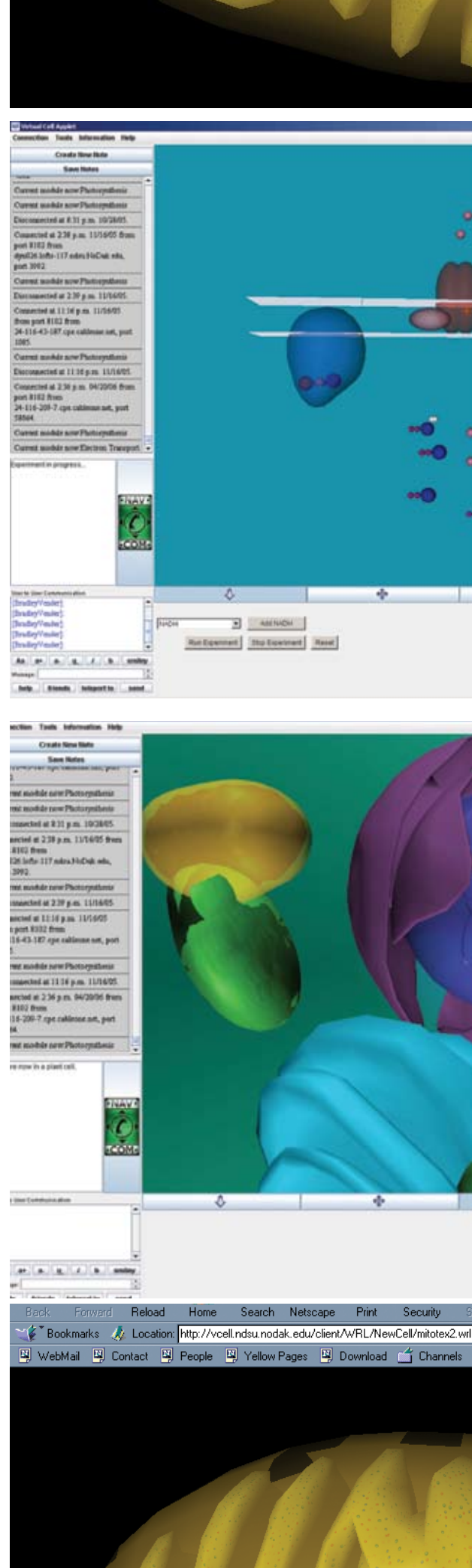


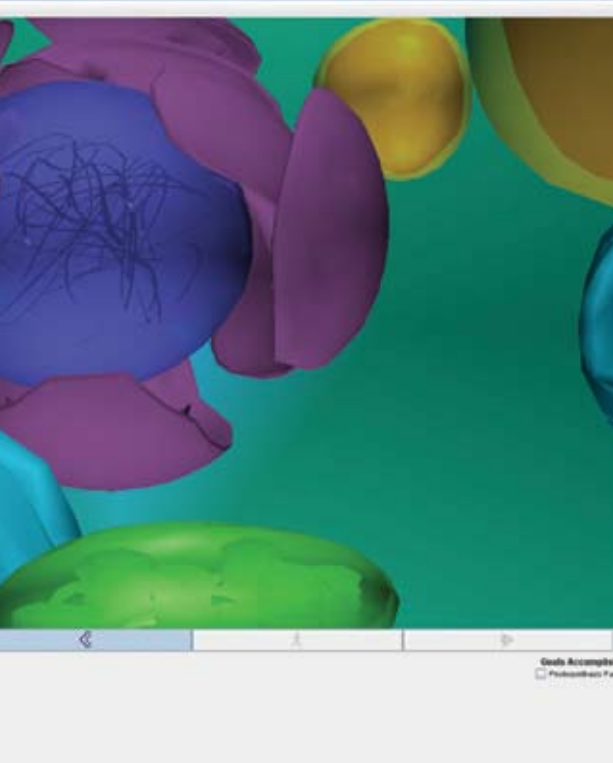
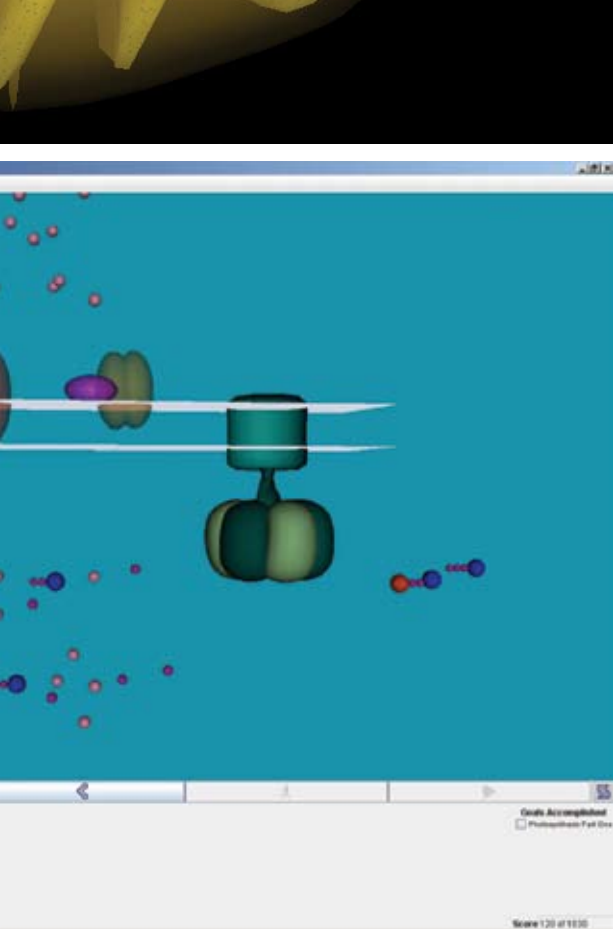
Next, the screen becomes a kaleidoscope of yellow, blue, purple, magenta and green with colorful capsules, floating strands of ribbon and kidney-shaped geometric forms. The mini-movie lasts three to five minutes. During the film, animation breathes 3-D life and action to amplified views of cellular and molecular processes, helping students visualize what happens inside cells. Eight of these mini-movies, known as the Virtual Cell Animation Collection, were conceived, produced and finally premiered at North Dakota State University. Visiting this Web-based virtual cell allows students and teachers to travel inside these cellular worlds. The First Look section includes photos to introduce each topic. Another section, Advanced Look, provides in-depth information. Click on The Movie. As the music swells, scientific discovery unfolds in each scene. It's groundbreaking stuff in education, enough to be recognized by the National Science Foundation — the arbiter of what's going on in science and research — with a link on the foundation's Web site section on discoveries.

The story, however, begins long before that first frame. Bringing this animated world to life is a long process, starting with — what else — a script. Phil McClean, who teaches genetics and plant molecular genetics at NDSU, writes narratives to describe what goes on in a particular biological process. Then an artist creates objects based on the narrative. In most cases, the cast of characters in the mini-movies are actual shapes that have been previously discovered using X-ray crystallography and other scientific techniques. In instances where molecular models are not readily available, the artist goes to work, employing imagination to render images for the screen.

The mini-movies are more than just educational. They're gorgeous, in part due to Maya® 3-D graphics software from Autodesk®, a software so powerful it has received its own Academy Award in 2003. It's been used to create blockbusters like Star Wars, Lord of the Rings, and Chronicles of Narnia. Without this software, the NDSU project would not be possible, so it's significant that professor Jeff Clark and visualization expert Aaron Bergstrom secured software licenses and training scholarships for NDSU to use it.

But good software doesn't mean the art phase of virtual cell computer animations is any less labor intensive. An artist may spend 200 hours on each detailed step, and then there's another 40 hours of post-production to edit, add titles, narration and sound effects. Artists who can illustrate biological processes are a specialized lot, but people like Christina Johnson are out there. Johnson came to NDSU with visions of majoring in biotechnology. But experiences in lab settings made one thing clear — it wasn't for her. She switched to her avocation, graduating NDSU as an art major with a strong foundation in science. The convergence of art and science makes the virtual cell animations unique. "We try to drive home that these are spatial processes. We want them to understand that it is happening in space and that it is three-dimensional," says Johnson. "We'd like to think that we present these things in a way that is entertaining to some extent. We try to keep in mind cinematically what they look like. Is it interesting to watch?"





To understand how the animations are built, picture a skeletal or wire frame drawn onto a computer screen. Then plot the frame's movement millimeter by millimeter. Add layer upon layer of texture to make the object recognizable. Art, cell biology, math and computer science are used to blend the frames, objects and associated landscapes into movies. Crafting such animations requires hefty computer processing power. NDSU's Center for High Performance Computing, capable of 500 billion calculations per second, makes these movies spring to life. In some respects, the animations are scene stealers. Originally created to guide programmers developing educational computer game modules to teach biology, the animations assumed a life of their own.

A HIT WITH AUDIENCES

Audiences know what they like. There's even a burgeoning Virtual Cell fan club around the country. "The Virtual Cell animations engage my students, plain and simple," says a professor at Marquette University in Milwaukee. "I know that it takes tons of planning, great design and skill to create science animations of this quality, but my students don't see that — they see the science, which is exactly where I want their attention to be focused."

Although anecdotal evidence is useful, scientific proof that virtual cell animations enhance student learning underscores their value. "We build worlds to develop an environment where the student can learn to solve problems," says McClean. A team of researchers from across campus — McClean, computer scientist Brian Slator, Lisa Daniels from education, statistics professor Jeff Terpstra, and Alan White, a former NDSU biology professor — show that students who use the movie animations actually learn the content material better than students who don't use them.

Though the project earlier received attention in publications such as *Cell Biology Education*, a mention in the Netwatch section of *Science* magazine in late 2005 raised its profile. The brief article offers a movie critic's review, albeit a scientific one, about NDSU's Virtual Cell Animation Collection. After the article ran, the virtual cell Web site logged more than 100 new users. Based on the magazine's high-profile exposure, universities in Wisconsin, Utah, Washington, North Carolina and Colorado are interested in collaborating with NDSU on the project. Translations into French and Spanish are possible.

As for sequels to *The Virtual Cell*, more mini-movies are being created to feature additional molecular and cellular processes. The NDSU team that developed them is investigating whether the animations could be adapted to changing technology. How, for example, might they be configured so students could download them for viewing on an iPod?

Whatever form *The Virtual Cell Animation Collection* takes in the future, be certain that molecules, enzymes and their assorted scientific partners will continue to be cast in starring roles. No stunt doubles allowed.

— C. Renner



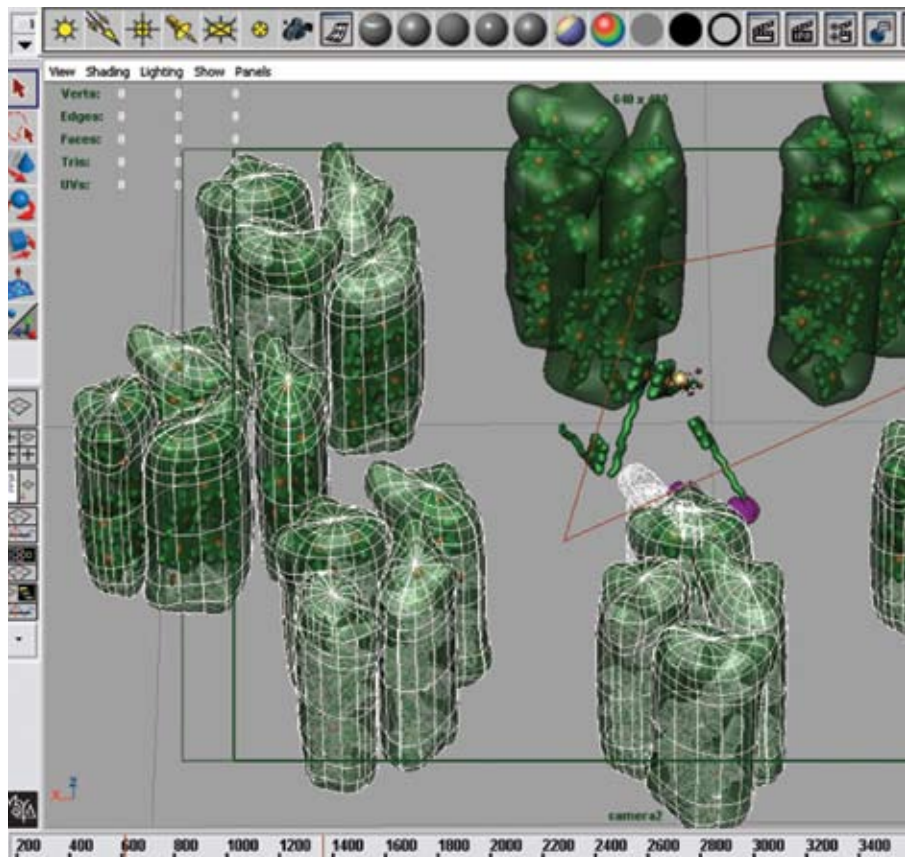
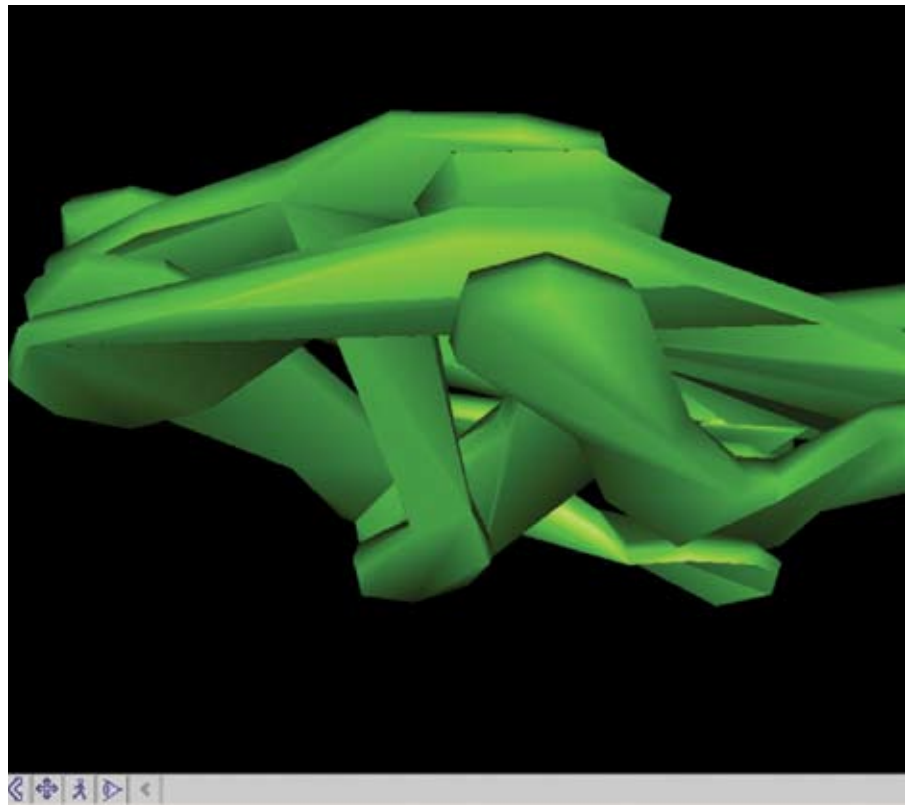
**BEHIND
THE
SCENES**

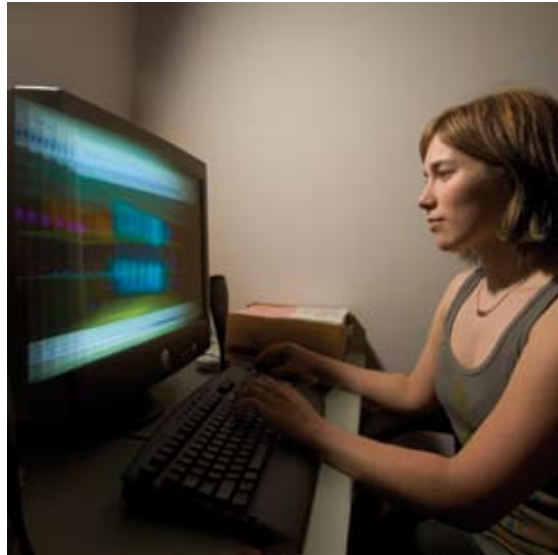
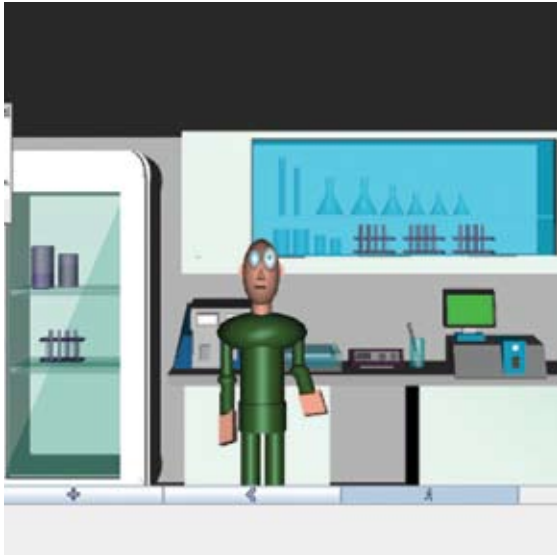
For Phil McClean, a tall and lean guy with light silvery hair, it's all about the genes. He's a molecular genetics professor, and curator of a computer database called BeanGenes. His graduate training spanned plant breeding and the physiology of dry beans, and these days, he studies the common bean — *phaseolus vulgaris* — pinpointing disease, color and pattern genes. McClean grew up on Air Force bases around the world, and so he's a person with an eclectic global viewpoint. He freely admits he gets his news from the Daily Show on Comedy Central. By his own admission, he is cautious about how much student learning is improved by technology.

Contrast that background with the dark-haired Minnesotan who tools around campus on his bicycle, decidedly low-tech transportation for a high-tech guy. For Brian Slator, it's all about computer wizardry. His office display case includes a significant collection of Batman memorabilia, not so much by design as by happenstance. People kept giving him stuff because they thought he collected it after seeing that he had one item, which led to another and another by well-intentioned gift givers. As a computer science professor, Slator's world is populated by bytes, bits and computer-ese foreign to non-technical audiences. He has no hobbies. "My job is to research and develop educational games and I love my job. With a job like mine, you don't need hobbies." He is among several North Dakota State University faculty who are exuberant about the benefits of using technology in teaching.

McClean's and Slator's distinctly different skills combine to lead teams who create virtual worlds where students learn science in a unique way. For a generation whose daily existence is tethered to computers, cell phones, iPods and the Internet, these methods reach them in more dynamic fashion than a static textbook. High technology blends with solid teaching methods to pull students in and more importantly, help them master processes and solve problems.

It's unlikely these professors grew up thinking they'd become computer game creators or movie producers. And maybe their animated movies are not the scale of notable studios like Pixar or their computer games as ubiquitous





as Super Mario Brothers. But through projects such as the NDSU Virtual Cell Lab and its accompanying Animation Collection, they've created a buzz that any Hollywood publicist might envy.

Successful movie-making is based on many things, including casting the right people in the right roles. McClean and Slator's tale to create a unique style of computer games and animation to teach science and other topics began in the mid-1990s. The story is not dissimilar to major movie producers who option material that takes years to be developed. Sometimes it takes hard work. Sometimes it takes luck. Above all, it takes money. For McClean and Slator, that perfect storm of talent and timing seems to take shape in something called the World Wide Web Instructional Committee at North Dakota State University. Its ensemble cast includes an eclectic group of educational disciplines — Bernie Saini-Eidukat and Don Schwert from geosciences, Jeff Terpstra in statistics, education professor Lisa Daniels and anthropologist Jeff Clark.

There is also the technical crew, akin to those people who win Academy Awards for sound, lighting, costumes, visual effects and cinematography. These are people whose specialized skills make movies, games and virtual worlds possible. That includes NDSU computer programmers such as Brad Vender, computer visualization manager Aaron Bergstrom, as well as artists Christina Johnson and Roxanne Rogers. The technical crew, directed by professors on the World Wide Web Instructional Committee, creates virtual worlds that enhance how students learn.

In skilled hands, software creates virtual worlds, games and movies that reach students in new ways. The Virtual Cell Animation Collection — mini-movies to teach biology — represents only a portion of the virtual worlds available. Another Web site welcomes students to the NDSU Virtual Cell Lab. "You will be directed toward your research vessel, a Mark IV re-sizing submarine, and its onboard laboratory," notes the game's guide. "You will have a set of controls with which you will maneuver your research vessel, find general cell information and perform experiments. Others can be inside a cell with you. These other researchers are also equipped with a Mark IV research vessel."

Players control a virtual submarine to explore plant and animal cells from the inside. Once students begin playing, they seamlessly enter a virtual world to become scientists: performing experiments, interacting with the world and with each other, applying scientific method.

The VCell game allows students from all over the world to communicate, working together simultaneously in their virtual research vessels. Other virtual worlds allow students to discover geology, anthropology and economics through a variety of online educational games.

Slator and McClean are proud of the talent available at NDSU to develop these projects. "Ninety-five percent of the people who work on the project are NDSU students," says McClean. The project provides both undergraduate and graduate students unique opportunities. One computer science student, for example, is working on a data mining project to better understand how students use the Virtual Cell game. Other students are honing their computer programming skills through the project.

Audiences, students and gamers see the fun. Teachers see results. "We believe this approach has benefits. They're eye catching. Students expect a certain level of visual drama or realism," says Slator. Whether movies or games, what happens onscreen becomes possible because the VCell team solves complex computer programming challenges behind the scenes. A robust tutoring system guides students step-by-step. A course management system handles registration for professors who assign students The Virtual Cell and other programs in their classes.

Talent, time and money make it all possible. Approximately \$3 million in funding has come from the National Science Foundation and from the U.S. Department of Education. Software companies known as Alias/Wavefront provided additional assistance. At the request of the National Science Foundation, artist Christina Johnson created a movie that covers all the projects the World Wide Web Instructional Committee is developing.

The magical melding of science, art, technology and education creates opportunities. VCell — The Game, The Movie — can sequels and marketing tie-ins at fast food restaurants be far behind? In the future, an animated movie or educational computer game from NDSU might become as identifiable as a Coen brothers picture or the computer game PacMan — at least in scientific circles. In a virtual world, anything is possible.

— C. Renner

To view the virtual worlds mentioned, visit:

<http://vcell.ndsu.edu/animations/>

<http://vcell.ndsu.edu/public.html>

<http://wwwwic.ndsu.edu/>



privileged

The first question is usually something like “how did you get involved in this work?” As I’m trying to find a comfortable, succinct answer, which is clearly not going to be succinct, the next question quickly follows. “What do you teach?” “I’m a virologist. I teach mostly virology and microbiology courses.” This usually elicits a non-verbal response, maybe even a chuckle, as if to say “isn’t that nice, weird but nice.” (What I hear is the voice of either Carol Channing or The Church Lady saying “Oh my, isn’t that special.”)

Is it weird or special or nice that a middle-aged, white, science professor is actively involved in NDSU’s anti-racism effort?

So how did I become part of an anti-racism team and eventually one of the trainers? The real answer is not easy, short, or always comfortable, but it probably is similar to many of the other white people involved in anti-racism efforts around the country.

Was my upbringing important in leading me to this place? Yes.

Growing up as the youngest of three kids in Pullman, a small college town in eastern Washington, race and racism were not issues I remember having to confront often. Both of my parents worked at Washington State University. Pullman, WSU, and the surrounding area were very white. As director of admissions at WSU for 33 years, my dad helped the university grow from about 5,000 students to the nearly 20,000 today. I remember Dad hiring, among others, African-American, Hispanic-American, and female admissions counselors and assistant directors during the late 1960s and into the 1970s. While I’m pretty sure I didn’t understand the significance at the time, it was my first exposure to an intentional effort to change the face and culture of an institution. I also remember there were struggles associated with this, but I didn’t know what it was all about.

In summer of 1969 we went to Hong Kong for six months while my Dad was on a sabbatical. I think this is probably where I first started to become aware of my whiteness. Now don’t get me wrong, I had looked in the mirror and had seen the bright, orangish-red hair, the absurd number of freckles, the blue eyes, but in Hong Kong I stood out. I did not experience oppression by any means, but I did at least become aware that there was a “white.”

As a sophomore or junior in high school, I was asked to go to our Sadie Hawkins dance by an African-American girl, Anita. (For those of you too young to know about a Sadie Hawkins dance, this was where the girls asked the boys out – even in the early 1970s that was not common.) I liked Anita. She was smart, fun, and cute. Unfortunately, just prior to the dance, one of the most important people in my life said something to me about my going out with her – “What are people going to think?” – that not only ruined my dance experience, but had a profound affect on me. I knew the assumptions and attitude that drove the comment were wrong, but I didn’t or couldn’t

I have the privilege to not think about being white, to not consider that the color of my skin might influence how an institution responds to me, and I have the privilege to believe that all people are being treated as I am.



or wouldn't take on the person who made the comment, and I allowed the comment to influence my behavior. That has become a valuable lesson over time. If I don't stand up for what I believe is right, who will?

While none of these experiences seem all that significant, all helped to inform me of the world.

What has it been about my experiences at North Dakota State University that has led me to this place?

In 1994, after about seven years at NDSU, I was asked to be the NDSU representative on a regional project meant to get campuses better connected with all of the communities we were supposed to be serving. We ended up with a steering committee of 40 people from North Dakota, Minnesota and South Dakota, and this was as diverse a group as you could put together in this region – representatives from the Tribal colleges, land-grant schools, religious leaders, urban leaders, rural leaders, farmers; men, women, people of color. After a couple of years of struggling to make progress during our meetings, the people of color suggested that we needed some anti-racism training to move forward. We really did need the intense experience of talking about racism to help us work together.

It was during this three-day training session that I first heard many of the concepts that we use today in our anti-racism training. I found out that talking about racism is very difficult for white people. We find all sorts of ways to try to direct the conversation in other directions: for example, “what about sexism, heterosexism, ableism?” “I'm not a racist, I just see a person.” We might get angry, defensive, sad, and we might feel guilty, but we will always be uncomfortable if we are really open to hearing what is being said. I experienced all of those feelings. At times I still do – this is very challenging work. But the lesson we learned, I learned, was that we worked together much better after this experience, we were open to each other's ideas whether we agreed or not, and we were able to move beyond typical meeting behavior and really interact with each other.

A major piece of this training, and the training we do today, was to start to talk about and examine the concept of white privilege. This is one of those concepts that is especially difficult for white people to talk

about, think about, and even “see.” I had never felt privileged. I worked relatively hard to do well in school and get my degrees. I worked hard to be successful as a faculty member at NDSU. Nobody was suggesting otherwise, but when confronted with the concept that white people in America have unearned privilege in our system and institutions ... well at first that was very difficult to hear and see.

We then extended the conversation to talk about how white privilege plays out in our institutions. As we talked about more, and as I have continued to examine white privilege over the last few years, it makes a lot of sense. Virtually all of our institutions were designed by and for whom? Who maintains virtually all of our institutions? The answer to both questions is white men, usually rich white men. For most of our country's history racism was legal; it is only in the last 40 years it has been illegal. Did all of our institutions immediately stop being racist when the Civil Rights Act was passed in 1965? That seems highly unlikely.

I came away from this training, and have had this belief reinforced over the subsequent years, believing that I am privileged in our institutions and system. I can walk into any office at NDSU and be assured to see people who look like me. I can screw something up or miss a meeting and that won't be attributed to the color of my skin – I know that is not true for colleagues who are people of color. I know that the institution is going to treat me as an individual not as a member of some group. I have the privilege to not think about being white, to not consider



We are not responsible for the development of the system of racism; however, we are responsible for undoing that system.

that the color of my skin might influence how an institution responds to me, and I have the privilege to believe that all people are being treated as I am. In other words the system works really well for me. The system doesn't work so well for people of color.

Does this mean I am not deserving of my position and whatever small success I have achieved? Does this mean I should feel guilty? No. As a white person, I may feel guilty about racism and the resulting privilege, but I don't need to feel guilty. I am not responsible for the development of the system of racism; however, I am responsible for undoing that system.

I think that is worth repeating. As a white person, I am not responsible for the hundreds of years of racism in America, but I am responsible for trying to undo it.

This initial anti-racism training was an enlightening experience for me. So much so, that I decided to take my piece of this anti-racism work to NDSU. So I did what educators do, along with another like-minded colleague and friend, I taught a course titled "Understanding and Undoing Racism." We had a very diverse group; eight white students, six African-American students, three Native American students, and one Hispanic-American student. The course was great with deep, difficult, but meaningful discussions. The students were changed, we were changed, and everyone left the semester with a purpose. But something was missing – we were only 20 people and none of us was sure where to go next.

For the next couple of years I tried to get others involved by inviting faculty, staff, and students to meet as an informal group, but that proved difficult to maintain. The other person who had taught the course with me left NDSU, which meant teaching the course again would have required my finding another person to teach with or doing it alone, all of which seemed to present more challenges than I was willing to take on (yet another example of my white privilege – it was easy for me to say I was too busy, etc., and not try to teach the course again). I continued some individual anti-racism work through other training sessions and reading books, but no real activity.

Finally a few years ago, I heard about the group forming on campus called TOCAR – Training Our Campuses Against Racism. I don't like this, but I have to admit that my privilege and ego got the best of me again because I felt they should have come to me to be part of the group! After all, I had all of this training, had taught a successful course on anti-racism, and, well, "I got it." What a twit. Fortunately for me, I was invited to one of the TOCAR training sessions about four years ago and after that was given a chance to be part of the anti-racism team. I am lucky to be involved with such thoughtful, energetic, and dedicated people, and I am privileged to be the leader of the team. I learn so much from these colleagues, friends, and I look forward to our continued work together. But, this work is very difficult, frustrating, and quite often uncomfortable for a white person.

Over the past couple of years there have been times when I have gotten very frustrated sensing that our effort seems to have little impact, seems to move so slowly, and is constantly met with resistance within our institution. I have been frustrated enough to have had insidious thoughts of walking away from the group creep into my consciousness. I could simply cite all of the other things I am doing and involved with, how my job requires too much of my time, and how other people should be picking up the load, and that would be accepted and understood in our institution. So when I am feeling my privilege welling up, it is important to think about how racism and white privilege work. While my leaving the group would be viewed as just exercising my individual rights, the people of color on our anti-racism team, at NDSU, and in America, do not have the privilege to ever walk away from racism or white privilege.

NORTH DAKOTA STATE UNIVERSITY
Box 5167
Fargo, North Dakota 58105

Non Profit Org.
U.S. Postage
PAID
Permit No. 818
Fargo, N.Dak.