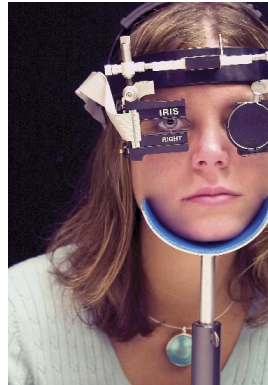




**NDSU** NORTH DAKOTA STATE UNIVERSITY ■ SPRING 2005  
magazine



# contents

<b>Editor's note</b>	5
<b>Letters</b>	6
<b>On the cover</b>	7
<b>Contributors</b>	8-9
<b>Welcome to the real world, honey</b> Essay by Becca Stich	10-11
<b>Best of show</b> Student art exhibit	12-17
<b>The secret life of [queen] bees</b> Girl-to-girl bullying in North Dakota	18-21
<b>Practice makes perfect</b> Kids teach kids about gun safety	22-25
<b>In depth</b> Psychology researchers study eye movement	26-31
<b>Excerpts</b> Gen. Charles F. Wald	32-33
<b>Technology: a new discovery in archaeology</b>	34-39
<b>Drama kings</b>	40-45
<b>The king of old Broadway</b> Essay by Michael J. Olsen	46-47

# NDSU Volume 5 Number 2 SPRING 2005 magazine

**Editor**

Laura McDaniel

**Editorial staff**

Char Goodyear  
Cathy Jelsing  
Dan Koeck  
Kathy Laid  
Tammy Swift

**Art direction/design**

Julie Babler

**Design**

Brad Clemenson

**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Unless noted “not for publication,” communications to the editor  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 5, number 2

NDSUmagazine 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 institution.*

**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**

George H. Wallman  
*george.wallman@ndsu.edu*

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

Philip Boudjouk  
*philip.boudjouk@ndsu.edu*

**Vice President and Dean for Agricultural Affairs**

Patricia A. Jensen  
*patricia.jensen@ndsu.edu*

**Vice President for Business and Finance**

Richard L. Rayl  
*richard.rayl@ndsu.edu*

**Vice President for University Relations**

Keith D. Bjerke  
*keith.bjerke@ndsu.edu*



## editor's note

I come from a family of engineering types. Analytical fellows, who, for example, understand how machines work. I have always felt a bit inferior about this, that a character flaw propels me toward words and pictures.

My oldest brother, who has rapport with automobiles, has come to my rescue many times. Granted, that one time I didn't have the car in park, so of course it wouldn't start. But other times, there were legitimate and serious troubles, a u-joint that needed replacement, say.

Just this past summer, my aging but beautiful coupe did not want to start while in his town. This most recent bout had to do with the car making no noise whatsoever when the key was turned. It's easier to call him these days, as I am equipped with a cellular telephone, and even after all these years he seems unsurprised to be asked to drop everything and tend to me. When he arrives, he jumps out of his vehicle with a great big screwdriver and tells me to give it another try. (Of course it starts right up. Somehow in his presence, cars behave.) But it didn't start on every try, so he clanged on something under the hood – *voila* – and said “You're starter's going out.” This took two whole minutes.

The point is, while he is in fact an analytical guy, don't tell me there wasn't a bit of intuition in finding the solution. I mean, how did he know to bring a huge screwdriver along?

It turns out we're not so different. No one in my family has ever called me in crisis, stuck in a parking lot with a poorly constructed sentence, but nevertheless, it's true

that there is a systematic approach to putting together a magazine, and editors have a lot of rules to obey. We use our hearts, but it's not all from the gut. In addition to myriad grammar and usage rules (including one that says myriad is used alone, never *a* myriad *of*, an error I've seen in even the smartest writers' work, *aha!*) A list of fifty common sense rules specific to university magazine work, compiled by some of the best in the business is taped to my wall. I consult it regularly.

Some of the rules I like because they are so cleverly put:

44. The best letters are the ones that begin Dear Idiot.

Some are endearing in intent:

42. Imagine that the writer is your mother.

This set cuts right to it:

37. Remind women writers that they don't have to mention their husbands or boyfriends.

38. Remind male writers that it's okay to acknowledge there are other people on the freaking planet.

Some are about the nitty gritty:

8. Read all galleys three times, once backward.

And then there's the soul of the list:

40. Magazines are fun. Remember that.

Please enjoy this issue, and feel free to write a letter, salutation of your choice.

Thank you for reading.

Laura.McDaniel@nds.u.edu



# letters

Fantastic job on the fall issue of NDSU magazine. My typical routine when the magazine arrives is to page through it and look at the pictures and throw it in the recycle pile but not this one. Starting with your editor's note I was hooked. I have completed a handful of marathons and couldn't agree more with your thoughts. Wasn't it nice to see the capitol at the finish line? Congratulations by the way. From your editorial I continued to read the whole magazine cover to cover and found the reading very informative and enjoyable. Dr. Dale Herman is the craziest tree enthusiast I have ever met. I graduated with a BS in Horticulture in 1993 and took four classes from Dale. He was a very tough teacher but to his credit I know more trees than anyone I have ever met. You mixed the history of NDSU (Consolation College with great pictures) very well with the new flavor of downtown Fargo (Fargcool).

Thank you for the enjoyable read and I promise I will look at future issues a little bit closer. Keep up the good work.

**Brett Hetland  
Okoboji, Iowa**

I just received Vol. 5, No. 1. We receive so many alumni and university magazines, most go straight to our archives with few second glances. Not so this. I sat down with this beautiful magazine and looked through it front to back and back to front, admiring the photography and design, as well as the writing that I glanced through.

I look forward to giving this a close read, and sharing it with my colleagues here, but I first wanted to fire off a quick note of congrats and thanks. Your readers are well served.

Cheers from Kansas

**Chris Lazzarino, associate editor  
Kansas Alumni magazine  
Lawrence, Kan.**

Just read this month's issue of NDSU magazine, and saw a picture of Nick Kelsh. Nick and I worked together at Spectrum, Quoin Magazine and the Last Picture Book while I was at NDSU.

Loved the story by Bill Snyder, too. I used to work with Bill back in the days when I was with a Bismarck advertising company.

**Dennis Hill  
Mandan, ND**

I was at the Fargo airport last night and happened to stumble across a copy of NDSU magazine. As I perused the Fall 2004 issue I particularly enjoyed your editor's note. I have toyed with the notion of training for a marathon for quite some time even though I have not run in any sort of a race since grade school some 20 years ago. And I was encouraged by your article.

**Jay Price**



## on the cover

**“Dress” mixed media collage, 36” x 24”**

*Dress is based on the form of a dress mannequin, which, on the outside, resembles an idealized human form. Underneath this outward appearance is the structure that holds the pieces of the form together. These outward pieces, however, are pulling apart – almost disintegrating – exposing the less perfect structure of the interior, just as humans have an inner essence that might, at times, be revealed.*



**Amanda Henderson** grew up in the small town of Scranton, in wild southwestern North Dakota. Perhaps thanks to the influence of her carpenter/contractor father, she decided to study architecture at North Dakota State University, earning her degree in 2003. In the process, she immersed herself in as much art as possible and is now working on a bachelor of fine arts degree.

“Both art and architecture have the ability to influence how we see and experience the world in which we live, and it is important to find a blend of the two fields to be a part of into the future.”

# contributors



**Michael J. Olsen** (*The king of old Broadway, p. 46*) is a storyteller. The rest of us had to be taught about observation, analysis and presentation, but Olsen is the kind of guy who naturally makes fascinating things the rest find mundane. Some of us would, for example, just get a flat tire, but Olsen's flat has flair; comes complete with a set up, development, conflict, and a symbol-crashing resolution. He was a theatre major at North Dakota State University, and has spent most of his professional life as a corporate communication strategist. One of his most cherished stage roles, which he portrayed in two productions, was Charlie Brown.

**Becca Stich** (*Welcome to the real world, honey, p. 10*) was in the right place at the right time when NDSU Downtown opened last fall. The ink on her diploma was still drying when she was given the title NDSU Downtown public relations coordinator and asked to create a position to fit it. She since has become the face

of the downtown campus, giving tours to prospective students, alumni and friends of North Dakota State University, coordinating events and meetings and managing the everyday happenings of the newly-renovated building. She also writes for NDSU publication services. Stich graduated from NDSU in 2004 with a degree in mass communication.







**Catherine Jelsing**, (*Drama kings*, p. 41), a staff writer at North Dakota State University, has spent a good portion of her professional career writing about the arts. One piece of regional theatre lore that’s always intrigued her is NDSU’s Lincoln Log Cabin. So, in reporting for this story, she was thrilled to tour the historic

hideaway where NDSU drama club members once entertained international celebrities. Little Country Theatre artistic director Don Larew provided the tour, and, more importantly, full access to his research on the history of dramatic arts at NDSU. He’s spent a year’s leave of absence gathering reams of material with the notion that someday he’ll write a book.



For someone who can barely see the big “E” on an eye chart without her glasses or contact lenses, **Carol Renner** finds it amusing that she contributed the article about visual neuroscience research (*In depth*, p. 26). In

the Office of Research, Creative Activities and Technology Transfer at NDSU, Renner serves as a conduit for translating scientific research information into understandable language for general media channels. Although new to NDSU, her award-winning writing career spans multiple years in multiple settings – first as a reporter and anchor at radio stations in the Upper Midwest, then in public relations across a variety of sectors including healthcare, utilities, financial services and Capitol Hill. The genesis of her writing career can be traced to her very brief stint as a playwright at age 10, when her touching, dramatic, yet playful story about elves was published in a local high school newspaper in Richardton, North Dakota. She still corresponds with her fifth grade English teacher.



(*Best of show*, p. 12 ) seated **Tessa Pelkey, Lourdes Hawley, Arion Poitra** standing **Andrea Fagerstrom, Amanda Henderson, Jennifer Brandel, Kathy Hagstrom**

**Task one:** climb through a pile of construction remnants, squint hard and imagine, in place of the debris, the walls that will become my office.

**Task two:** wait in limbo, do busy work and anticipate the end of construction and the official start of my first real job.

**Task three:** wait one more week for construction to finish before digging into my new job.

**Task four:** wait one more week.

**Task five:** start my job amid a flurry of activity while the university president, governor, congressmen and other dignitaries visit for a dedication ceremony. You've got to be kidding me.

## Welcome to the real world, honey.

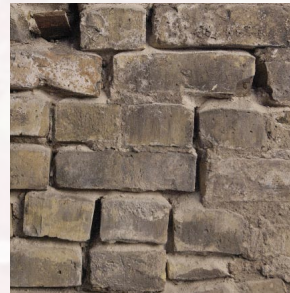
**It's not what I imagined**, this real world business. I'm not sure what I imagined. Perhaps something with a bit less ambiguity. Perhaps something with a bit more direction. Certainly not something that would be more educational in four months than my four years of college.

**“Each day I see it in the lobby, welcoming visitors to NDSU Downtown: a battered, weathered brick wall partially covered with layer upon layer of old wallpaper. ... How many years did it take to create this unique collage? It has a beauty only time can create.”**

I always thought I would spend the first couple years of my career in a mundane entry-level position, proofreading for eight hours a day and getting all the tasks no one else wanted. Instead, I

got a job as public relations coordinator in the most amazing environment imaginable: NDSU Downtown.

What a beautiful example of transition and growth. After spending nearly 100 years as a warehouse and sitting vacant for seven more, NDSU Downtown has sprung to life once again. Everywhere you look, old and new collide as students and faculty fill each room with energy and creativity. I find myself smack-dab in the middle of a state of the art facility, surrounded





by students, art, design and incredible history. Could I ask for more? I have been fully submerged in transition and growth as I have left the life of a college student behind me. As NDSU Downtown has blossomed into a lively, vibrant creative learning center, I have watched and learned and grown with it.

Each day I see it in the lobby, welcoming visitors to NDSU Downtown: a battered, weathered brick wall partially covered with layer upon layer of old wallpaper. Jagged edges of sand-colored clay peek through from behind a frame of yellowed paisley, green floral prints and bright red-and-white plaid. How many years did it take to create this unique collage? It has a beauty only time can create.

In the same way, it takes time to find our niche and become the successful individuals we are meant to be. I think of the friend who graduated with big dreams of going to Washington, D.C., and making a name for himself. He spent a summer there as a political intern, rubbing shoulders with powerful lawmakers like Hillary Clinton and Colin Powell regularly. Months later when his internship was over, he found himself back in North Dakota doing paperwork for a lobbyist. This wasn't quite the success he had dreamed of. But after paying dues for a year, he is looking forward to starting a job with U.S. Sen. Kent Conrad (D-N.D.).

Another friend had a full-time job in management information systems waiting for her before she had even graduated. She spent four months building and updating databases and soon found it horribly monotonous and boring. She knew she couldn't spend the rest of her life in front of a computer. One year after graduating, she is back in school to become a nurse.

Like these friends, I find myself in that strange space between college life and professionalism, unsure where my career will take me. I am no longer tied to term papers and all-night cram sessions, but I lack the experience I need to feel like a true professional.

I still occasionally catch myself aching to skip class when my alarm clock ruthlessly wakes me for work. I haven't had the heart to delete from my computer that project I poured sweat, blood and tears into for an entire semester. I miss rolling out of bed and into my favorite jeans – the well-worn ones that have become permanently shaped to fit me perfectly. And yet it is extremely satisfying to fight the fatigue, put on grown-up clothes, step out the door and put the skills I've learned to work doing something I love. I feel myself moving forward, putting aside my college-student tendencies and working toward my career dreams.

**“I am no longer tied to term papers and all-night cram sessions, but I lack the experience I need to feel like a true professional.”**

In the course of working toward those dreams, I have gathered valuable skills that could never be taught in a classroom. We learned in class how to handle emergency situations, but those lessons weren't real until I had water dripping on my desk from a pipe three floors above me. I was taught to speak in front of groups, but until I gave a tour of NDSU Downtown to thirty-five junior high school students, I didn't quite have the confidence to do it. Freshman math was all about problem solving, but until a department chair offered the building to two different organizations for meetings that happened to be on the same weekend – and told me to “make it work,” – I hadn't lived it.

I have a long way to go to reach my full potential. In the ways of the working world, I know so little. Every day, though, I learn more about what the real world is all about. I meet new people and make new connections. One step at a time, one day at a time I am shaping my future.

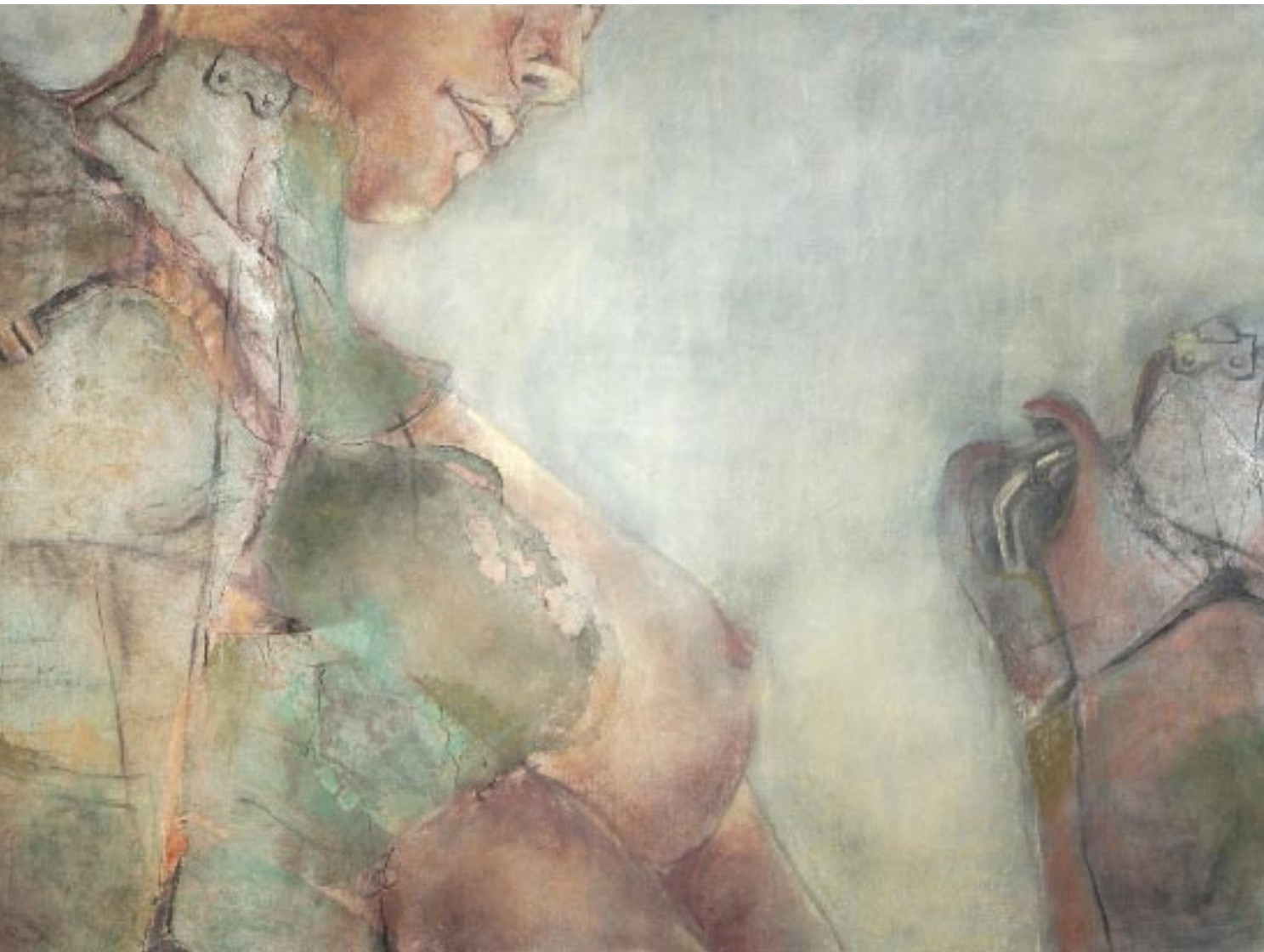
— Becca Stich

## Best *of* show

Seven students received awards at the annual North Dakota State University Juried Student Art Exhibit in the Memorial Union Gallery.

The exhibit was open to all NDSU students. Of the 101 entries submitted, 28 were chosen for the gallery show. Edward Pauley, president of the Plains Art Museum in Fargo, was guest juror.

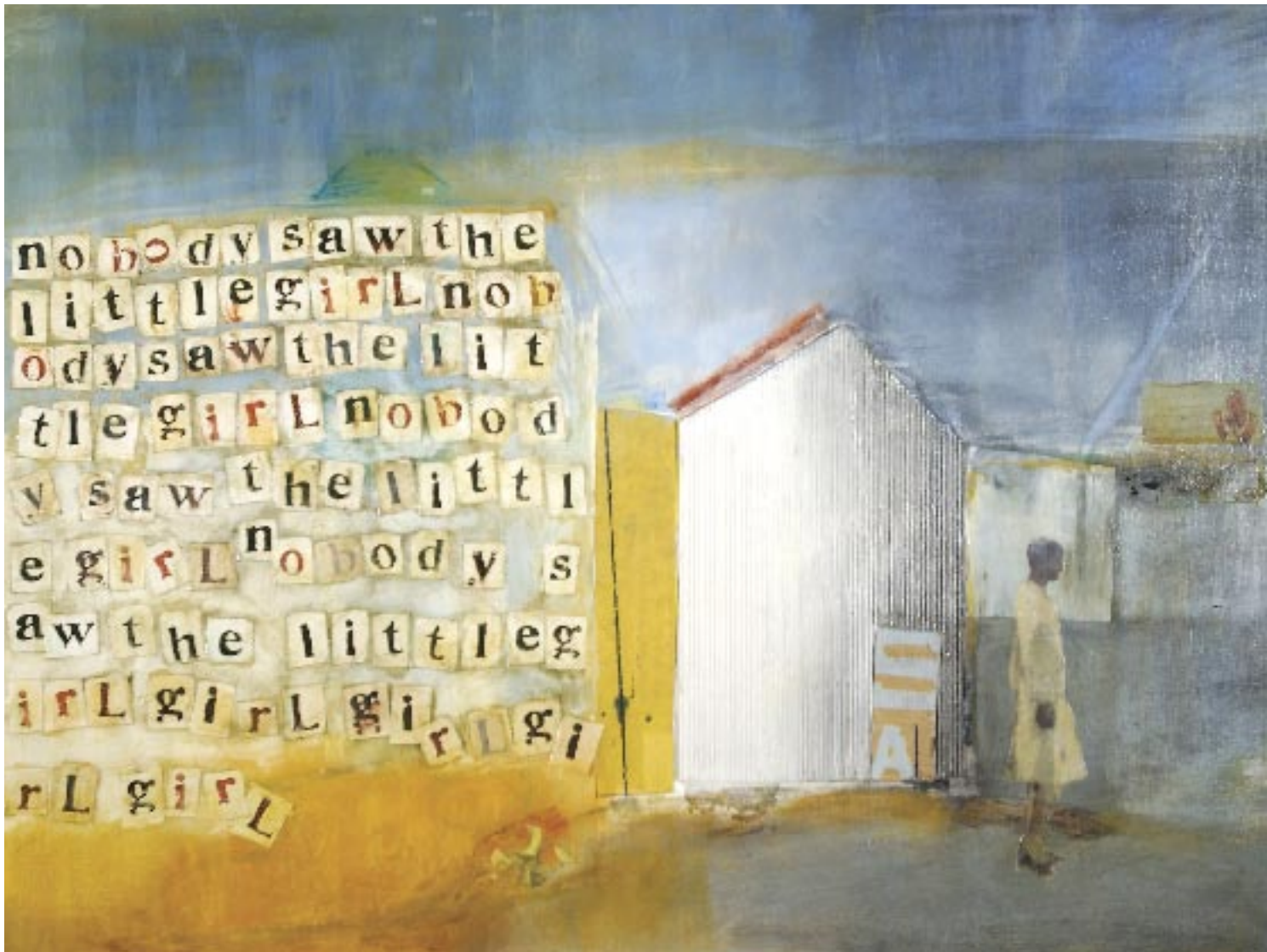
Juror's Choice Awards were given to Kathy Hagstrom and Amanda Henderson, both art majors. Other awards went to Tessa Pelkey, an art and interior design student; Andrea Fagerstrom and Lourdes Hawley, both art students; Jennifer Brandel, who studies architecture and art; and Arion Poitra, a criminal justice and art major.



*Amanda Henderson*  
**"Dress II"**

*Juror's Choice Award*  
charcoal, pastel and collage, 2004

*Kathy Hagstrom*  
**"Nobody Saw the Little Girl"**  
*Juror's Choice Award*  
mixed media, 2004





*Tessa Pelkey*  
*"Curvations"*  
wood, 2004





*Andrea Fagersrtom*  
"The Sun Always Rises"  
oil paint and hemp cord, 2004

*Lourdes Hawley*  
"Desnudo"  
four-color intaglio, 2004







*Jennifer Brandel*  
**"Trapped & Polarized"**  
mixed media, 2004





*Arion Poitra*  
**"The Beginning"**  
alabaster, 2004







## THE SECRET LIFE OF [QUEEN] BEES

When Sarah\* entered high school, she was fully prepared to be initiated.

The ritual of hazing freshmen was a time-honored tradition in her rural community. And so she gamely endured pranks such as getting whipped cream smeared in her hair. “I thought it was hilarious,” the North Dakota State University student says today.

But after a couple of years, the initiation ritual developed a nasty edge. It came to a head when several of her classmates tied younger students to a flagpole with duct tape, poured Kool-Aid over their clothes, then kicked and hit them.

The incident was all the more memorable because the perpetrators were girls in a small North Dakota town.

When Sarah shares this anecdote in DeAnn Miller-Boschert’s classroom, the NDSU education instructor is disturbed by it, if not particularly surprised. In her statewide research of girl-to-girl bullying, Miller-Boschert quickly discovered the ruthless pecking order isn’t confined to urban America or Hollywood films. She has unearthed stories of betrayal, cruelty and the type of peer-group machinations that might have given Machiavelli pause.

Miller-Boschert has submitted her research findings to the Association of Consumer Sciences Journal, where it is in the rewrite stage. She could not have picked a hotter area of study. In 2002, Rachel Simmons published the seminal work on girls and bullying, “Odd Girl Out: The Hidden Culture of

Aggression in Girls.” Rosalind Wiseman’s “Queen Bees & Wannabes” – a book to help parents guide their daughters through the social minefield of adolescence – also became a New York Times bestseller. It inspired “Mean Girls,” a hit movie that manages to be both entertaining and searingly honest in its depiction of teenage divadom.

Several factors motivated Miller-Boschert to join the charge. One was reading Simmons’ “Odd Girl Out,” based on interviews with 300 girls from 30 different schools. Another was her own experience as a middle-school teacher and administrator. Yet another hit closer to home: Her own daughter was entering the world of brand-name clothing and cafeteria politics, of sleepovers and hallway gossip.

A statewide survey of middle school teachers and interviews with female college students provided her with the necessary data. Just as Simmons and Wiseman had found, she discovered a world where even a walk down a school hallway could become a maze of catty comments, deliberate snubs and frosty glares. All sugar and spice stuff aside, the world of adolescent girls can be as fickle as it is demanding, as complex as it is brutal.

Like Simmons, Miller-Boschert believes female cruelty springs from socialization: Girls are taught to be kind and sweet, yet are discouraged from confronting or showing anger toward others. As a result, they develop what Simmons calls “a hidden culture of silent and indirect aggression.”



While boys will torment other boys with overt acts of violence, girls will use indirect tactics such as back-stabbing, note-passing and excluding peers. Girls grow adept at camouflaging their cruelty from authority figures; they learn to torment their victims through slang, the silent treatment and a glare known universally by any middle-school girl as “The Look.” They may start rumors about her, or tell her they love what she’s wearing in a tone that says exactly the opposite.

“It’s a hurt that goes really, really deep,” Miller-Boschert says. “There’s no black eye, but it cuts through the soul. You have to ask: Why don’t we help our own gender?”



Girl-to-girl bullying is probably at its peak in sixth and seventh grades, when peer acceptance is at a premium and social hierarchy is being established. But Miller-Boschert has found bullying tactics develop years beforehand. She’s heard several stories of clubs formed by 4-year-olds, who refused to let another girl into their precious preschool circle.

As girls age, their “games” can grow more underhanded. Miller-Boschert relates the story of a grade-school class in which the popular girls wielded their influence with school supplies. Every day, the teacher chose students to hand out colored pencils to the rest of the class. When the popular

girls distributed the pencils, they purposely doled out the prettiest colors to girls in the “in” group. Girls on shakier ground would sit at their desks in fear, dreading that they’d be handed a drab brown rather than a popular pink. A student’s color status could change from day to day.

On the extreme end, peer bullying can make school intolerable. In one case, a scapegoat was tormented so severely by other girls that her parents relocated her to another state to live with her aunt. The school remained so divided by the incident that parents and community members got involved. Finally, the girl’s family wound up moving.

In some instances, technology adds a whole new dimension to peer persecution. Junior high and high school kids across the country use well-known sites such as Xanga.com to create blogs in which they “flame,” or attack, other students. In the country school days, girls gossiped by passing notes. Today, their “notes” reach hundreds of online users – and they can pass them with virtual anonymity.

“We have this not-in-my-backyard thinking,” Miller-Boschert says. “It does happen here.”

A girl can become a target for any number of reasons, from wearing the wrong clothes to speaking her mind. The requirements for middle-school popularity are manifold: The girl must be pretty and thin, she must date a “cool”

boy, she has to act and dress right, she should be smart, but not too smart. Even after a girl reaches the coveted “popular” circle, her position is never secure. The reigning Queen Bee may penalize anyone in her social group who shows too much individuality, starts hanging out with the wrong people, or is perceived as a threat.

Several survey respondents in the NDSU study reported that Queen Bees handled the sting of jealousy by rumor mongering. One of the college students in Miller-Boschert’s survey wrote: “If they were jealous of others and their relationships with boys, they would start rumors about them being sexually active or call them a slut – sometimes to their face. I found it appalling and would keep my mouth shut as it was happening, partly due to the shock element of it and partly because I didn’t want them to turn on me.”

One anecdote illustrates the brutal and unforgiving nature of adolescent society. “In my grade in high school, most girls had their own clique,” a respondent wrote. “At one point, a girl from the ‘popular’ clique had gotten into an accident and had some physical scars from it, including lazy eyes. Her friends would no longer talk to her, and she was always trying to get included into the other cliques. She had been so mean and rude in the past, though, no one wanted to be her friend.”

Contrary to popular belief, most female bullies aren’t hiding their insecurities behind a bunch of bravado. Research suggests that most bullies not only possess average to high self-esteem, many do not view themselves as bullies at all. In fact, when asked about bullying behaviors in their school, the biggest offenders of all will report, “We all get along pretty well.”

The sad part is that most victims’ need to belong is so powerful that they’ll take any amount of abuse from the Queen Bee and her hive. They would rather belong to the top social group – even in a toady position – than to not belong at all.



Of course, not everyone believes the issue of bullying girls is all that important. Some critics argue that it is simply a trendy issue – a media-generated crisis du jour until we have something better to complain about. Others point out that rejection is a necessary, if painful, reality of growing up. They say it teaches us how to defend ourselves, and helps shape who we are.

True, Miller-Boschert says, especially if one has the resilience and self esteem to brave the storm. But, she quickly adds, there’s no denying that some victims are irrevocably scarred by their middle-school years. She quotes survey respondents who reported that their experiences made them hate themselves, distrust other women or even contemplate taking their own lives.

“It’s more than just thinking ‘girls will be girls,’ ” she says. “In the U.S., we almost look at it like a rite of passage. But it doesn’t have to be. It doesn’t have to be part of someone’s life, to the point where they’re considering suicide.”

More disturbingly, girl-to-girl bullying can trigger a dangerous pattern that affects a woman’s entire life. According to Gary and Ruth Namie’s book, “The Bully at Work,” most instances of workplace bullying involve women sabotaging women. Unchecked, a bully will continue to steamroll over others – and likely teach their children to do the same. And, “Once you’ve been a victim as a young girl, you continue playing the victim role throughout your life,” Miller-Boschert says, “until you take the bull by the horns and say, ‘I’m not going to be bullied anymore.’ ”

It’s not as easy to break the pattern as it sounds. First, girls need to be taught how to stand up for themselves, Miller-Boschert says. In some cases, schools have taken on that responsibility by adopting rules or hosting workshops. One of her students teaches in a Minnesota school that follows a well-known anti-bullying program. Program features range from a “bullying box,” where students can anonymously report incidents of harassment to teaching students and teachers the difference between “teasing” (a gentle gibe that both parties enjoy) and “taunting” (an aggressive attack that only the perpetrator enjoys). In Minnesota, Sen. Satveer Chaudhary, Fridley, introduced legislation that would require all Minnesota school districts to establish bullying standards, adopt an anti-bullying policy and provide training for school officials.

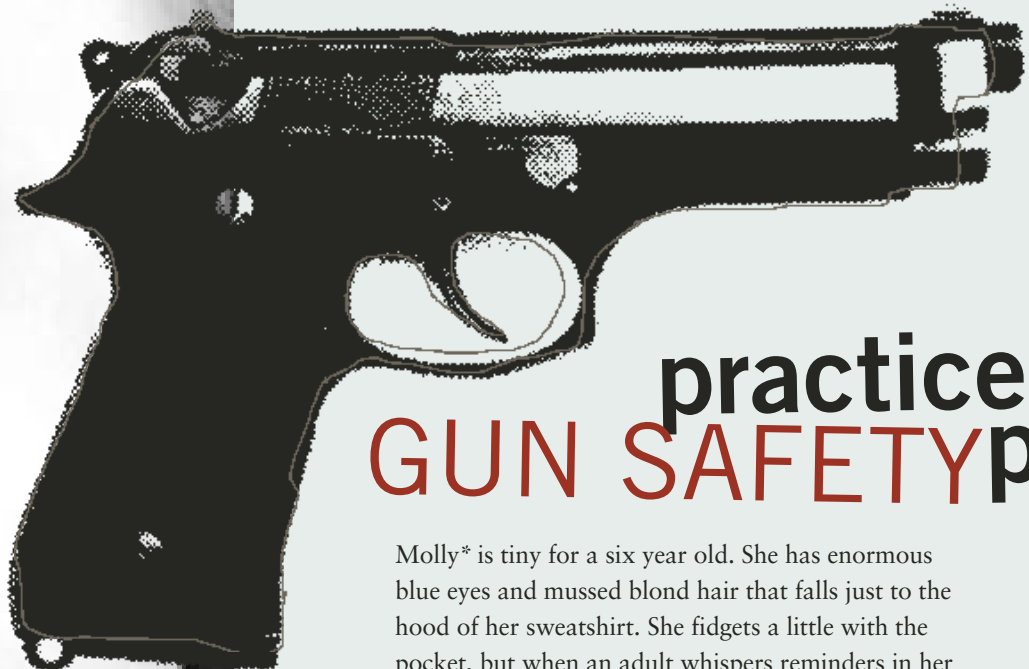
Yet people can’t expect schools to be the sole crusaders against bullying; our most important lessons begin at home. Parents need to be aware of two uncomfortable possibilities: That their child may be bullied, but too ashamed to talk about it, or that their child could actually be a bully.

Children should learn, from an early age, how to be respectful of others, Miller-Boschert says. At the same time, they need to learn how to stand up for themselves. They can be taught how to express themselves assertively, rather than in an aggressive and destructive way.

When asked what can be done to curtail bullying, most of the respondents agree in one area: The best antidote to poisonous relationships is to instill a strong sense of self in one’s child. “Tell them you love them, tell them they’re beautiful,” says Miller-Boschert. “Be there when they need to talk. Just be there for them. They might roll their eyes, but they really want that. They want to know that they’re loved and accepted and that they’re OK.”

— Tammy Swift





# practice makes GUN SAFETY perfect?

Molly\* is tiny for a six year old. She has enormous blue eyes and mussed blond hair that falls just to the hood of her sweatshirt. She fidgets a little with the pocket, but when an adult whispers reminders in her ear, she nods confidently, and is ready to get to work.

Her job is to teach a still younger girl what to do when she sees a gun.

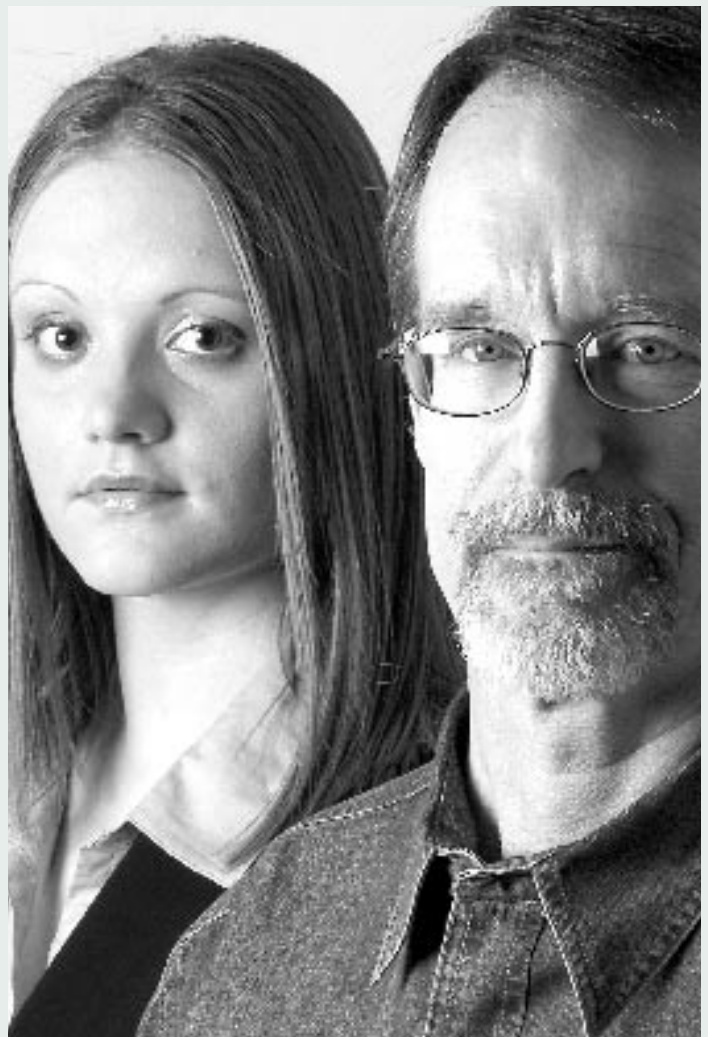
In this practice session, the teacher – little Molly – places a very real looking gun near some art supplies, and then later asks her student to get a box of crayons. Her charge heads for that part of the room but abruptly dashes out. She is practicing the important skills of not touching a gun and running from the gun to report its presence to an adult.

The student succeeds in five of five scenarios, earning not only kind praise from the adult, in this case graduate student Candice Jostad, but also another smiley face for her worksheet. A full course of these stickers, she knows, will earn her a treat bag.

Molly is an experienced trainer. “Good job, you earned a smiley face,” she recites to her student with each successful run from the gun. Neither the teacher nor the student find it amazing – at ages that add up to only 10 – to be doing such important learning.



“MY  
POSITION  
IS NOT  
PRO- OR  
ANTI-GUN.  
GUNS  
ARE OUT  
THERE.  
PARENTS  
AND KIDS  
NEED TO  
LEARN  
SAFETY.”



This scene is part of an ongoing project in the psychology department at North Dakota State University led by Ray Miltenberger, who has spent most of his career working out ways to teach people to avoid dangers. He's studied other prevention situations, like what works in teaching developmentally disabled people avoid sexual abuse, and how to teach children to resist abduction attempts.

When he came upon a television news program about children playing with guns, he knew he had another topic.

"My position is not pro- or anti-gun," Miltenberger says. "Guns are out there. Parents and kids need to learn safety."

So far, Miltenberger's group has proven his initial expectation, that kids can learn to say that they shouldn't touch a gun, but they need to practice to be able to not touch a gun. The researchers have experimented with various combinations of teaching, practicing and testing, adult versus child teachers, multiples of practice, frequency of sessions, locations of lessons.

Miltenberger wants to find the formula that ensures the kids will "ptweh, zzzzzting outta that room and yell 'there's a gun.' "

Practice, practice, practice.

The study is evaluating a procedure in psychology called behavioral skills training. It's a straightforward concept. As Miltenberger says: Would you want an operation from a surgeon who has only read a book on the subject? Would you expect a basketball team to just talk about good defense? Would our military succeed if training consisted only of reading and repeating strategies?

Once Miltenberger gets started on analogies, the examples flow quickly.

Picture yourself behind the wheel of your car, buzzing along nicely, and then you hit a little patch of ice. Do you think to yourself "The proper procedure when the rear of your vehicle begins to fishtail is to turn the wheel toward the spin," and then slowly, deliberately, perform based on the words you memorized from the manual? You'd be in the ditch long

before you had time to think. The thing is, you've had enough practice to just do it.

This idea – being able to react as you need to because you've practiced – is the basis of behavioral skills training. "You've got to do it, and in a simulated situation so it's like what you really experience," Miltenberger says.

Two studies of existing programs, which were using the first two elements of behavioral skills training – instruction and modeling – found that kids "just can't say no" to touching guns. Miltenberger's study is finding that the next two parts – rehearsal and practice – must be added. "You need all four to get behavior to change," Miltenberger says. "Practice, practice, practice."

In the case of gun safety, this idea goes a step further than the regimen suggested by the National Rifle Association, through its Eddie Eagle GunSafe Program, which uses only the first two steps: it tells kids to stop, don't touch, leave the area, find an adult and shows the steps through coloring books and cartoons.

Miltenberger's behavioral skills training research has attracted a bit of media attention, including a Web piece by the news service Reuters, an article in the New York Times by columnist Jane Brody and an article in the May 2004 issue of Parenting Magazine, "Straight Talk About Guns." That article brought reaction from the NRA, which sent postcards to users of the Eddie Eagle program asking them to write letters to Parenting Magazine in support for the program. Although few letters were actually published in Parenting Magazine, the NRA's own publications continue to support the Eddie Eagle program and criticize the research that questions its effectiveness.

While plenty of others do take issue with Eddie Eagle, Miltenberger, as a scientist, says he's not out to criticize other programs. "The existing message is a good one, but without making them do it, they're not learning the skills. They're just learning to talk about it," he says. "With kids, we can't rely on talk to indicate action. One is not a good indication of the other."

— Laura McDaniel

# in depth

## PSYCHOLOGY RESEARCHERS STUDY THE EFFECTS OF ALCOHOL ON EYE MOVEMENT

The fifteen volunteers knew what going to the eye doctor was like. But this was, well, different. In a small and narrow basement laboratory not even as big as a bedroom, the darkness of four walls wrapped in black felt material makes it vaguely claustrophobic. The hum of computer fans and shafts of light from monitors add little in the way of ambiance. Sitting down in front of a computer screen, each volunteer wears functional, but clearly unfashionable, goggles.

A series of black dots passes from one side to another on the computer monitor, with each tiny movement of the eyes measured, as the goggle-clad volunteers intently follow the floating dots. Streams of data are pumped into computers, resulting in paper strips with print-outs resembling those from an EKG machine. More tests ensue. Some are familiar, like placing one's chin and forehead in a tracking device that moves from side to side, similar to a test in the optometrist's office. Others are a jumble of passing dots. After two hours, it is time to go home – at least for now. The volunteers know that their second visit here will be very unlike their first.

The fifteen participants return to the visual neuroscience research lab at North Dakota State University soon enough. No muscle-bound bouncers are present



for the second visit, although IDs are checked and the volunteers are scrupulously screened. There is only one choice of beverage to order here. Each volunteer receives a dose of ethyl alcohol according to body weight. Ten minutes later, another dose. Out comes the large beige steel box exotically named the Intoxilyzer® 5000, an infrared evidentiary breath analyzer. Breathe into it, measure and record. In another ten minutes, administer another precisely-measured dose of alcohol. Out

## **THE VOLUNTEERS KNOW THE DRILL. ... BREATHE, MEASURE AND RECORD YET AGAIN, UNTIL A BLOOD ALCOHOL CONTENT APPROACHING 0.1 PERCENT IS ACHIEVED BY EACH PARTICIPANT.**



comes a Lifeloc FC10, unfortunately familiar to anyone ever stopped by law enforcement and asked to blow into a portable breathalyzer. The volunteers know the drill. Breathe out, measure and record. Another dose is administered. Breathe, measure and record yet again, until a blood alcohol content approaching 0.1 percent is achieved by each participant. Try following the dancing black dots across a computer screen after that. More eye movement measurements, more data, more waiting. Then it's time to sober up. Researchers call cabs to take everyone home.

Mark Nawrot thought a research study involving 100 proof vodka and orange juice might raise a few eyebrows, particularly on a college campus. But he was focused on finding the answers to some questions. Little did he know the answers he found would appear in media around the world.

As a neuroscience researcher and associate professor in the Department of Psychology at NDSU, Nawrot studies how the eyes and the brain work together. He and researchers Benita Nordenstrom and Amy Olson are

particularly intrigued by the crucial connection between eye movements and depth perception. What would happen if alcohol disrupted it?

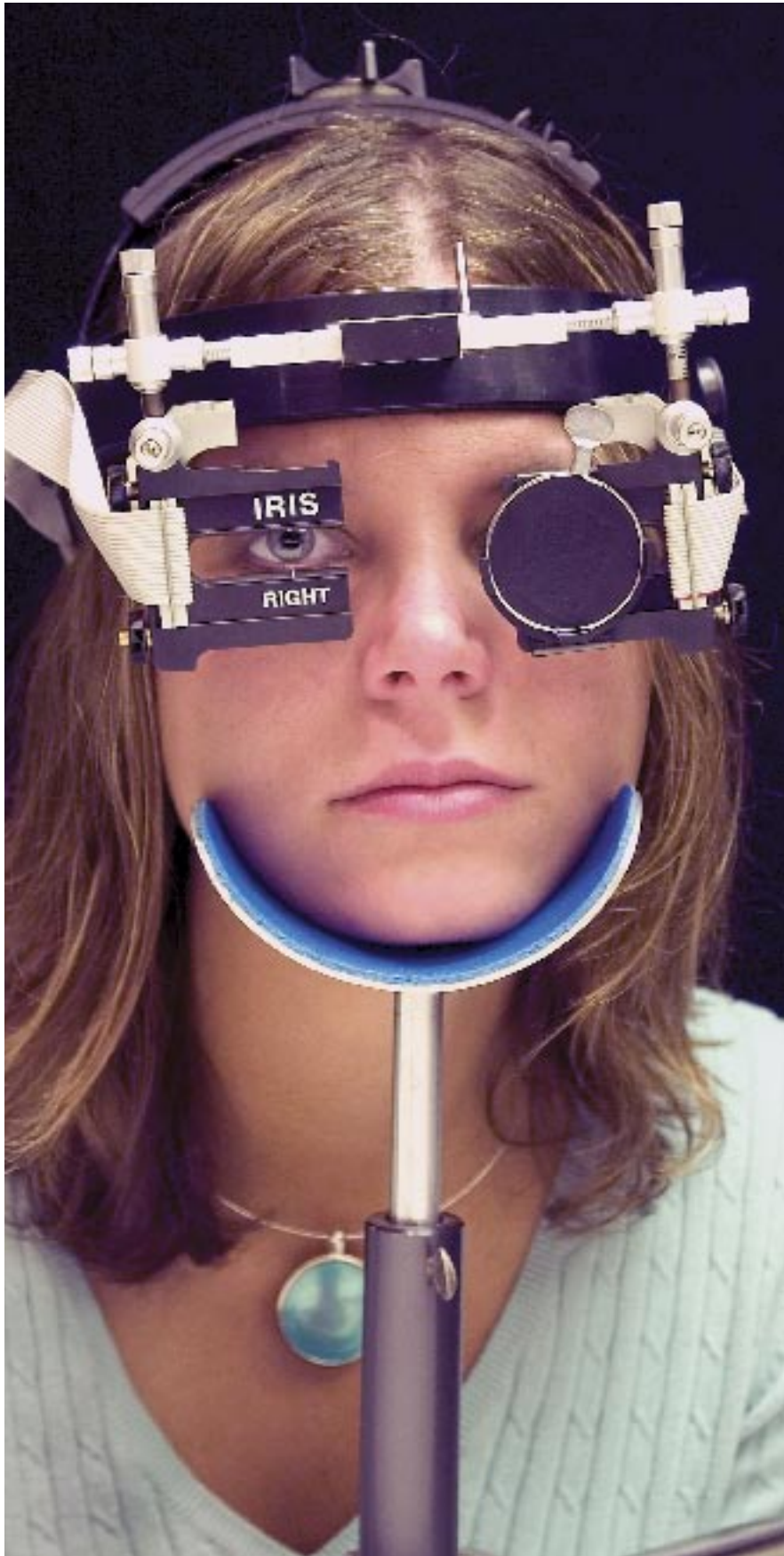
Nawrot patiently explains the science of eye movements, with infectious enthusiasm for the subject. "Eye movements track in two speeds – fast, called saccadic, and slow, known as pursuit," he says. "We use fast eye movements to dart our eyes and direct our attention to an object," he says. "We use slow eye movements to fix our gaze and track moving objects." As we read a book or a magazine article, for example, we use fast eye movements as our eyes jump from point-to-point, following each line of text. A basic understanding of eye movements is one step to understanding the perception of depth, which relies on the slow eye movement system.

Try remembering the first time you parallel parked a car or made a left turn without a green-arrow light in rush-hour traffic. Judging your spatial relationship to other objects can result in successful driving or in a fender bender. It is the practical application of one type of depth perception known as motion parallax-depth perception caused by our own motion.

When going about our daily routines, the visual perception of depth is usually quick and effortless. We judge it almost automatically, or at least our brain interprets it through our eyes. Whether walking or driving, we constantly use motion parallax to judge what's nearer or farther. What's our spatial relationship to the door or the tree or that car?

The messages received from our eyes and processed at lightning-fast speeds by our brain allow us to move about without running into things. What's going on in our brain as we unknowingly calculate this depth? And what is the impact of alcohol on our ability to do it?





Such questions led to the motion parallax experiments by Nawrot and his research team. Methodology for the study was painstakingly developed. The flyer posted to recruit participants noted anyone under 21 need not apply, among other restrictions. But before volunteers could even be found, Nawrot provided details of his proposed research before the university's Institutional Review Board. Made up of faculty, medical and clergy members, it examines proposed studies involving human research subjects. The board concluded that appropriate safety measures were in place, in compliance with federal and school guidelines. Approval to conduct the study also hinged on review by university administration, which granted approval.

Although one might think there would be legions of volunteers on a college campus for a study where they're asked to drink alcohol, the stringent criteria ruled out many people. Participants committed to separate 3-hour and 2-hour time periods and extensive vision testing. The average age of volunteers in the study was 24.

The volume and types of eye movements measured in the experiments were significant. Pursuit eye movements were monitored and recorded. Just visualize a quarterback passing a football or think of watching other vehicles on the road while driving. Both use pursuit eye movements. Then imagine a wide receiver in a football game as he runs while following the ball and trying to catch it. These compensatory eye movements, as they are known, are what we use when we drive to allow for our constant head movements.

The researchers also measured other factors such as binocular disparity, which is the difference between the viewpoints of our two eyes. Crunching all that data provided some interesting research results.



**“I STILL FIND IT FUNNY THAT THE WORDS ‘MOTION PARALLAX’  
COULD APPEAR IN THE GENERAL PRESS. DRUNK DRIVING MUST  
BE AN ISSUE IN MANY COUNTRIES.”**



## MAKING HEADLINES

The editor of the flagship journal *Psychological Science*, in which Nawrot's research was published, noted its importance. He called it "a near perfect blend of an applied and theoretical advance. ..." A peer reviewer commented that "results are of importance on theoretical grounds. ... and are also of practical importance because they provide additional evidence about a specific type of deficit alcohol can induce in a drinking driver."

That connection between depth perception, alcohol and driving made headlines. "Perceptions: Drunk, and Out of Your Depth" appeared in the *New York Times*. "Alcohol impairs depth perception" said CNN, the Canadian Broadcasting Corporation and the BBC in the United Kingdom. "It's all Greek to me," was the subject line in one e-mail that contained a story from a publication in Greece. It was only the beginning. Research results discovered by the team at NDSU's Center for Visual Neuroscience appeared in media around the world, with information published in German, Russian, Spanish and Italian. "Why drunk ones more frequently against lantern stakes drive," was one headline translated from a German publication's Web site. Publications in Slovenia, India, Turkey and Asia covered it. Nawrot also received media inquiries from Ireland and Switzerland.

He is pleasantly surprised by the attention. The pages of the *New York Times* reach a different audience than that of scholarly journals. "I still find it funny that the words 'motion parallax' could appear in the general press. Drunk driving must be an issue in many countries," he says. A news release summarizing the study found its target audience shortly before New Year's Eve by mentioning statistics from the U.S. National Highway

Traffic Safety Administration which showed that from 1998 to 2003, on New Year's Day, 42 percent of fatalities involved a drunk driver, compared with 31 percent during the entire year.

## HOW IT APPLIES TO REAL LIFE

Although experiments were conducted in a lab, they offer another clue as to why drunk drivers are likely to be dangerous. At a blood alcohol content approaching 0.1 percent, motion parallax became at least 4.5 times worse. "Participants were nearly motion parallax blind," says Nawrot, giving additional meaning to the phrase "blind drunk." This aspect of alcohol intoxication was previously unknown. "In addition to well-known problems such as impaired decision-making, poor coordination and balance, the study shows that intoxicated drivers have difficulty judging the relative depth of objects that they are trying to avoid while driving."

It may be only one part of a broader, but less understood, set of visual perceptual problems caused by alcohol on the eye movement system. Study of alcohol's effect on eye movement could lead to a better understanding of the precise blood alcohol levels at which drivers become impaired, says Nawrot.

## THE ROAD AHEAD

Research into the role of eye movements in motion parallax is relatively new. Only four studies have been published on the subject, three of them by Nawrot, in the *Journal of Vision* and *Vision Research*. It's only relatively recently that researchers have been able to look at eye movements, he says. Earlier equipment to measure them was cumbersome and expensive. The technology progressed and the cost of equipment decreased. "It was the right idea at the right time with the right technology."

An overnight success, if you will, after eight years. Patience is a virtue, as our mothers once told us. Ask any researcher. Nawrot estimates it took methodical, detailed, continual research over four years to develop the new theory of the role eye movements play in depth perception. His recently-completed study funded by the National Institutes of Health's National Eye Institute was a way to test that new theory. Disrupt the eye movement system with alcohol and measure the effect on the perceptual system. Initial design of the motion parallax study and the actual experiments took two years. Add another year to analyze the tremendous amount of eye movement data. Tack on another year for peer review and publishing of results.

Still, Nawrot's enthusiasm doesn't wane. He acknowledges the complexity of that relationship between the brain and the eyes results in more questions than answers. "I'll grab a brain here," he tells a visitor, locating a plastic model in his office for a more detailed 3-D example. "The frontal eye fields are one region that receive and feed information to other brain and brain stem areas for eye movement," he says, cradling the model in his hands. "The movements themselves are driven by nerves coming out of the brain stem. There are just twelve pairs of cranial nerves in the brain and one-third of them are involved with vision and eye movement. We have another twenty or thirty years of study to go on this."

— Carol Renner

## Excerpts



### **GEN. CHARLES F. WALD**

*Gen. Charles F. Wald recently returned to North Dakota State University, his alma mater, to receive an honorary doctorate. He is a four-star Air Force general, currently serving as deputy commander of the U.S. European Command, which oversees U.S. military operations in ninety-one countries and territories in Africa, Asia and Europe.*



North Dakota's a very patriotic state.

9/11 was an obvious wakeup call.

There was Kennedy getting killed and the Berlin Wall falling and 9/11. How's that? Significant social events in my life in a negative way I guess.

We were in the Pentagon when it got hit, on the opposite side of the building so I was never affected. It was pretty amazing.

My reaction was, first of all, unbelievable, shocked that something that unbelievable could happen. Number two is knowing that there was going to be a reaction. There was going to be a military reaction.

And a lot of anger.

It was a galvanizing event for America, the military and everybody, there was no doubt that America was going to have to respond.

I don't think America and the rest of the world have come to grips with the problem yet, frankly. We know it's a problem, but we don't understand the enemy very well.

We have to adjust to what in military terms is called the asymmetric threat. Symmetric is kind of the old Russian thing, they've got a big force, we've got a big force, we use similar capabilities. Whoever has the biggest muscles is going to win.

They operate, terrorists do now, in a criminal environment. They don't have a state, they're not defined by a country. They don't follow laws. Matter of fact, where they operate in is a lawless area. That's how they can get away with it. Even though they're not necessarily criminals, they operate in a criminal element. That's how they get their money, that's how they move around. The United States military doesn't operate in that arena. We operate in the arena of international law.

The Western world has to develop the capabilities to fight in that arena and still maintain who we are from an ethos standpoint. It's very difficult. We've had some hiccups. No doubt about it, the Abu Ghraib prison issue was very disturbing. There's no way to rationalize it or excuse it, that's not the issue. The element you're working in almost drives you to that. You have to be very careful not to cross over the line and lose who you are.

You have to develop that mindset of confidence. You have to have a firm belief that you can change things for the better. You have to have a little of idealism, a little naivete. If you're in a position like mine and you don't think that way, you probably won't stay there very long.

I think we're safer than we were, but I think we also know a lot more. We're probably more attuned to the fact that some bad things happen in this world. We're a little bit in a scramble for time.

There's no clear ending of this right now. There isn't any way somebody could say in five years we're going to wipe all these guys out.

When you are as fortunate as we are you need to have a certain degree of magnanimity and humility.

The irony is we don't do a very good job of telling the story. Americans are the most generous people in the world by a long shot. America does a lot of things in the world that we just never publicize.

The United States military has a keen understanding of that which we do very well. We learned a lot in Vietnam about image and message and people understanding what you do and building consensus.

The people in the United States are pretty self-critical which is a good attribute, because if you don't criticize yourself you never get better.



## technology: a new discovery in archaeology

Let's play a word association game.

Stroll the NDSU campus and ask the first five students you see to blurt out what pops into their minds when you say the word "archaeologist."

"Dirt," "digging," "bones," "history" and "Indiana Jones."

Except for Indiana Jones – who had yet to leap onto the big screen of swashbuckling, fictional archaeology – the words are not wildly divergent from the scenarios that populated Jeff Clark's mind when he began his career as an archaeology professor twenty-two years ago.

Clark anticipated teaching some classes, sifting some dirt and digging for bones and artifacts in the conduct of research, and then publishing his findings in research journals. In his mind's eye, the younger Clark envisioned what he thought would be the typical life of an archaeology/ anthropology professor.

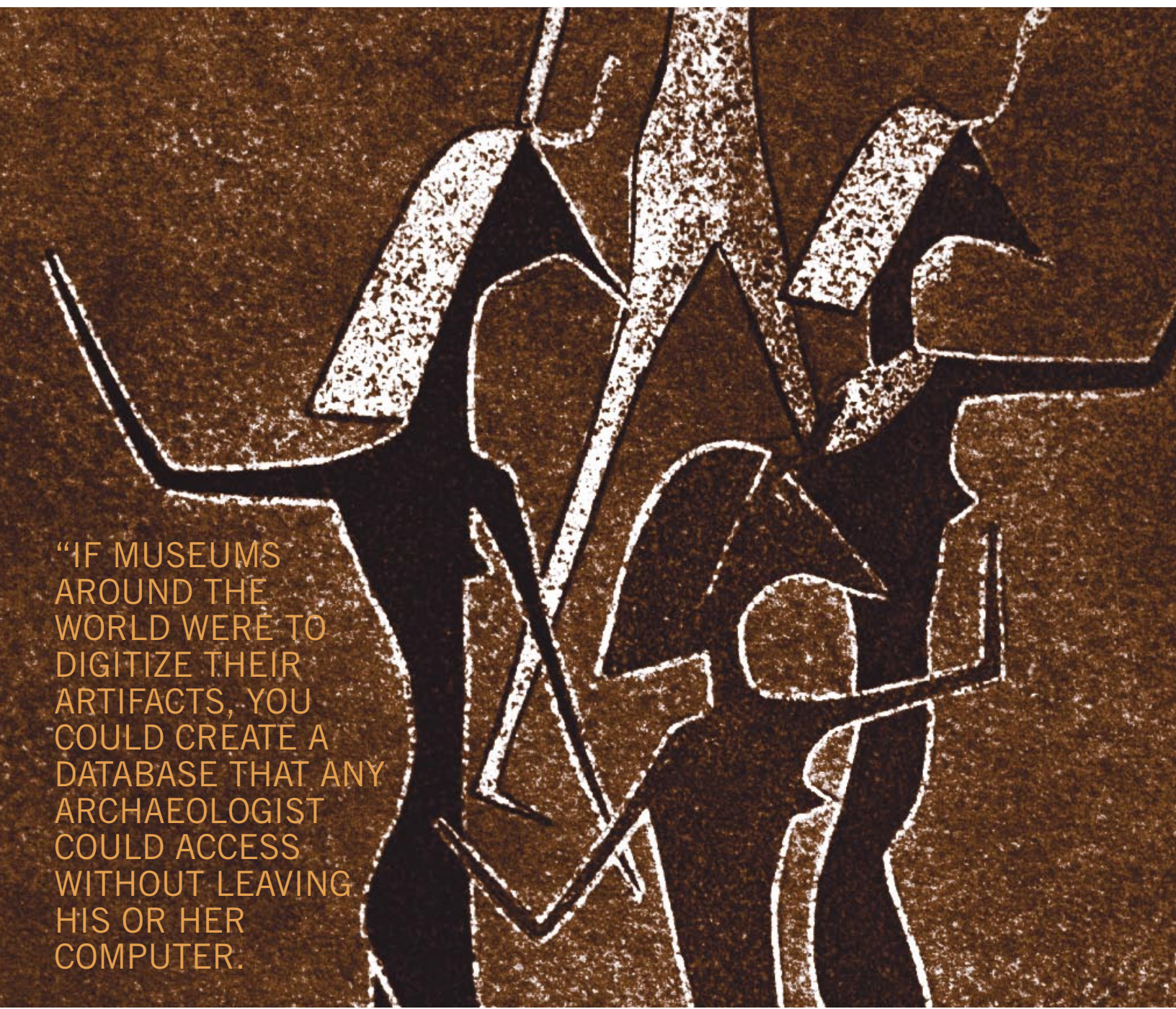
As he and his wife, Ann, moved from Illinois to Fargo to embark on what was supposed to be a brief resume-starting stint at North Dakota State University, they were thinking what most young couples think. Establish a career, get the paychecks rolling in, find a comfortable home and begin filling it with children. Jeff and Ann Clark did those things.

Little did the mild-mannered Clark know that today, at 54, he would emerge as the Superman of futuristic, high-tech archaeological and anthropological research-sharing technologies. Little did he know that he would become an international leader in a Digital Archive Network for Anthropology and World History, known as DANA-WH. Little did he know that he would build and oversee a million-dollar Archaeology Technology Lab on the NDSU campus and become a global beacon for using computers to share artifacts.

Clark wholeheartedly believes that technology can be used so scientists around the world may share access to artifacts, and that technology will play a vital role in presenting archaeological interpretations to the public in easy-to-understand, even whimsical, ways.

His work has not gone unnoticed. He received NDSU's Waldron Award last year for outstanding faculty research on campus. Next year, Clark and his team will host the Conference for Computer Applications and Quantitative Methods in Archaeology. It's the first time the conference has been held outside Europe, largely because European archaeological researchers want a firsthand glimpse at the innovative happenings in North Dakota.





“IF MUSEUMS  
AROUND THE  
WORLD WERE TO  
DIGITIZE THEIR  
ARTIFACTS, YOU  
COULD CREATE A  
DATABASE THAT ANY  
ARCHAEOLOGIST  
COULD ACCESS  
WITHOUT LEAVING  
HIS OR HER  
COMPUTER.

IT PULLS TOGETHER A VAST  
AMOUNT OF DATA THAT IS ACTUALLY  
SCATTERED AROUND THE GLOBE.”



## NEW TOOLS, NEW POSSIBILITIES

Like a swooping, soaring hawk, the “virtual” camera assumes a birds-eye view for the opening scene of the “On-A-Slant” video.

The camera, like a curious bird, takes viewers for a lilting ride far above the simulated Mandan earth lodge village. The aerial view begins from afar, scanning the sweeping vistas of the Heart and Missouri river landscape. As it nears the earth mound village, the camera flits and floats from the river, where a man paddles a bullboat, to the roof of an earthen lodge where children loll on the timbers. It pauses to examine votive poles, corn-drying racks and the exterior accoutrements of several lodges.

With the music of Native American flutist Keith Bear setting the tone, the camera alights on the ground and ushers guests inside select earth lodges. Once inside the lodge, the pace slows. Viewers have time to take in details such as the central fire pit and cooking area, sleeping quarters lined with animal skins and makeshift corral area where horses were kept indoors in case of harsh weather or Sioux raids.

The “On-A-Slant” video producers labored to give viewers a true sense of being inside a cluster of Mandan earth lodges in 1776. The video was produced on two separate digital recorders – one for the right eye and one for the left eye. Thus, the video projector incorporates two DVD players, one for the right eye and one for the left. That means people who watch the movie need those funky black plastic-rimmed 3-D glasses.

The “On-A-Slant” video is perhaps the most high profile of the NDSU Archaeology Tech Lab’s work thus far. Other projects in the works include:

- Development of a computer game tentatively called “Virtual Archaeologist” for high school and college students. The game allows students to experience an archaeologist’s world while on a dig – excavating, analyzing and interpreting artifacts.
- Development of “Virtual Dancer,” an interactive archaeological/aerobic dance video to help curb the growing problem of diabetes among Native Americans. The computer game was the brainchild of elders from the White Earth Band of Chippewa. They wanted to keep alive traditional dances, and encourage vigorous exercise for children. The game would meld demonstrations of traditional dances, archaeological information, native music and diabetes prevention education. Completion of the project hinges on whether the lab receives a \$3.5 million grant from the National Institutes of Health.
- Development of a program that would allow visitors at national parks or historic sites to use their PDAs to view a digital simulation of what once existed on the very spot they are standing. The technology would bring artifacts out of museums and onto handheld computer screens, allowing park visitors to relate the artifacts to the present-day environment around them. Data also would be available about the region’s flora, fauna and geology. Production will start this summer, contingent on a National Science Foundation grant.



A scene from the “On-A-Slant” video project

## FROM NDSU TO THE WORLD

Before the digital archive network was born, researchers had to travel to far-flung museums or artifact repositories to conduct research. Today, the digital archive network makes artifacts accessible via a mouse click and computer screen. At the NDSU Archaeology Technology Lab, artifacts are scanned from all sides with a digital laser scanner and entered into the database, enabling users to rotate and view objects from many angles.

Clark draws inspiration from the paradox of using emerging technology to bring alive artifacts from the buried past. “If museums around the world were to digitize their artifacts, you could create a database that any archaeologist could access without leaving his or her computer,” Clark said. “It pulls together a vast amount of data that is actually scattered around the globe. We can’t travel back in time, but using computer applications ... we can create this world the way it may have looked ... and give you the feeling of being in that time and place.”

The NDSU Archaeology Technology Lab has been featured on CNN, BBC, MSNBC and in the national magazines *American Archaeology* and *Animation Magazine*.

## A CHILDHOOD DREAM GOES HIGH-TECH

“Archaeology is what I wanted to do since the sixth grade. My career has changed since then, with the technology,” Clark said.

That he is today known for archaeology technology rather than his love of research on the coast of Samoa surprises Clark’s colleagues – and Clark himself. After all, he makes no claim to be the office techie in NDSU’s Department of Sociology and Anthropology. To be sure, he is quite competent on his office computer on Minard Hall’s fourth floor. Down the street in the Archaeology Technology Lab, he can name every piece of equipment and its uses, but he can operate very few. In fact, his staff – who revere him as a visionary – sniggle and sneak sheepish glances at one another, then finally admit that Clark can’t operate any equipment in the lab except his desktop computer.

And that’s just fine with Clark. His role is to dream, gather grant money and hire computer wizards to enable the operation to soar.

“I do this for the challenge of doing new things,” Clark says, “doing it differently, coming up with new things that other people haven’t done before and the challenge of starting and funding a new project.”

Besides Clark, seven graduate and undergraduate students work in the lab; three are full-time employees whose salaries are paid by grant money, largely from the National Science Foundation, and from proceeds of contract work for firms and historical entities who desire the lab’s expertise. The three full-timers – archaeology graduate students Aaron Bergstrom and Jim Landrum and 3-D cultural architect Doug Snider – have been with the lab since the get-go in 1998. Brian Slator, a computer science professor, is co-leader on most projects, and William Perrizo, also of computer science, played a role in the beginning of the tech lab’s projects.

With a lab full of “gee-whiz” equipment, Clark has never had to recruit student workers. “They pretty much find me,” he says. Perhaps the lab’s greatest student draw is \$200,000 worth of Maya software. Maya software has been used for special effects and animation in movies such as “Shrek,” “Star Wars” and “Lord of the Rings.”

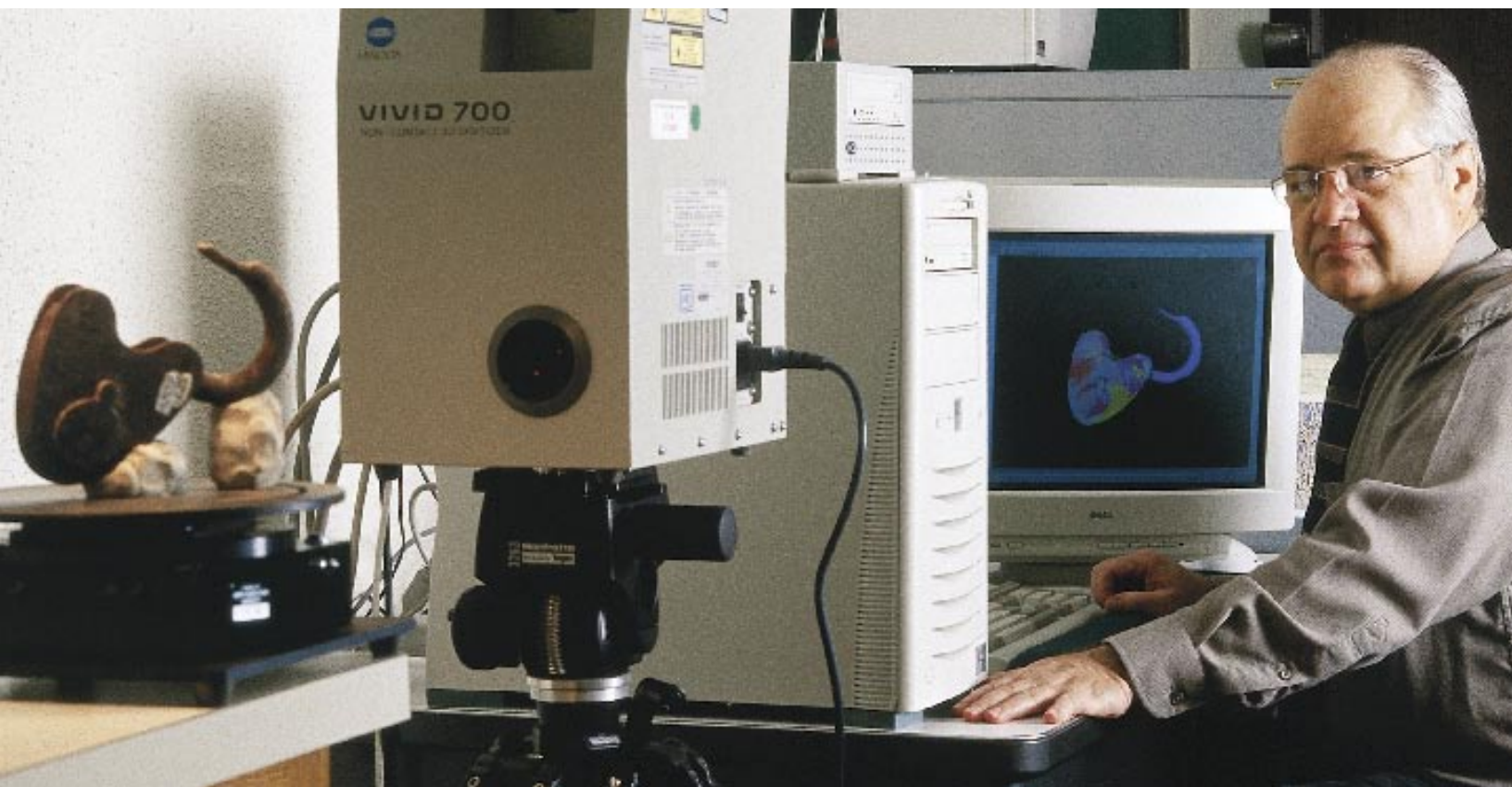
## CONSTRUCTION WITHOUT LUMBER

Snider, the lab’s 3-D cultural architect, spent the better part of 2004 and 2005 building Mandan Indian earth lodges. However, he didn’t move a speck of dirt or a stick of timber. In fact, he didn’t move out of his office chair. But he clicked thousands of computer keys – and voila – earth lodges and the families who lived in them became the setting and characters for a 3-D movie set at what is now Fort Abraham Lincoln State Park Museum near Mandan, N.D.

Snider’s construction occurs in the “virtual” world, amid a cluster of computers, laser scanners, digital visual recorders, projectors and high-tech gadgetry that most people couldn’t identify or dream of operating.

Snider and his colleagues created a 3-D simulation video that allows viewers a virtual tour inside the Mandan tribe’s On-A-Slant earth lodge village. The video was shown during the Circle of Cultures event, Oct. 22-33 in Bismarck





**“THIS IS VERY NEW IN THE WORLD OF INTERPRETING ARTIFACTS.**  
THIS IS PROBABLY THE MOST TECHNOLOGICALLY DEVELOPED ARCHAEOLOGY-TECHNOLOGIES LAB ANYWHERE IN THE COUNTRY.”

and Mandan, commemorating the bicentennial of the Lewis and Clark expedition into the American West. Part of the mission of Circle of Cultures was to renew bonds of cooperation between the earth lodge people – the Mandan, Hidatsa and Arikara nations – and the Lewis and Clark expedition. Those bonds were forged during the winter of 1804-05, when Lewis and Clark and their men stayed among the Mandan and Hidatsas along the Missouri River north of Bismarck.

#### PEEKING INSIDE LONG-LOST EARTH LODGES

Using Maya software’s virtual creation and animation features, the video allows film watchers to see how people lived in Mandan earth lodges about 1776, a quarter century before Lewis and Clark’s entourage paddled up the Missouri River.

Another key piece of lab equipment is a highly accurate Minolta laser scanner that

captures images of artifacts in three dimensions and in their true colors.

Besides “building” lodges on his computer, Snider outfitted the interiors of several simulated lodges, allowing viewers to see the interior layout and furnishings of earth lodge homes. Although the process was painstaking, technical and time consuming, the end result for viewers was a true-to-life onscreen home tour. Think of it as a historical video version of the “parade of homes” that builders commonly use to showcase model homes. Anybody who likes to peek inside others’ homes and imagine how other folks live will enjoy the “On-A-Slant” video, now a permanent fixture at Fort Abraham Lincoln near Mandan.

“This is very new in the world of interpreting artifacts,” Clark says. “This is probably the most technologically developed archaeology-technologies lab anywhere in the country. Money is the only limitation. We want to do

more. One of our goals is to be able to create virtual worlds for museums around the world. (In fact, NDSU recently made such a pitch to a local museum and to one in Germany.) Our interest is in helping people understand the past. More than seeing a few artifacts in a display case, this (3-D imaging) lets people see how people lived and interacted.”

For example, as Snider “built” earth lodges on his computer, others in the lab scanned artifacts, such as tools and house wares used by Mandan Indians of the period. A number of artifacts were borrowed from the North Dakota Historical Society in Bismarck for scanning and use in the “On-A-Slant” video. One such artifact was a hoe made from a bison scapula and used in the Mandan gardens. When Lewis and Clark arrived at On-A-Slant in October 1804, they saw only the remains of the village. Decimated by a smallpox epidemic, surviving Mandans had moved north to join forces with the Hidatsa and Arikara people. Over the past year, NDSU Archaeology Technology Lab staff and students brought the village back to life for people who view the 3-D video at Fort Lincoln.

#### **NORTH DAKOTA HISTORIANS DIG IT, TOO**

Tracy Potter, executive director of the Fort Abraham Lincoln Foundation, said the “On-A-Slant” video finally puts the focus on American Indian people who shared their hospitality and expertise about the Upper Great Plains in helping the Lewis and Clark corps stay alive during the winter of 1804-05.

The virtual 3-D video “is timely because of Lewis and Clark,” said Claudia Berg, director of the museum and education division for the North Dakota State Historical Society. “We have a great civilization here. We have a rich and deep history.”

Before sitting down to their computers and laser scanners, the NDSU archaeologists conducted thorough scholarly research on the site, the native population and the era. Clark and his team worked to ensure the virtual reconstruction would be as historically accurate as possible. In addition, the team drew on related research regarding the similar Like-A-Fishhook Village, north of Bismarck. Like-A-Fishhook

Village also will be virtually reconstructed by the NDSU lab.

Potter calls the 3-D video “cool.” He anticipates school-age children being especially drawn to it, along with people in their mid-50s who remember donning 3-D glasses for 3-D movies during their childhoods.

Berg, who works with school children and adult visitors at the state Heritage Center on the state Capitol grounds, anticipates the virtual video will be a hit with visitors of any age. The Heritage Center plans to eventually install a kiosk in which viewers may see a virtual depiction of Like-A-Fishhook Village. Alongside the kiosk will be actual Like-A-Fishhook artifacts discovered before the Missouri River was dammed and Lake Sakakawea flooded the site.

“The technology will capture the younger visitor’s attention and provide a method of interaction that children are accustomed to using,” Berg said. Technology has a role to play in interpreting history, she added.

“For me, the biggest asset this virtual presentation can provide is reconstructing a site that no longer exists,” Berg said. “It could provide the viewer with a look at the village – seeing relationships to homes. Were they log structures or earth lodges? How close together were they? What were the sounds of this village? How can we read the objects left by the people who lived there? By combining other resources, such as photographs and oral traditions with archaeology, what are the stories this village can tell?”

Although the lab’s success keeps employees busy with a long to-do list, Clark says “thinking of the future possibilities keeps me awake at night.”

— Deneen Gilmour



# DRAMA kings



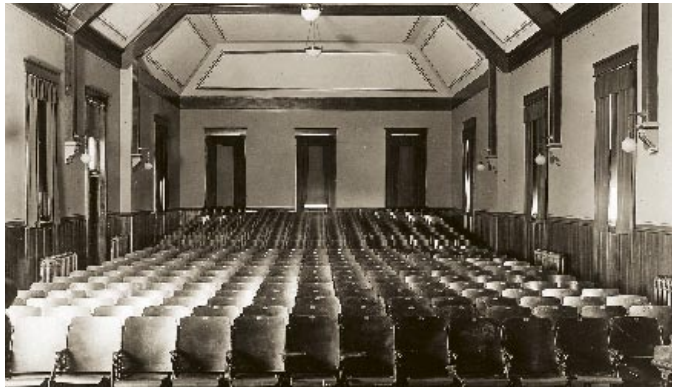
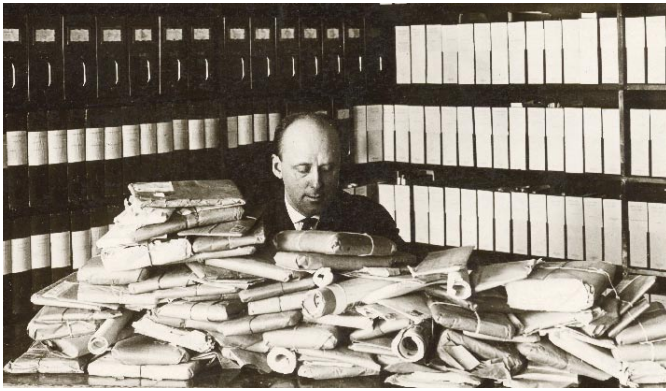


Little Country Theatre, December 1925

Alfred G. Arvold pulls a handkerchief from the breast pocket of his suit. He wipes away the dust stuck to his perspiring face, then absently stuffs the grimy cloth back into place. His eyes follow a covered wagon rounding a corner in the amphitheatre as the audience cheers. It was Arvold's idea – one of many masterminds of this arts pioneer – to develop this spot in north Fargo, to turn these fifty acres along the Red River into El Zagal Park, with El Zagal Bowl at its heart. Scanning the crowd, he smiles. On this warm, 1930s day, it looks like the whole town has turned out.

Standing some distance off, 7-year-old Bev Halbeisen is mesmerized by the swirl of stage-coaches, covered wagons and horseback riders. With its cast of hundreds, all clothed in colorful costumes, it's the most awe-inspiring thing she's ever seen. When her parents point out the large, balding man they say is in charge, she strains for a glimpse, never dreaming that one day she'll be one of his prize students at North Dakota State University.





Photos courtesy of NDSU Archives

Today Bev Halbeisen Blanich lives across the street from El Zagal Bowl. “I still call it the bowl,” she says, even though the Shriners turned it into a nine-hole golf course years ago. From her living room window, she can look out and remember that first, flashy introduction to A.G. Arvold, general director of speech and theatre at NDSU.

As a member of the class of 1945, Blanich knew Arvold could be heavy handed and demanding, and at times “a little weird,” but she also found him a wonderful teacher and supportive mentor. Plus, he was famous. She’d seen the book of plays George Bernard Shaw presented to Arvold when he visited England in 1930. Shaw had inscribed the volume to “the minister of fine arts to the country communities of America.” So, like many other alumni, Blanich felt horrible when the university forced their beloved teacher to retire. The poorly handled transition cast 70-year-old Arvold and 37-year-old Frederick G. Walsh against one another. Walsh was highly-qualified, a war veteran with three master’s degrees and a doctorate in theatre, but when he first presented himself for duty, Arvold looked him hard in the eye and said, “Don’t unpack your bag, young man. I’m going to have you fired.”

Arvold never recovered from his unceremonious unseating, and Walsh – haunted by Arvold’s 45-year dynasty and national reputation – struggled to escape the legend’s shadow. Had they met under different circumstances, the two might have become friends or, at least, respectful colleagues. Both were creative, tenacious and supremely confident human beings. Both believed in theatre of the people, by the people and for the people. Both made an indelible mark on dramatic arts on campus and across the state. They were the kings of theatre in North Dakota from 1907 to 1978.

NDSU President John H. Worst hired Arvold in 1907 because he saw his fledgling land-grant college not just as a place to train good farmers and teachers. He wanted to make farm life and its labors a “business to be envied,” and knew one way to do that was by involving students in the arts. Arvold embraced the idea of theatre as diversion from life’s daily toil. He figured the greater the spectacle, the more people would be drawn to the transformative experience.

Arvold was never short of big ideas. Just a few months after he arrived on campus, he persuaded most of the student body to volunteer for his Cyclone Circus. On a chill March day, his costumed performers slogged the three miles of unpaved road to Fargo and back in a pre-performance parade, then gave

two shows featuring fiery dragons, polar bears, sea serpents and more. Featured acts included the “blood-curdling dip of death” and “The Resurrection – not one of the shocking details left out.”

Arvold based his “cheerful country life laboratory” in Old Main, the turreted administration building in the center of campus. A former chapel on the second floor became the theatre, where he prepared his young protégés to put on festivals, plays and pageants in their own hometowns. For his office, Arvold chose a circular room in Old Main’s clock tower. He filled his inner sanctum with favorite books on magic, ballet, opera and anthropology and covered the walls with photographs signed by the world-class performers he enticed to appear in NDSU’s Lyceum series.

The demands of running his “humanizing agency” meant he had to rely on a cadre of assistants to execute the many class plays, commencement programs and club cabarets staged each year. But every spring and summer break, Arvold was front and center as he and his student actors toured up to 40 towns, presenting modest one-acts and assessing community needs.

In 1913 the state Legislature allocated \$3,000 to expand and improve Arvold’s theatre. Christened the Little Country Theatre on February 10, 1914, the refurbished auditorium featured a 17-foot stage, with no wings to speak of, and seating for 350. Its most impressive architectural feature was six magnificent stained-glass windows, which Arvold convinced local community groups to donate. Perfectly reflecting Arvold’s interests, they featured classic playwrights – Goethe, Ibsen and Shakespeare – as well as Abraham Lincoln, the Statue of Liberty and Justin Morrill, author of the act that created land-grant universities.

He’d been in the national press before, but in 1916 McCall’s Magazine made Arvold the talk of housewives all across America. Framed in soap-opera-like narrative, the three-page article extolled Arvold’s Little Country Theatre Package Library, a free lending library that made plays and skits available to people across the state. With titles like “Grandma Keeler gets Grandpa Keeler Ready for Church” and “Training a Wife,” these pieces weren’t high art, but rural audiences couldn’t get enough of them. Arvold was pleased to see the article accompanied by several photos, including one of him checking in dozens of scripts and sending them out again.



Arvold



Walsh



Arvold had a passion for famous quotes. Sometimes he published his own thoughts next to the greats, as if by association he might join their ranks. None, however, inspired him more than Abraham Lincoln. From play openings to theatre dedications, Arvold tied every significant event he could to Lincoln's birthday. Then, one day, he thought of a way to pay the 12th president an even greater tribute in, of all places, the Old Main attic.

Feeling like a child building a secret hideaway, Arvold ordered split logs from Minnesota's Itasca State Park and used them to cover the walls and high-peaked ceilings of a space used for set building and storage. He commissioned campus blacksmith Haile Chisholm to fashion wrought iron hinges, door handles and chandeliers. And he furnished the rooms with bark-covered straight-backed chairs and tables. In the crook of the L-shaped space, bricklayers installed a fake fireplace, inscribed with Abraham Lincoln's words: "Let us have faith that right makes might."

From the time it opened in 1922 until Arvold retired, the Lincoln Log Cabin served as the social heart of the Little Country Theatre. In this artificially rustic setting, the Von Trapp Family Singers dined, Native Americans danced, Edwin Booth Dramatic Club inductees made their pledges and Lilac Days revelers dined on lavender mashed potatoes.

Lilac Days was one of Arvold's most long-lived and unique creations, a product of his abiding love for pageantry with

a purpose. His vision was to connect Fargo and the city of Grand Forks, North Dakota, with an 80-mile lilac hedge to be celebrated each year with music and dining. Despite the fact few of the lilacs survived, each year NDSU's sun-bonneted lilac queen and her lilac maidens sang the Lilac Days anthem to school children in small towns along North Dakota Highway 81. In the evening the royal court joined their friends for the annual Lilac Days feast, for which everything – even the turkey – was dyed purple.

To Walsh, NDSU's theatre program represented a bygone era. He'd read Arvold's book on the Little Country Theatre. And he recognized Arvold as one of the "dynamic figures" of American academic theatre prior to 1930. Still, in his mind, academic theatre in those days "didn't amount to much."

Unlike Arvold, Walsh was not a warm and fuzzy guy, say his former students and colleagues. Respected, yes. Professional, to the core. Sentimental, absolutely not. Physically, he was different too. Shorter, wirey, a cigar or pipe often in his grasp. And yet, they shared some strong similarities. Both, for instance, were fascinated with outdoor drama.

As soon as he set foot in North Dakota, Walsh began cruising the state like a movie director looking for locations. Each time he investigated a historic site and its surrounding terrain, he wondered if this might be the spot to stage his masterpiece. That's why – when he heard the Theodore Roosevelt





National Park and Badlands Association board wanted to stage a pageant commemorating Theodore Roosevelt's love of western North Dakota – he knew he had to have the job.

And so it came to pass, in the summer of 1958 – 40 miles from the nearest town – “Old Four Eyes” sold out 32 of 33 performances in a 2,000-seat amphitheatre built into the side of a Badlands’ butte. Eventually, after three years of rewrites, Walsh could nearly claim the script as his own. The show would run a total of six years, before being dropped in favor of an extravagant variety show known as the Medora Musical. The thought of tap dancers and dog acts being favored over legitimate historical drama boiled Walsh’s blood. Bitterly disappointed, he came to think of “Old Four Eyes” as “both the zenith and the nadir” of his career. Although his artistic vision was abandoned, Walsh’s Burning Hills Amphitheatre remains.

No less a mover and shaker on campus, Walsh quickly updated the curriculum and created the university’s first bachelor’s and master’s degree programs in speech and drama. Next he tackled the theatre itself. It took him more than a decade, but in 1968 – with the help of a generous donor and plenty of political savvy – Walsh got what he wanted, a new building. That summer of 1968, when incoming freshman Steve Stark arrived at Old Main for his official campus visit, he could see Walsh had no interest in showing him the original Little Country Theatre. “He barely opened the door and didn’t even turn on the lights,” Stark says. “He was more excited about Askanase Hall.”

Once Walsh got the kinks worked out of his new theatre, he started looking for a new project. Just like Arvold decades before him, Walsh turned his gaze on the hinterlands, saw an unmet need, and created the Prairie Stage. Between 1971 and

1976, Walsh dispatched a 16-member troupe to as many as 10 North Dakota communities each summer. The repertoire included three shows, including one for children. During the day the actors taught drama to local high school students.

Walsh himself designed the Prairie Stage tent and the complex wood egg-crating system that supported the stage and seating area. Michael J. Olsen, a 1973 graduate of NDSU, remembers the dry run in Fargo. It took the actors, who doubled as the technical crew, days to get it all assembled. “But Fred hung with it, and you know we got better and better. Part of the key was, in those first couple of weeks, the cast accidentally lost a few pieces of the egg crating along the way,” which considerably speeded the setup time, Olsen says. “I would guess he was mystified as to where those pieces might have gone.”

Walsh retired from NDSU in 1978. While passing the Little Country Theatre torch wasn’t as painful for him as it had been for Arvold, giving up the limelight wasn’t easy. He never stopped being creative and always had a one-act play or some other project in the works. Olsen and Stark say he mellowed with age, becoming – or at least trying to become – a delightful old curmudgeon.

Given some artistic license, the real-life drama of Arvold and Walsh could have a happy ending. Set in the great cosmos, the two directors cordially trade stories in front of a stone fireplace. Of course, they’re trying to top each other’s tales, but in the dramatic moment when Walsh shares the philosophy that’s guided his every effort, Arvold smiles and says he strived to do the same: “to make theatre, not a means of earning a living, but the means of a way of living a life.”

— Catherine Jelsing



[essay]

# THE KING OF OLD BROADWAY





*When I was a boy, with candy and toy, Christmas was a happy time. But now I am old and the days seem so cold. And I'm lonesome without my boy tonight. But he's far away, on this holy day, and all I have are memories ...*

Some days I can't quite remember the last three digits in my Social Security number, but I can still rattle off the lyrics to the song I sang in my first big time stage performance. That'd be December, 1963, St. Anthony's Grade School, Fargo, North Dakota.

Ok, there's that picture of me in the robin costume from about six or seven years earlier, but I didn't have any lines. Not even a chirp. Sister Peter gave the speaking part to the bluejay. So it was definitely that Christmas program where the whole thing started. That thing with me and the stage.

I learned the song, performed the song, the audience applauded me. Or, rather, me as an old man whose son had gone off to war. Even better. That was acting! It made me happy, it made me excited, it made me special. What a perfectly wonderful chain of events. I wanted more.

More came in high school with the realization that while I wanted to win "the big game" as much as the next person, I'd just as soon have that next person be the Juliet in the third row of drama class rather than the Arnold next to me on the bench. And so I traded sweaty practices on the football field for glorious rehearsals on the stage. A darn fair trade for all concerned.

High school whipped right by. I learned, I performed; they applauded. College was even better. The stage brought me confidence, friends, and a modicum of local fame. Then came graduation and it was back to square one. Further back it seemed than even the Christmas show at St. Anthony's grade school.

A major in theatre; no minor, no job, no prospects. What had I been thinking?

The stage can be, most often is, a welcome break from reality. Audience and performer make a pact to suspend disbelief for the next few seconds, minutes, hours, in a world created by both sides. From the stage – story, context and message. From the audience – empathy, trust and validation.

If you're on the stage end of the deal, it can be a rush like no other. That first entrance tells the whole story. Adrenaline pumping, mind rushing, legs shaking. If you nail it, they're yours forever, or at least the next 120 minutes. If you blow it? Well, if you blow it, time stands still, eyeballs stare right through, strip you naked and dramatically lower the temperature in the room. And that's just the beginning of act one ...

Recovery? Sometimes. Usually not. Until the next show or the next, when that first entrance comes around again.

And then if you nail it, if you really nail it, you're on your way. You're someone else, somewhere else, on a journey that never ends, but does end in a blink with a laugh or a sigh or a tear. Oh yeah, and applause. It always ends in applause. Nearly always ends in applause. That rush to the head, the heart, the soul. Applause.

There are a couple of popular thoughts about acting. One is that actors lose themselves in their roles. Step outside for a while; be something, someone so unlike who they really are. Like that nice old man Clint Eastwood. He couldn't possibly have enjoyed killing all those poor Italian cowboys over the years. He's nothing like that on Larry King.

On the other side is the famous "Method," where Stanislavski and Strasberg taught that most effective acting was not really acting at all. Finding the character meant being yourself in the role with "real" responses and "true" reactions. That nice old man Clint Eastwood found the killer deep within himself, blew away all those poor Italian cowboys, and liked it.

There is no universal truth here. Some actors phone it in and get nominated for Academy Awards. Others bleed real blood and are never heard from again. The audience is the ultimate judge on what works and what doesn't. For me, it's always been somewhere in the middle. A complex mixture of being someone else, while wondering where the "me" was in each and every role.

So. A major in theatre; no minor, no job, no prospects. What had I been thinking?

I'd been thinking I was finding myself. What part of me was the villain in "Man of La Mancha," the tragic hero in "Blood Wedding," the old actor in "The Fantastiks," or Charlie Brown in "You're a Good Man Charlie Brown?" And yes, what part of that thirteen-year-old me was an aging father in the St. Anthony's grade school Christmas show in 1963?

Finding yourself. A trite phrase, a sixties cliché, a search since Eve told Adam the apple would set them free.

Throughout the years, my stage has taken many forms. And with every new role, I found myself just a little bit more complete. But that pact between audience and performer, that suspension of disbelief, is a gift for those on both sides of the Proscenium Arch. Not quite real life, but still, a life that can motivate, teach and inspire. On either side, the chance is there to feel, to grow, to discover something new.

I no longer "tread the boards" nor long for the applause (at least, not every day). But that special thing with me and the stage will never disappear. It's helped me find so many things I'm sure I would have missed.

And through it all, I've only one regret. If Sister Peter had given that robin just one lousy line – there is no doubt – I'd be the king of old Broadway.

— Michael J. Olsen

**NORTH DAKOTA STATE UNIVERSITY**  
**Box 5167**  
**Fargo, North Dakota 58105**

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