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A MATERIAL EDUCATION

THE ART & SCIENCE OF STANTON SEARS

LAURA BILLINGS COLEMAN



INTERSECTIONS

A SERIES BY THE DEWITT WALLACE LIBRARY

A MATERIAL EDUCATION: THE ART & SCIENCE OF STANTON SEARS

Laura Billings Coleman



Intersections is a publication of the
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A MATERIAL EDUCATION: THE ART & SCIENCE OF STANTON SEARS

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READ QUOTES FROM MACALESTER
COLLEGE COMMUNITY MEMBERS IN
COMMUNITY VOICE BOXES

☰ NAVIGATE THROUGH THIS BOOK
BY CLICKING THE THREE BARS IN
THE UPPER LEFT CORNER

FOREWORD

KARINE MOE

PROVOST, MACALESTER COLLEGE

Liberally educated people draw on multiple ways of knowing to solve complex problems, and they are prepared to do so in ever-changing and diverse environments. They recognize that problems as thorny as those presented by climate change or food insecurity require not just a scientific approach, but also political, economic, philosophical, geographical, and historical competencies. The transformative power of a liberal arts education broadens the perspectives of students and equips them to make meaningful difference in the world.

At Macalester College, the faculty model the importance of a liberal education, demonstrating time and again that depth of understanding of a discipline, while necessary, is not sufficient for educated thinking and problem solving. They augment their deep disciplinary expertise with connections to other modes of thinking to advance scholarship and improve their teaching. Curricular interdisciplinary approaches at Macalester are easily identified in

the interdisciplinary majors, such as Environmental Studies or American Studies, or in the interdisciplinary concentrations, such as International Development or Community and Global Health. The interdisciplinary work of individual faculty, however, are less visible, yet critical to the way that we educate our students. Computer science faculty use virtual reality technology to inform the work of classicists. Economics faculty work with psychologists to better understand economic behavior. French and anthropology faculty collaborate on the language of diplomacy. These are just a few of the many examples of the interdisciplinary work of the faculty at Macalester.

This series of e-books, entitled *Intersections*, will serve to highlight the interdisciplinary approaches of our faculty and students. Each e-book will feature Macalester faculty members who embody the interdisciplinary nature of the liberal arts in their teaching and scholarship. *A Material Education*:

The Art and Science of Stanton Sears is the exciting inaugural book of the series. The studio of Stan Sears gives us the ideal start to our exploration of the critical connections between arts and sciences at Macalester. As a teacher and artist, Sears employs mathematics, geometry, physics, biology, architecture, and engineering, along with his artistic vision. In one of many examples highlighted in *A Material Education*, students see first-hand how a fundamental understanding of the anatomy of a dragonfly and the physics of structural engineering were necessary inputs to the design and creation of a dragonfly-inspired street gate. They learn the importance of the theoretical grounding they receive in their mathematics and physics courses to creating beautiful and functional art.

Enjoy the beauty and marvel in the arts and sciences as you learn more about the art and teaching of Stan Sears.

PREFACE

TERRI FISHEL

DIRECTOR, DEWITT WALLACE LIBRARY

In the fall of 2017, a faculty retreat was held at Macalester to discuss the future of the liberal arts in the 21st century. This retreat was focused on discussing the tensions that have developed between divisions because of increasing numbers of students choosing majors in the sciences. However, it should be remembered that students in a liberal arts college, even when majoring in the sciences, are exposed to so many courses that connect them to the humanities and fine arts. In this environment it is hoped that students fulfill William Cronon's prediction, described in his essay on the goals of a liberal arts education, that "[M]ore than anything else, being an educated person means being able to see connections that allow one to make sense of the world and act within it in creative ways... [A] liberal education is about gaining the power and the wisdom, the

generosity and the freedom to connect."¹ The question is how do the sciences and arts connect on a liberal arts campus?

This work grew out of a conversation that took place the week following the retreat, at our fall Faculty/Staff Happy Hour held in the library. I was speaking with Stan Sears, Art and Art History, who shared information on a project he recently completed for Augsburg University's new building housing three disciplines: science, religion, and business. In the course of the conversation, Stan described his research in engineering related to jet propulsion, and his exploration of biology and the anatomy of dragonfly wings. I believe Stan's work represents the best in liberal arts colleges—a faculty member focused on the fine arts who also engages in research in the sciences in order to

inform his creations. His story is one that I believe demonstrates how engagement with multiple disciplines might help students "make sense of the world and act within it in creative ways."

We propose a series of publications that will feature and highlight the work faculty and students do that make connections between the arts and sciences, humanities and social sciences, arts and social sciences, and more. It is this work that infuses liberal arts campuses and helps students fulfill Cronon's prediction. It is hoped that this series will demonstrate the best of what makes a liberal arts education so valuable.



¹ "ONLY CONNECT: THE GOALS OF A LIBERAL EDUCATION", WILLIAM CRONON.
THE AMERICAN SCHOLAR, 67(4) 1998. <[HTTPS://WWW.WILLIAMCRONON.NET/WRITING/ONLY_CONNECT.HTML](https://www.williamcronon.net/writing/only_connect.html)>; LAST VISITED
SEPTEMBER 5, 2018

THE LIFE & PUBLIC ART OF STAN SEARS

Devlin Patton decided to major in physics even before he started his first year at Macalester College.

“Being a STEM major definitely seems like one of the safer choices you can make,” says Patton, who, like many post-millennial students, has paid close attention to predictions about how artificial intelligence, automation, and other trends in technology could affect his future job prospects. “I’m interested in renewable energy and sustainable architecture someday, so physics seems like the right place to figure out how to do that.”

With a demanding course load of quantitative courses and labs, Patton decided he might also need a break from the books—a chance to let his mind wander away from the laws of motion—and signed up for an entry-level studio arts class to satisfy the fine arts requirement on his transcript.

But somewhere at the midterm point of Sculpture I, as he struggled to build an eight-foot tower out of light-weight wood, aluminum,



fabric, and glue, Patton had the dawning realization that art and science can't be confined to separate silos at all. Maybe, to do your best work, you have to draw from both sides of the brain.

"When I started this project, I drew this perfect sketch and everything lined up—all of these straight even lines. But then, you get the wood under a saw and discover that there's a strange curve in the grain, or one of the notches you cut is an eighth of an inch off on one side, so it makes the whole thing lopsided," he says, sounding more energized by the process than disheartened. "It's driving me kind of crazy that I'm spending more time in the workshop than I am doing homework for calculus—but it also seems like it's worth it."



Everyday epiphanies like this come standard

with the cost of a liberal arts degree, as students discover all the myriad touch points where arts, humanities, science and technology intersect. But as many Mac students and alums report, these aha! moments seem to happen with even greater frequency in the Joan Adams Mondale Hall of Studio Art—home to a free-wheeling studio workshop vibrating with power tools, suction fans, glue guns, hot metal, and a heavy rotation of dance music on the sound system. At the center of all the hammering, hewing, pounding, and sawdust is where you'll find Stanton Sears, an associate professor and working artist in his own right, who teaches

woodworking, 3D design, metallurgy, and many things besides.

"Officially, I teach sculpture, but I don't spend much time worrying about what you call things," he says. "My job is really to teach students to see the world a little differently than they do in their other classes."

With a thriving public art practice he runs in partnership with his wife, Andrea Myklebust, herself a Macalester graduate, Sears has taught a full generation of Macalester students how to look at the world in new ways, incorporating many of his own art works and inquiries into the lesson plan.

"The fact that Stan is a working artist with an active practice is very inspiring to students, and to his colleagues," says **KRISTI FACKEL**, the department coordinator for Macalester's Art and Art History programs. "He's a warm person with a wicked memory, and so much institutional knowledge and energy that he really draws students in. And quite a number of his students choose to continue on in the arts—he awakens something in them, I think."

As colleges and universities across the country report declining enrollment in traditional arts and humanities offerings,



COMMUNITY VOICES

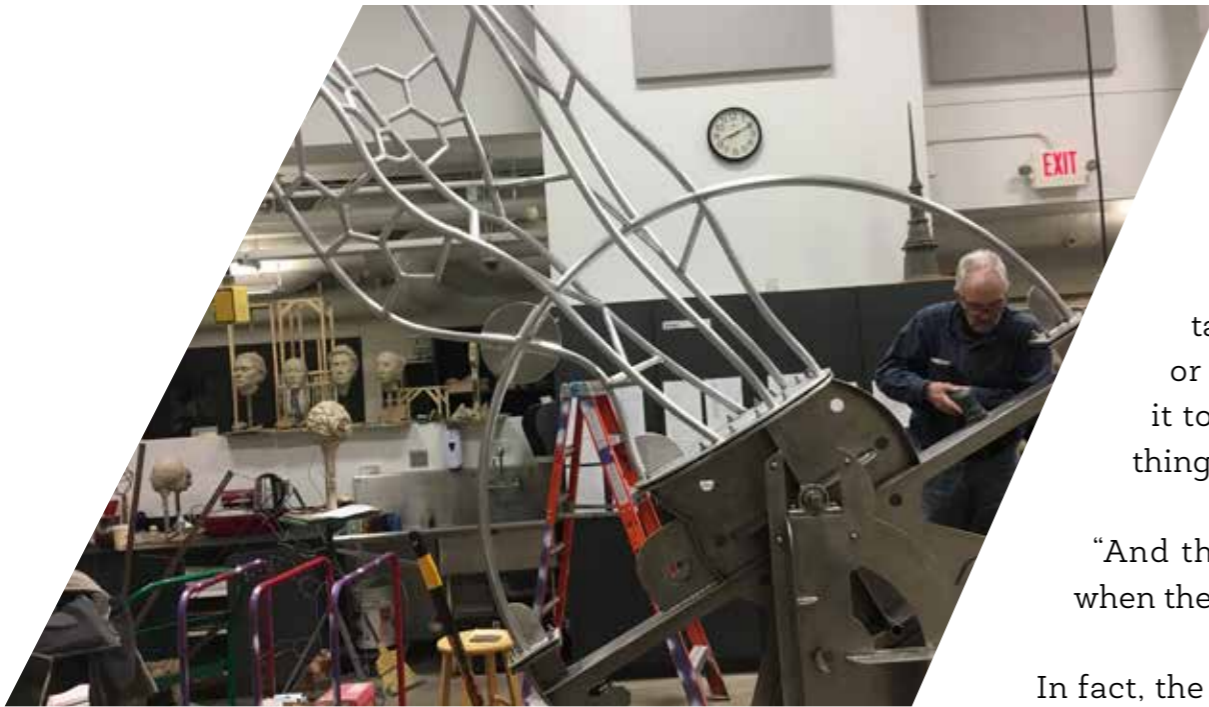
"When you're working with the rhythm of your hands moving, it doesn't take long for the heart rate to sync up even. There's so much sympathy happening. The materials themselves act on us. These awakened senses in us that nothing else does. A screen certainly doesn't."

KRISTI FACKEL
DEPARTMENT COORDINATOR, ART AND
ART HISTORY, MACALESTER COLLEGE

COMMUNITY VOICES

“There’s no right answer in art. Instead it invites you to take in all of the stuff that you’re learning in other classes and synthesize it, and work with it maybe in a totally different way through your art practice.

ISABELLA KROMPEGEL-ANLIKER
STUDIO ARTS, '18



against growing demand for high-tech computer and science programs, spending time in Sears’ classes makes clear that students in the liberal arts don’t have to choose one at the expense of the other. “People talk a lot now about the value of maker spaces, and how building things develops critical thinking and problem-solving skills and all the rest,” says Sears. “But to me, the workshop right here is where it’s happening. Studio arts is the original maker space. This is where you can come to take all of the theory about physics, or engineering, or math, and apply it to materials, and see how to make things that actually work.

“And things get even more interesting when they don’t work at all.”

In fact, the challenges Sears has confronted while designing, fabricating, building, and engineering more than seventy major public art installations and countless large-scale sculptures that can stand up to the elements, twirl in the wind, roll the right direction, and light up in the dark have

Joan Adams Mondale Hall of Studio Art

Resourced with tools and materials,
Sears teaches students his art
practice at Macalester College

provided Macalester students some very memorable lessons about the multiplicity of intersecting skills it takes to be an artist, educator, engineer, and entrepreneur.

“One of the best things Stan does for students is that he makes his own struggles plain to them,” says Fackel. “It can be frustrating working with someone who makes everything they do look effortless, but Stan isn’t afraid to talk about where he’s failed, how he’s learned, and how he uses that experience again when he moves on to the next thing. Those are important lessons, not just for young artists, but for anyone who wants to live a creative life.”



Like theater students who learn that uttering the word “Macbeth” could tempt the fates, Macalester’s studio arts students find out early that mentioning all the things that could go wrong while working with dangerous materials, power tools, and high temperature furnaces is frowned upon.

“I’m superstitious about that, so we don’t bring it up,” Sears says, before greeting a group of visiting students from professor Serdar Yalcin’s art history class who have come to see a demonstration of the lost wax process, a bronze-pouring technique that dates to the third millennium B.C. While the art history students take notes, several



Pouring Bronze

Layered in protective gear, Sears instructs students how to pour molten bronze into wax molds at the Macalester Sculpture Studio's foundry.

of Sears' advanced sculpture students take precautions, putting an extra layer of asbestos-covered protective wear over the work boots and heavy cotton canvas Sears has instructed them to wear for foundry work. ("You want to wear fabrics that will start smoking before they go up in flames," he says, noting that this wardrobe gives the wearer more time to react to what he refers to, euphemistically, as "dramatic moments.") With the forge fired up to 2,100 degrees Fahrenheit, his team works with a set of overhead pulleys to move the pot of molten bronze metal in place, trickling the liquid bronze into several molds placed on a subfloor of sand. The high-temperature demonstration draws a small crowd of onlookers from other classes, who sigh with relief when it all goes off without a hitch.

Opportunities to try his hand at everything from farmyard welding to blacksmithing are part of the reason **ETHAN HOWARD**, an environmental studies major, has taken a number of studio arts classes during his four years at Macalester. "It turns out I love metalworking and welding," he says. "It's such a cool process—kind of like glorified hot gluing. Watching what Stan can do with this stuff in his art is endlessly inspiring to me, and it's also really cool because it teaches you the directions you could potentially go in with the skills you have. I don't know where he learned it all, but he knows how to do practically everything."

In fact, Sears began his artistic career at the prestigious Rhode Island School of Design, gaining

COMMUNITY VOICES

"For me personally, taking classes from Stan has taught me to pay a lot of attention to my surroundings, and to think about all of the things in my life that someone had to craft or design. It's endlessly fascinating, because if you start seeing that way you're always learning."

ETHAN HOWARD
ENVIRONMENTAL STUDIES, '18



Stan Sears, 1991

For more than 35 years Sears has taught at Macalester College in the Art and Art History Department.

admission on the strength of a timed drawing that served as the school's primary entrance exam. "It's lucky they did it that way because at the time I was bad at algebra, no good at physics, terrible at chemistry," he says. "All the things that interest me now and that I often deal with in my studio were not strengths at the time."

As a freshman, Sears heard the renowned Scottish landscape architect Ian McHarg, a professor at the University of Pennsylvania, lecture about his book *Design with Nature*. Now considered a turning-point text about the value of ecologically-informed civic design and environmental sustainability, it inspired Sears to study architecture and landscape architecture for a time. However, in his senior year he decided to shift to a painting major, adding a

year to his program. He graduated with a degree in painting, even though early on one of the school's famous faculty members, Richard Merkin, the mustached, modernist New Yorker illustrator, was not encouraging. "He basically told me I was a terrible painter," Sears remembers. "He was right." What changed? That summer, Sears worked at a cement mill during the day, but then went home and painted as late as possible every night. "I was a much better painter by the end of the summer and the feedback at the beginning of the [next] semester was much more positive."

Before earning an MFA in painting at Penn State, Sears took a year away from school, working in a shop doing silk screening, as well as on a range of independent illustration and design projects. "I

did make an important discovery in that period of time, which is that if you work hard from seven to three every day, that still leaves you a tremendous amount of time to play—to paint, or draw or make things," he says. "I tell my students that the idea that having a day job interferes with doing art is kind of ridiculous—there are still twenty-four hours in a day."

From a family of East Coast academics—Sears' father was a professor of economics, his sister teaches dance at Penn State, and his brother is a vice president at Boston University—Sears began supporting himself with a mix of teaching, studio work and entrepreneurial spirit. He started a sign painting business, and later took commissions creating sophisticated architectural renderings,

a skill he honed with additional coursework at the Boston Architectural Center and at the Harvard Graduate School of Design. Working as an adjunct at the University of New Hampshire and other smaller institutions around the East Coast, he admits that many of his early experiments mixing studio arts with other forms of self-expression failed miserably. “I was interested in jazz dance but I created mutiny in some of my drawing classes, because I’d try to make my drawing students dance—and of course, they’re there because they’re all the shy ones. They really don’t want to dance.”

But by the time he joined the faculty at Macalester in 1983, he’d hit on a teaching technique that served him better, a semi-Socratic approach to studio arts that puts students right to work considering and solving problems with materials almost from the first moment they come to his class.

“The phrase that Stan uses all the time is ‘thinking with things’, which accurately reflects the way he encourages students to develop ideas from experimenting with as many materials as you can get your hands on,” says **RICHARD GRAHAM**, a theater arts major. “Rather than spending a lot of time talking about theory, or trying to develop a concept, or drawing things out, in Stan’s classes, he wants you to get practice right away. You might make things in miniature, or glue bits of wood together, or build a model out of clay, and

just start developing things very organically. As you move ahead on the next project, you start to develop this body of experience about what works and what doesn’t because you’ve learned so much from the fifty terrible models you’ve built already.”

The experience can be disorienting at first, says **ISABELLA KROMPEGEL-ANLIKER**, a studio arts senior who took her first freshman seminar in Stan’s class. “Experimentation is definitely not anything that’s emphasized in high school or in traditional education, where the focus is usually on production and maximizing efficiency in the classroom,” she says. “It takes some getting used to.”

Though Sears lectures very little, he talks a lot, moving from work station to work station while making tea, sharpening knives, and sharing observations about everything from the value of native plants, to Newton’s laws, to Japanese joinery techniques, to the towing capacity of his trusty Chevy Silverado, to the varying quality of fleece produced by the sheep that share the farm where he lives with his wife and children, about an hour downstream from campus, in Stockholm, Wisconsin. Within the studio arts department, these digressions are referred to as “Stanecdotes”—a sign of the affection his students and colleagues have for him, and the wellspring of knowledge he’s eager to share about how things work.



COMMUNITY VOICES

“I feel like studying art kind of lends itself to developing a very scientific kind of investigative drive. It manifests itself as a curiosity about how was that thing made, or who put that there, or how they did it—or could it be done differently?”

RICHARD GRAHAM
THEATRE, STUDIO ARTS,
AND COMPUTER SCIENCE, '19

“I don’t think there’s a question you could ask that he doesn’t have the answer to,” says Maja Søndergaard Daley, '17, a recent studio arts graduate. “It has showed me how much work goes into being an artist. He has a lot of energy, and his work is very ambitious—it’s inspiring, but you can also see he never stops learning.”

“Stan’s teaching style and the bigness that comes with that pushes you to want to take on larger challenges,” says Krompegel-Anliker. “He pushes me to explore things on my own, and pursue what I’m interested in, and figure out how to make things work because that’s what he’s doing, too.”



The technical challenges Sears is willing to take on in his public art career often serve as talking points in the studio arts workshop. This spring, for instance, he drove the disassembled pieces of his latest commission up from the farm to give it a final going over before its installation in its permanent home in Hopkins.

“I enjoy solving problems, but this was a big one,” Sears says about the project, which was commissioned for the City of Hopkins’ new ARtery initiative, a design plan aimed at promoting pedestrian traffic and community gathering in the town’s main street. Hopkins’ city planners were hoping to find a design solution that could artfully divert cars away from the street during farmer’s markets and festivals. Myklebust + Sears won the commission with their inventive plan for a 22-foot drawbridge with exposed industrial gears that lowers as lightly as a garage door when needed, and lifts up when not in use. Shaped like a dragonfly wing, fabricated from stainless steel and aluminum, and sturdy enough to support a generation of children who will certainly want

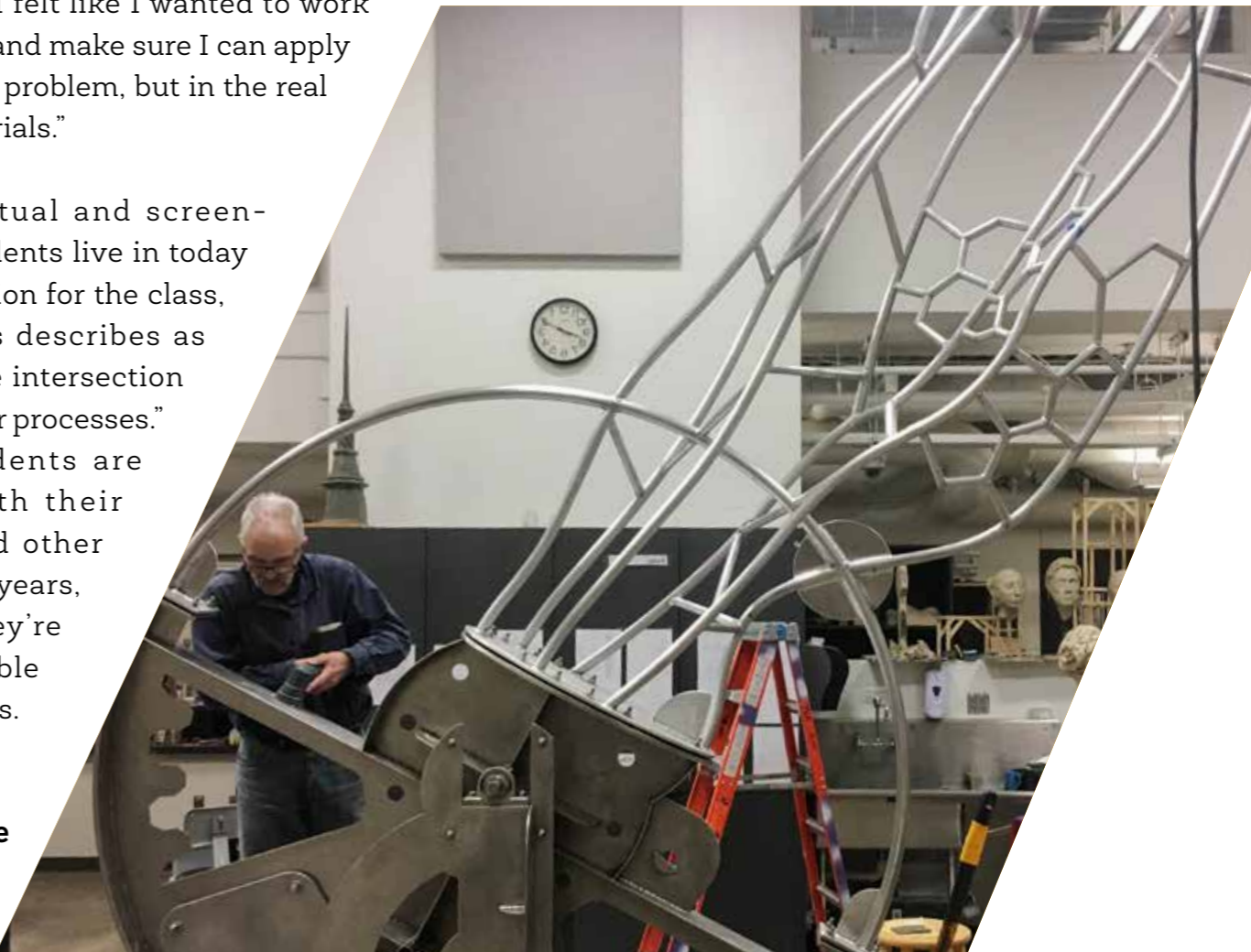
to climb on it, the nearly half-ton structure is equal parts steampunk engineering and natural design.

“A lot of what Stan takes on in his work kind of blows my mind,” says junior Tim Lipman, an applied math major. “He comes up with bids for these huge projects, and then decides, ‘I’ll figure out all the details later.’ It’s pretty impressive.” In fact, Sears’ reputation as an intuitive structural engineer is one of the reasons Lipman decided to sign up for the professor’s newest offering, a woodworking course. “I felt like I wanted to work outside the theoretical, and make sure I can apply math not just on a work problem, but in the real world, and on real materials.”

The increasingly virtual and screen-focused world that students live in today was part of the inspiration for the class, *By Hand*, which Sears describes as “an investigation of the intersection between hand and power processes.” Though today’s students are incredibly adept with their handheld devices and other technologies, over the years, Sears has noticed, they’re less and less comfortable working with their hands.

Dragonfly Gate

Sears works in his Macalester Studio on the final touches of a 22-foot drawbridge.





By Hand

Students in Sears' course, including Evangeline Ng, relax at his Wisconsin farm.

COMMUNITY VOICES

"He's asking students to pay attention in a deep way to very concrete products, and to the very concrete processes that produce those products. So much of what students produce these days is intangible, but with art you get feedback, not just from your instructors, but from your own senses, and from your growing competence—these are experiences our students are craving.

JAINE STRAUSS,
PROFESSOR CLINICAL, COMMUNITY, AND HEALTH
PSYCHOLOGY, MACALESTER COLLEGE

"It's magic what they're able to do with technology. It really is," he says. "But I wonder now, if I gave them a hammer and nails, would they know what to do with them? My feeling is that even in a contemporary society where you have lots of computer and computer-aided things, there's a body of knowledge that can only be grown and developed further by picking things up or taking them apart or chopping them down."

Fittingly, the first assignment in the class syllabus started with this promising line: We begin with a trip to the farm where we will fell an ash tree with an axe. "I figured it was smart to lead with the axe," Sears says. "Students love being outdoors and risking bodily injury."

While the course description attracted a higher-than-average ratio of male students with flannel shirts and previous woodshop experience, the chance to make things by hand was equally compelling to junior Evangeline Ng, an exchange student from Nanyang Technological University.

After helping to haul the trunk and heavy branches from the felled tree from the back of Sears' truck into the studio, she takes turns with a sledgehammer and wedge, as the students work to split the wood into smaller billets for later projects.

"I'm from Singapore, so I didn't think I'd be chopping any tree down in my life," Ng says later, as she works on carving a wooden spoon with hand tools. "Studying graphic design, I can spend twelve hours a day on the computer, but here you get to talk, and think, and appreciate how people did things in the past."

Considering how working by hand has shaped human history is what inspires junior **KAISY NUNEZ**, a history major, to spend many extra hours in the workshop just enjoying the process—even after Sears gently reports that she's just spent an hour trying to assemble a dove joint from the wrong direction. "Working with your hands—it's something we hardly get to do anymore, and it

makes me think about how it's connected to history and things," she says. "Even when it's frustrating, it's fun, and working on something that's physical and real gives you a bit more satisfaction than just writing a paper."

Fackel says she sees connections like this happening all day long, in Sears' classes, and throughout the studio arts department. "For students of this generation, everything they do online is kind of temporary, quickly done, and that's the opposite of what's happening in a class like By Hand where thought goes into every stroke. They're using their hands, and we know hands create memories, and they're working with materials, closely examined. I think students are really hungry for that experience of having something really count, with effort shown, and patience developed, and discomfort worked through.

"Meaning making—I think that's what the students in Stan's classes are doing." //

LANTERNS 2015

3D Design, Macalester College

Sears challenges students to create lanterns, altering the assignment parameters over the years. Here students create hanging structures using chipboard and wood that were displayed on the hillside of Sears' farm.



COLLABORATIONS

Andrea Myklebust + Stanton Sears





Myklebust + Sears

Long-time creative collaborators Stan Sears and Andrea Myklebust can do more than complete each other's sentences.

The husband and wife team can also share credit for more than seventy completed public art projects around the country, from public transit terminals in Los Angeles County, to the colorful terrazzo floors that greet travelers at the Minneapolis-St. Paul International Airport, to a new dragonfly-inspired street gate about to be installed as part of the city of Hopkins' new ARTery project.

"Stan and I work well together because we share some of the same aesthetic and philosophical concerns that underpin the work that we've done in public realm, but we also have very different strengths," says Myklebust. "Stan is a wonderful, intuitive engineer, and I'm a better researcher. Stan does beautiful



“ Humans make things—that’s what we’re evolved to do—and to some extent, that’s always been a common theme in our work. ”

ANDREA MYKLEBUST

drafting, but I’m more about the writing that describes what we do. He doesn’t mind meetings, and I’d just as soon avoid them. As we like to say, we have well-matched weaknesses.”

Though the pair started their public art partnership in the Twin Cities nearly twenty-five years ago, a fast-growing portfolio of commissions from around the country forced them to look for extra studio space—not to mention neighbors who didn’t complain about the noise and dust from stone carving, wood-turning and other projects. The search led them to a 37-acre Wisconsin farm over the bluffs of Lake Pepin —about an hour down river from Macalester’s campus—that has become a destination for frequent student field trips over the last decade.

“I basically had to build my own laboratory,” Sears says about the 4,500 square foot workshop he and a fast-working team of subcontractors built in a matter of days, now full of books and drafting tables, generators and power cords, small scale sculptures, and framed photos of finished projects from around the country. The studio is powered by an on-site solar array designed by Myklebust’s father John, a veteran architect who also creates and programs the lighting designs for all of Myklebust + Sears’ illuminated installations.

Lake Pepin Laboratory

The Mykelbust + Sears farm workshop boasts artworks indoors and out.



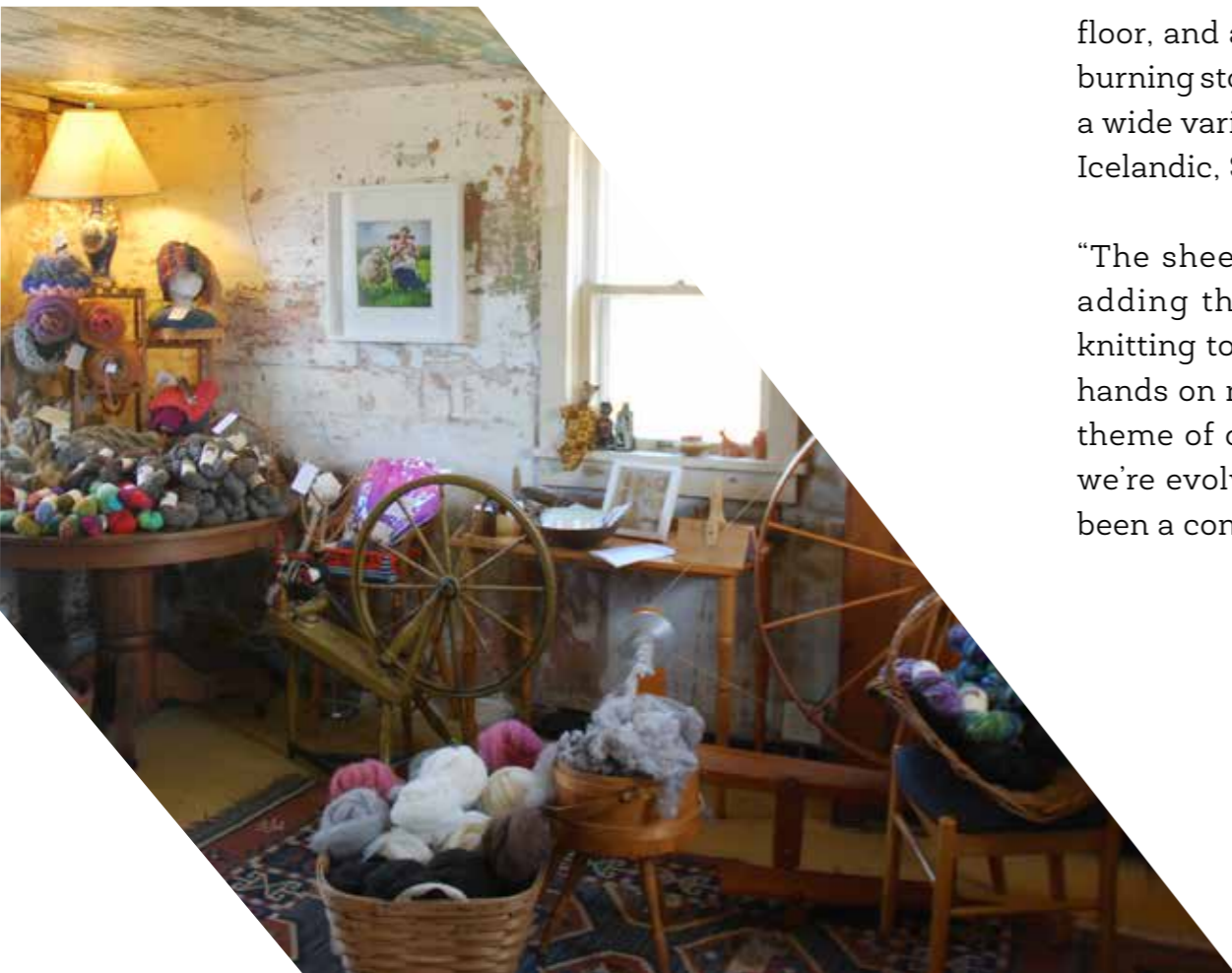


Black Cat Farmstead Fiber Studio

Downhill from their workshop, Black Cat hosts looms, spinning wheels, and wool yarn from their farm's sheep.

Down the hill from the power drills, Myklebust works in a more contemplative setting—a rustic three-room cottage that once occupied “Little House in the Big Woods” writer Laura Ingalls Wilder’s homestead. Myklebust and Sears repatriated the paint-patinaed building from a nearby property, saving it from the scrap heap. It now serves as headquarters for Myklebust’s textile art practice and Black Cat Farmstead fiber business, with wooden-frame looms on the top floor, and a spinning wheel near the front room’s wood-burning stove. In between their respective workshops live a wide variety of chickens and a small herd of crossbred Icelandic, Shetland and Gotland sheep.

“The sheep were my midlife crisis,” Myklebust says, adding that their presence has inspired her to add knitting to her long list of artistic practice. “Having our hands on natural materials has always been a common theme of our work. Humans make things—that’s what we’re evolved to do—and to some extent, that’s always been a common theme in our work.” ➤



COMMUNITY VOICES

“Watching how Stan and Andrea work, it’s all about problem solving. Building up a farm, moving a house, working with glass, cutting stone, welding, whatever it is, they run into a problem, and then they find solutions—I think that’s the most important lesson I got from them.

PEI-HSUAN WANG, '10



**AUGSBURG
HAGFORS CENTER**

FINDING CONVERGING LINES

Augsburg University's Hagfors Center

MINNEAPOLIS, MINNESOTA

For one of their most recent finished projects, Myklebust and Sears were asked to find a common thread that would pull together Augsburg College's new Hagfors Center, and promote the connections between the three disciplines housed there—science, business, and religion. Working in terrazzo, a technique for creating a hard-wearing floor material with colored epoxy with ground glass and stone, the pair designed a set of interconnected lines that suggest everything from the life force of a beating heart on an EKG, to the boom and bust of the business cycle. “Stan and

Hagfors Center Drawing, 2017

Working in terrazzo, Sears piece represents the Hagfors Center's interdisciplinary goals.

PHOTO COURTESY OF STANTON SEARS



Andrea's pieces does a lovely job of addressing the interdisciplinary goals we had for this building,” says Amy Alkire, Augsburg's Assistant VP for Advancement. “In the religion corner, the line represented the river of life, and in the science corner, you see mathematical hypographs, and for business you see lines that reflect the economy and bull and bear markets. For our community, it was worth every single minute of work, because it elevates and embraces all of the endeavors that bring our students together in this space.”

Hagfors Center, 2017

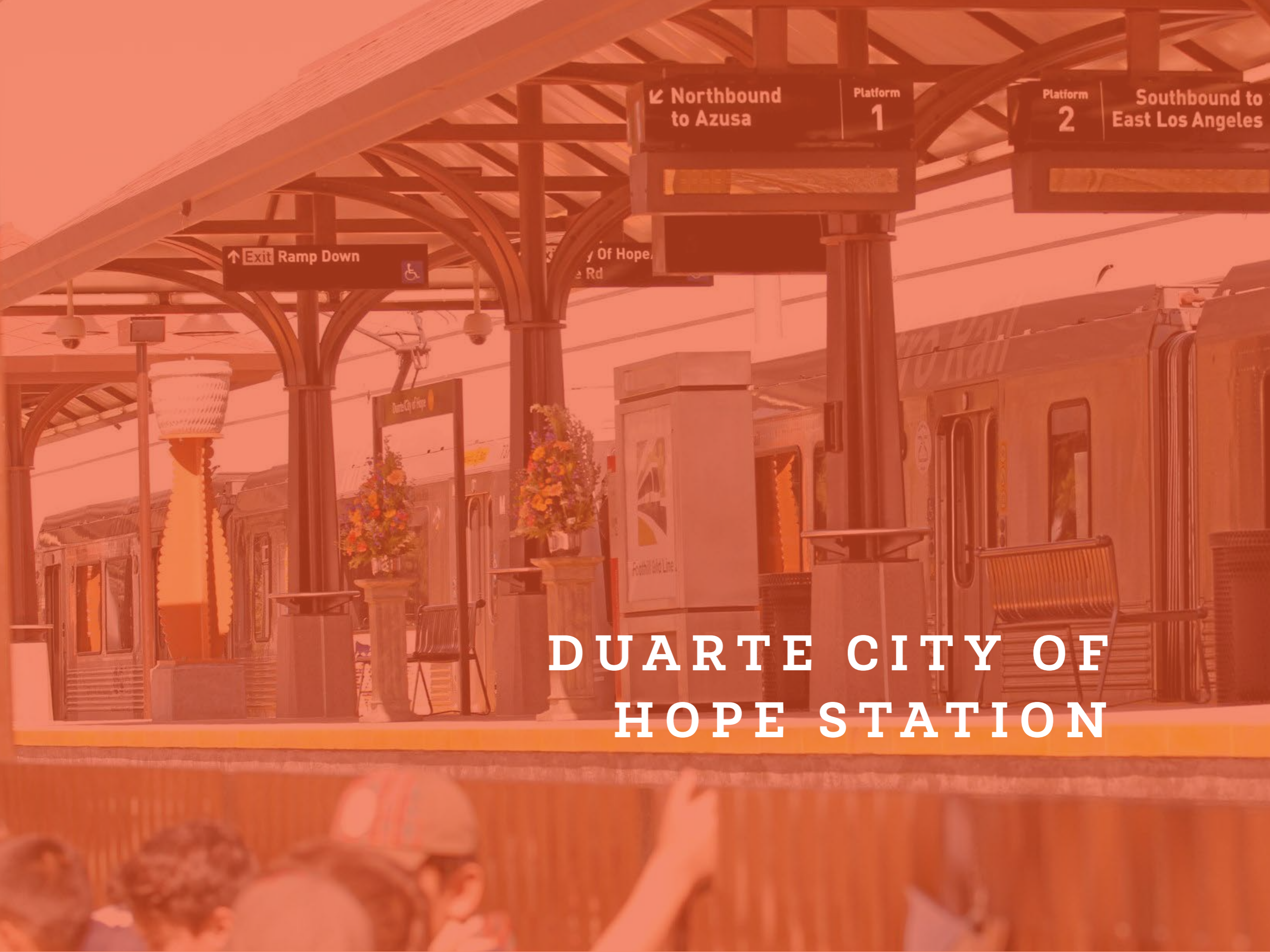
Development with terrazzo
floor detail

PHOTOS COURTESY OF STANTON SEARS



“ My job is really to teach students to see the world a little differently than they do in their other classes. ”

STANTON SEARS



Northbound
to Azusa

Platform
1

Platform
2

Southbound to
East Los Angeles

Exit Ramp Down



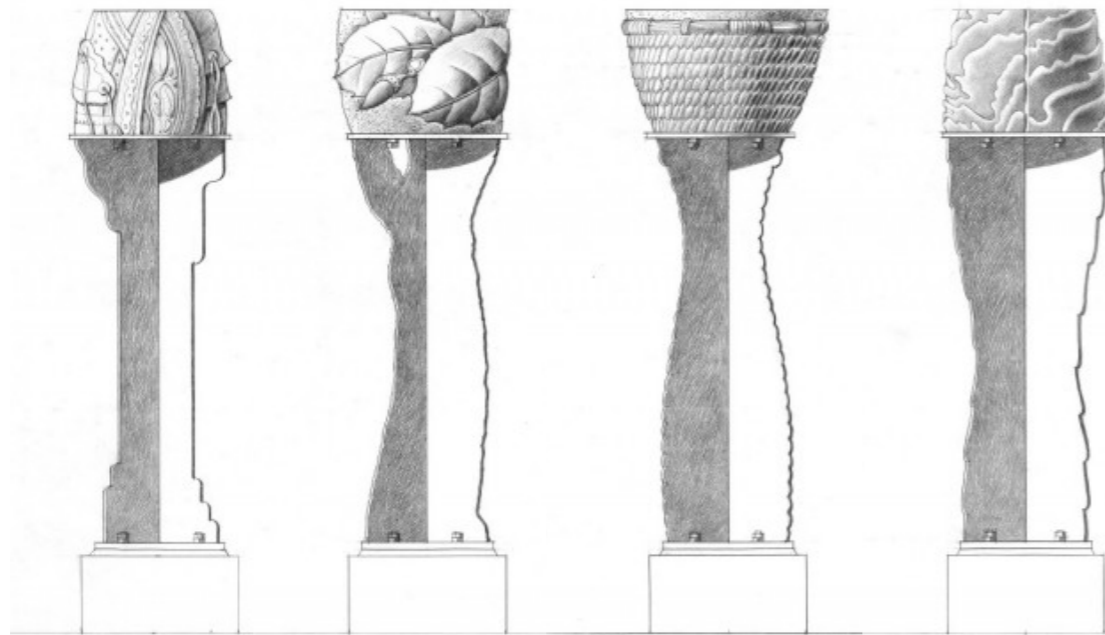
City Of Hope
Rd

Duarte City of Hope



DUARTE CITY OF HOPE STATION





Column Architectural Design, 2015
Rendering of columns in place alongside transit station.

PHOTOS COURTESY OF FOOTHILL GOLD
LINE CONSTRUCTION AUTHORITY

DIGGING INTO LOCAL CULTURE

City of Hope transit station,
Los Angeles County

DUARTE, CALIFORNIA

“Public art is very different from a studio practice,” says Myklebust. “Given the nature of the work, who owns it, how it gets commissioned, and how it gets built and [how] it’s maintained, all of those things require working in a very collaborative way. It can be maddening, because you’re often dealing with committees or politicians, which can be a challenge. But for us, part of what’s been interesting about it over time, is that you end up working with people from all different kinds of backgrounds—plumbers, landscape designers, engineers, lighting designers, structural engineers—who all have very valuable things to bring to the table.”

Duarte Column & Pavers, 2015

Bronze casted pavers.

PHOTOS COURTESY OF FOOTHILL GOLD
LINE CONSTRUCTION AUTHORITY



“ Our work explored the context of the San Gabriel River through an examination of the history and artifacts of the many people who have lived and worked in the area over time, from the native Gabrielino-Tongva, through successive waves of immigration and industry, to the high-tech campus across the street from the station. ”

ANDREA MYKLEBUST

**NORDICWARE
NEIGHBORHOOD
BRIDGE**





A BUNDT-PAN INSPIRED BRIDGE

Nordicware neighborhood bridge

ST. LOUIS PARK, MINNESOTA

A famous cake recipe is the secret ingredient behind the St. Louis Park bridge. Andrea Myklebust and Stan Sears decorated with pour-in-place concrete and vertical steel artwork. “We had no idea what to do with the site until Andrea realized we were right near the Nordicware headquarters, and started reading up on the local history of the Bundt pan,” says Sears. First produced for Jewish immigrants in the neighborhood trying to bake Eastern European Guglhopf cakes, Nordicware’s signature cast aluminum pan became an overnight sensation when a recipe for the “Tunnel of Fudge Cake” won the 1964 Pillsbury Bake-Off. “These are the things you learn when you start digging into a place,” says Sears.



Nordicware Tower, 2017

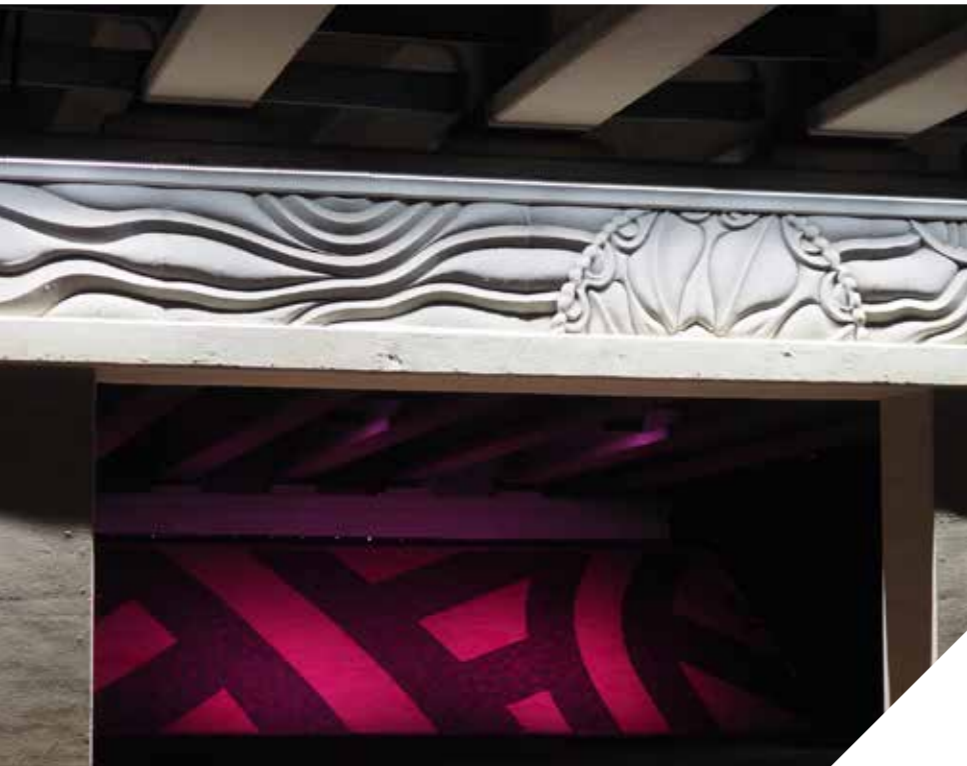
Vertical steel column towering over St. Louis Park.

PHOTOS COURTESY OF STANTON SEARS

COMMUNITY VOICES

“As a historian, I like being in the wood shop and thinking, ‘This is where we began, this is how everything started, doing things by hand.’ It helps me get a new view of the world, and to feel more connected to it.”

KAISY NUNEZ, '19, HISTORY



Bridge Underpass Detail, 2015

Pour-in-place concrete designs are highlighted through lit graphic detailing beneath the Highway 7 bridge at Louisiana Avenue.

PHOTOS COURTESY OF STANTON SEARS





RAYMOND AVE

**METRO TRANSIT
STATIONS**



TRACKING TRANSIT HISTORY

St. Paul's Central Corridor
Metro Transit, Green Line

ST. PAUL, MINNESOTA

Oxcarts, tractors, trains, and diesel trucks have all shared the roads that connect through St. Paul's Central Corridor, a century of history that inspired the carved granite wheels Myklebust + Sears created for three stations along St. Paul's Green Line—Westgate, Raymond Avenue, and Union Depot. While portions of the monumental stonework, cast bronze and stainless steel installations were fabricated according to their specs, says Sears, "there are always components that we make by hand. We design all the way to the end."

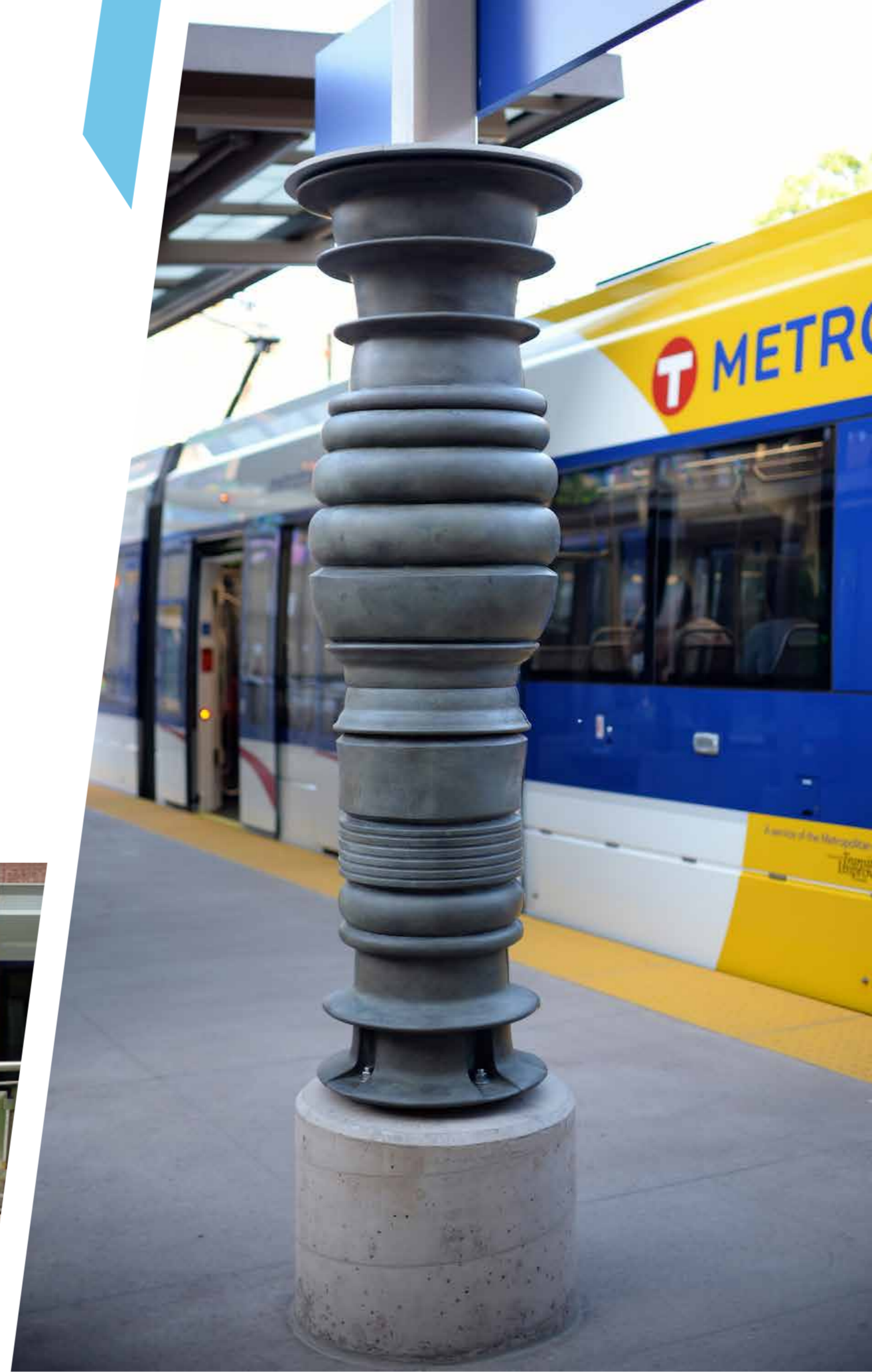
Union Depot Station

The Great Northern 4-8-4 Mountain Class, 2015

Carved granite of Great Northern locomotive drive wheel on South Platform.

Bronze poured stack of wheels on North platform.

PHOTOS COURTESY OF METRO TRANSIT
PUBLIC ART IN TRANSIT





Raymond Station

Red River Oxcart & Diesel Truck Wheel, 2015

Carved granite wheel with water-cut stainless steel depicting nature and tools of the area's history. Precast cement reliefs featuring various historical wheels appear at this station.

PHOTOS COURTESY OF METRO TRANSIT
PUBLIC ART IN TRANSIT

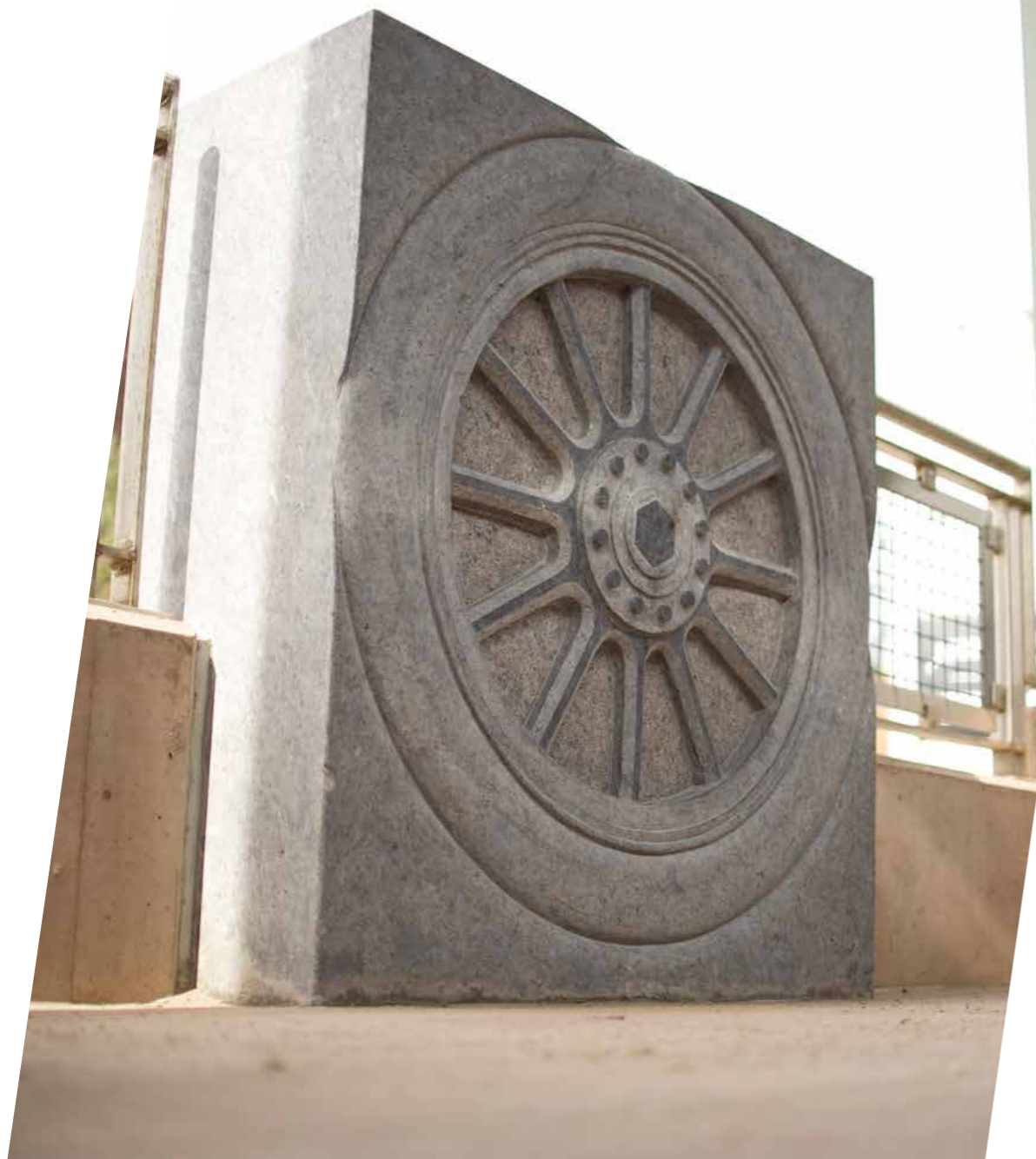


Westgate Station

Willys-Overland/International Harvester Tractor, 2015

Carved granite tractor and Jeep wheels
reflecting industrial activity.

PHOTOS COURTESY OF METRO TRANSIT
PUBLIC ART IN TRANSIT





**HOPKINS ARTERY
DRAGONFLY**

A DRAGONFLY WITH WINGS

Hopkins ARTerY sculpture

HOPKINS, MINNESOTA

Myklebust + Sears beat more than ninety other artists for the chance to create this unusual piece for the city of Hopkins' new ARTerY, a dragonfly-inspired sculpture that will function as a standing sculpture, street gate, and whimsical work of art. "It's a pretty tricky piece," Sears says about the 900-pound stainless steel and aluminum structure. "It has to meet the necessary technical specifications, but it has to be strong enough for people to climb on, light enough that it can be brought down to block the street for farmers markets and what not, and durable enough to survive outdoors for many years to come."



Dragonfly Progress, 2018

Sears refines the stainless steel Hopkins piece in his Macalester studio before installation.

PHOTO COURTESY OF THE DEWITT WALLACE LIBRARY



Dragonfly Street Gate, 2018

The 900-pound stainless steel and aluminum standing sculpture transforms into a street gate.

PHOTOS COURTESY OF STANTON SEARS.



A CONVERSATION

WITH STANTON SEARS



Laura Billings Coleman chats with Stan Sears about his teaching philosophy and methods.

You don't have a required reading list for your classes, but you do keep a stack of books for your students at the center of the studio. One of the most well thumbed titles here is Matthew B. Crawford's *Shop Class as Soul Craft: An Inquiry into the Value of Work*. Why?

Because at Macalester, I'm the shop teacher. In a way, all of us in the arts department are the shop teachers.

Do today's students even know what shop class was? Want to define it for them?

Shop class used to be the place you went to figure out how things work—to make things. It used to be pretty standard in American high schools, but that's no longer the case. That hands-on experience has been going away for some time, in part, because of the numbers problem—it's not easy to teach 40 kids how to use a power saw. But the idea of "shop class" was about working with materials, taking things apart, understanding how a concept you learned in physics or chemistry

class actually worked in practice. It's a valuable mode of learning—we still need it.

In *Shop Class*, Crawford argues that as a culture we're losing our basic manual competence—and the creativity and innovation that goes along with it. We don't know how things work, we can't fix our own stuff, and we're steering young people toward even more virtual—and as he argues, less valuable—forms of work. Do you share that view?

He takes more of a pop-psych approach, and sees more of the spiritual costs, but from my perspective, in this department, I look at it as more of a practical loss of human knowledge. So much of what we learn through books and computers is second hand in a sense. You learn the theories, but you're not putting it all into practice. I would say this studio—the shop—is where these concepts from math and geometry, engineering, physics, geography, and architecture all come together in real time. It's a laboratory for seeing how the world actually works.

It's interesting you use the word laboratory, because taking a studio arts class like yours demands as much time commitment from students as the labs they're expected to take in traditional STEM classes. Both of the classes you've been teaching this semester meet for six hours every week, and your students are spending long hours in the workshop—drilling, sawing, carving, pounding, painting.





PHOTOS COURTESY OF THE DEWITT WALLACE LIBRARY



That's true. The time required can be quite demanding, but there's no replacement for it—you have to work at learning to see this other way. If you can really see well, then your vision becomes an analytical tool.

Vision is a sense we tend to take for granted. Most of us aren't in the habit of questioning whether we're seeing everything we can. How do you get students to do it?

One assignment I like is this clay head project we do in one of my sculpture classes. The project is set up in two phases, and to start with, I ask them to team up with partner, and each makes a realistic likeness of the other out of clay. It's a

very 19th century approach. Now there are a lot of books out there that will give you the instructions for how to do this—when you do a face, you put the eyes here, and the ears here, and the lips like this—and so forth. But I'm really not interested in teaching someone how to do a face by following a formula. The point of the exercise is I want students to write their own formula—for you to invent the formula by being able to see well.

Does it work?

Not at first—and that's what's so interesting. In that first version they do, every piece has all of these distortions. And what's more interesting is that everyone has the same distortions.

What mistakes do they make?

In a way, you don't even necessarily want to define them as mistakes. But they do many of the same distortions—for instance, the height of the forehead will be reduced by about half, the distance from the side of the eye socket to the front of the ears will be reduced by about half. The back of the head they leave out entirely, and the faces are usually much too flat—like a drawing. The faces they sculpt in that first try are like panels that you stick things on to—a nose, lips, brows. Now obviously there's a level at which each of these sculptures is interestingly different, but they're also intriguingly close together.

What do you do next?

I don't walk up and down and point out problems. I just ask them what they can see. They're a little shy, so it takes a little pushing, but basically, in their answers they can identify all the problems.

For instance, as we look at the faces, we discuss how we tend to pull all of the features forward and flatten it out. But if you look closely at a human head, you start to realize that we're shaped more like a fish—we're kind of more hydrodynamic or aerodynamic than we realize.

So you unpack all of that and then ask your students to repeat the whole assignment later in the semester. What happens then?

It's like the second head is a transfer of form. They've started to see what they were missing before. And that leads to a whole discussion of what vision is for, and why our natural vision doesn't waste time looking at things and measuring things that don't matter. We talk about the way our brains compress, distort, intensify, or take away information we don't need—which are also the things that make for great art, or great storytelling, or great design. We discover that in many ways, the first clay head is often more compelling as a piece of art because of the distortions.

That's not the only assignment you ask your students to repeat. In your 3D Design course you

ask students to make a tower—and then you smash them and have them start over again.

Yes, you can't do that too many times or you'd have a mutiny on your hands, but it's a very useful exercise.

How so?

As a teacher, there are a few ways to approach an art project, and one way to do it is to set up the project and structure it so clearly that everyone knows just what to do, and everyone gets a nice result. But then you wonder, whose result is it? I'm always in a kind of internal debate about how much I should structure an assignment in the studio, because I want to leave it open-ended enough that students sometimes fail because they didn't do enough. That's an important part of the conversation.

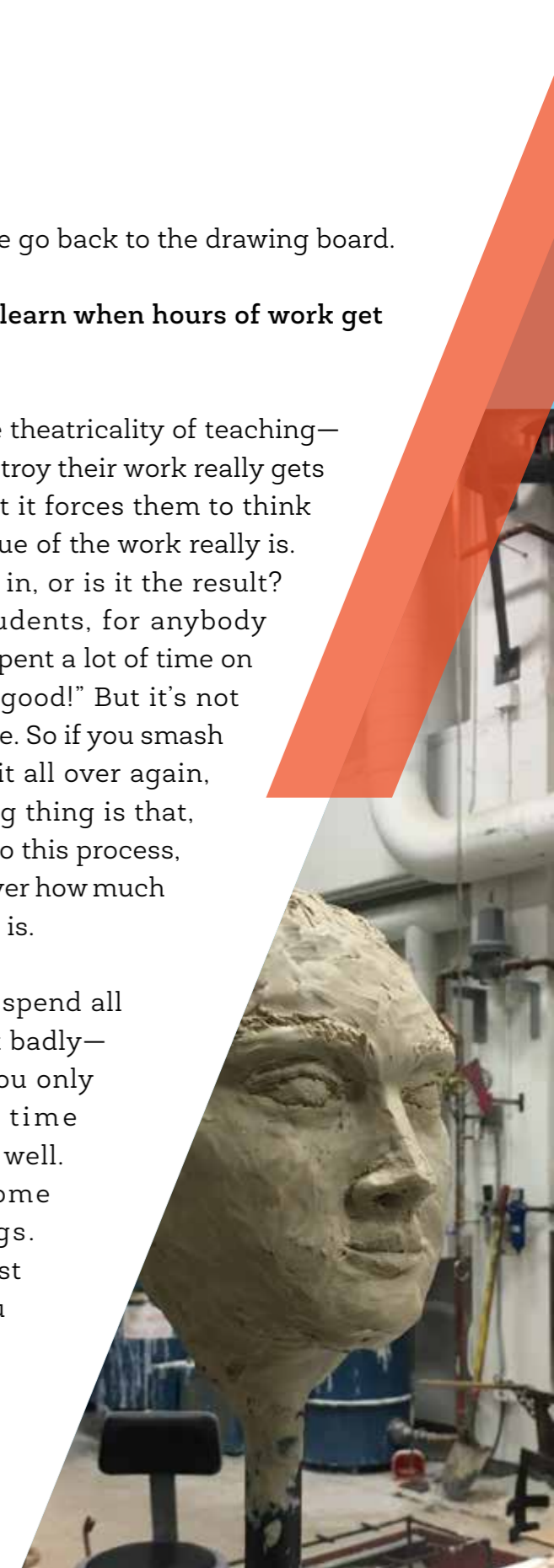
Sculpture is one of the ways that art, science, engineering, and math all come together because one of the goals is to get something to stand up, right? I've borrowed an assignment from an architectural structures class at the Rhode Island School of Design that I like a lot, and the way that assignment works is that first, I ask students to build a tower with certain parameters that make the structures inherently weak. Then we bring them all together and examine them and discuss them. And then we put weight on them, until they

smash, and then we go back to the drawing board.

What do students learn when hours of work get smashed to bits?

Part of it is just the theatricality of teaching—asking them to destroy their work really gets their attention. But it forces them to think about what the value of the work really is. Is it the hours put in, or is it the result? It's natural for students, for anybody really, to think, "I spent a lot of time on this so it must be good!" But it's not necessarily the case. So if you smash it, you have to do it all over again, and the fascinating thing is that, one, you get used to this process, and two, you discover how much better the next one is.

The first one, you spend all this time and do it badly—the second one, you only spend half the time and do it twice as well. That tells you some interesting things. And one of the best things it tells you is you have to be willing to go out there and fail, because that's



TOWERS

3D Design, 2015

In a multiphase project, Sears instructs students to build two iterations of standing structures made of wooden dowels. Tested with weight until broken, students are asked to compose a second—hopefully more stable—tower using knowledge from their initial test.



the only way you learn. And that's a lesson that I think would cross all disciplines.

You talk a lot about failure in your classes, and seem to find some delight in things going wrong. Why do you think failing it important?

One of the books I also encourage students to check out is Adam Grant's *Originals: How Non-Conformists Move the World*. He's an organizational psychologist who teaches at the Wharton School at the University of Pennsylvania, and he's focused on what factors contribute to creative success. Failure is definitely part of the equation—but it's failure tied to quantity. You have to fail a lot—over and over again—to produce good work. You know if you look at the great composers, Bach and Beethoven and the rest, each of them has the greatest hits we all know. But if you look at their whole body of work—like six hundred to

eight hundred pieces—you'll find it includes a lot of crap.

In fact, a lot of the best artists and the most creative people are not always the absolutely most talented. They're fairly talented, of course, but more important, they're stubborn and they keep coming back to the work again and again and again. They do quantity. If you do something a lot, you get better at it. The same is true for artists, or mathematicians or writers, or any discipline. When you're more immersed in it and you screw up, and you make mistakes, and you discover a hole or a gap in your understanding, that's also when you come to new territory. But you don't get there without failing multiple times. That persistence has value.

But in a lot of ways, our digital universe is telling us just the opposite: Just look it up on Google. Just

watch how they do it on YouTube. Look at all of the answers you can find on the internet—why bother taking the long way?

That's definitely becoming a challenge. Here at Macalester, I'm often asked to review portfolios for prospective students, and in the past it was a small subset of students interested in art, and you'd be able to look at drawing, sculpture, pottery and what not.

Today, with contemporary digital photography, and web design, I would say the number of students with a portfolio has gone up exponentially. They're all kind of artsy, but one of the things I'm always trying to sort out is how much of this work is unique and interesting and reflecting this young person, and how much of it is some sort of a pre-designed template, a website design or something like that. You find yourself trying to figure out where is the student in this? And how much of this is just clicking the right buttons?

Do you think that's what's drawing students to classes like *By Hand*? This is a generation that's grown up hearing that half of all today's jobs will be eventually replaced by robots or algorithms. Do you think that fuels their interest in this hands-on, artisan knowledge and enterprise?

I think so, definitely. I think that they're interested in cultivating the kind of deeply human skills and knowledge of handwork that can't be replaced or duplicated by machines. Authenticity is something

that matters to them. Craft is something they really value—maybe even more than other generations.

Some of your students will say that their parents aren't impressed to hear they're carving wooden spoons—they definitely feel the pressure to do something 'more profitable' with their time in college. But it's interesting to note that what people are calling the 'artisan economy' is really growing right now—with the explosion of craft brewing and distilling, and the success of artisan food, or small authentic brands. Both the Brookings Institution and the League of Cities have reports about the value of the 'maker movement,' and how local crafts and artisan products could be the future for American manufacturing.

That's very true. Being an artist isn't about wearing black and sitting at Dunn Brothers all

day. Artists are natural entrepreneurs. That's one of the reasons I bring in classroom visitors like Tom Latané, a blacksmith from Pepin, Wisconsin, because many people with these artisan skills really are able to make good lives. For students who want to go into the arts, it's valuable to meet people like that and see what it takes, the time you have to put in to make a difference, to make your vision grow and change.

But even for students who don't plan to go into the arts, there are lessons, because we're living in an increasingly freelance or gig economy. Anytime you're out there in a non-structured work environment, if you're not sort of self-driven and obsessive, you're not going to get anywhere. I think the arts do teach the value of hard work.

What do you hope your students take away from the time in your studio?

I hope being in the studio teaches them how to play and fail. And I mean to use the word 'play' more, in the sense that, at the front end, it's just a sort of non-judgmental willingness to jump in and not critique everything you do right out of the gate. I certainly hope and assume that some of my students will continue on in the arts. But the flip side of that is, I don't actually look at art as the only creative pursuit. Whatever field you're in, if you're doing well at it, you're probably very creative. //

COURSE HIGHLIGHT

LANTERNS 2018

3D Design, Macalester College

Sears has altered his lantern assignment through the years to create new outcomes. Students create vertically standing structures of mixed media in the 2018 iteration of this assignment.





SUGGESTED READINGS

Thinking with Things: Toward a New Vision of Art

Esther Pasztor

AUSTIN: UNIVERSITY OF TEXAS PRESS, 2005

The Fuzzy and the Techie: Why the Liberal Arts Will Rule the Digital World

Scott Hartley

BOSTON: HOUGHTON MIFFLIN HARCOURT, 2017

Originals: How Non-Conformists Move the World

Adam Grant

NEW YORK, NEW YORK: VIKING, AN IMPRINT OF PENGUIN RANDOM HOUSE LLC, 2016

Excellent Sheep: The Miseducation of the American Elite and the Way to a Meaningful Life

William Deresiewicz

NEW YORK: FREE PRESS, 2015

Sensemaking: The Power of the Humanities in the Age of the Algorithm

Christian Madsbjerg

NEW YORK, NY: HACHETTE BOOKS, 2017

Shop Class as Soulcraft: An Inquiry into the Value of Work

Matthew B. Crawford

NEW YORK: PENGUIN PRESS, 2009

The World Beyond Your Head: On Becoming an Individual in an Age of Distraction

Matthew B. Crawford

LONDON: PENGUIN BOOKS, 2016

Cræft: An Inquiry Into the Origins and True Meaning of Traditional Crafts

Alexander Langlands

NEW YORK: W.W. NORTON & COMPANY, 2018

Why We Make Things and Why It Matters: The Education of a Craftsman

Peter Korn

BOSTON: DAVID R. GODINE, PUBLISHER, 2013

Cents and Sensibility: What Economics Can Learn from the Humanities

Gary Saul Morson & Morton Schapiro

PRINCETON, NEW JERSEY: PRINCETON UNIVERSITY PRESS, 2017

The Lost Carving: A Journey to the Heart of Making

David Esterly

BLOOMSBURY PUBLISHING PLC, 2014

The Gift: Creativity and the Artist in the Modern World

Lewis Hyde

NEW YORK: VINTAGE BOOKS, 2008

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