

faculty profile

ROLFFRASTE

ROLF FASTE began his faculty position in the Design Division of the Department of Mechanical Engineering at Stanford in 1984. Because he had already been an associate professor of industrial design at Syracuse University in upstate New York, Faste maintained his rank and, after John Arnold in 1957, was the product design program's second mid-career hire. Faste replaced Bob McKim, who retired, and assumed leadership of the product design program.

Faste had a broad academic background. At the Stevens Institute of Technology in Hoboken, New Jersey, Faste did a bachelor's degree in mechanical engineering in 1965. While in college he was the foil fencing team captain and twice the Middle Atlantic conference champion. At Tufts University in Boston, he earned an MS in engineering design with a 1971 thesis titled "The Development of a Visual Extension to Syntectics Theory." While on the faculty at Syracuse University, Faste completed another degree, in architecture.

Between his bachelor's and master's degrees, Faste did coursework in business, art and architecture at the University of Washington. He also gained practical experience by putting his engineering knowledge to work. One applied project from 1968 was an industrial shrimp winch for his employer Marco, a marine construction and design company located in Seattle, Faste's hometown.

Faste also drew and painted with talent and confidence, and collected, designed and built functioning model sailboats. When he and his family moved into the Stanford faculty housing complex on Peter Coutts Road, Faste was displeased with how much space was wasted through unused corners and crawlspaces – so he reconfigured it architecturally for optimal light, storage, efficiency and style. "Rolf was a visual thinker, and came to believe he was dyslexic, which is highly unusual for engineering professors. His interest in visual thinking and education began a lifelong interest in creativity and its role in engineering and design."

During his first year on campus, Faste joined the faculty that steered the cohort of graduate students in the Joint Program in Design: Matt Kahn and Greg Lynch from the Department of Art, and David Kelley and Bill Moggridge from Mechanical Engineering. Faste's role was often bridge-builder – he moderated the professional engineering, product design and entrepreneurial concerns of Kelley and Moggridge with the expressive, aesthetic and communicative concerns of Kahn and Lynch. In personality, Faste brought extraordinary empathy and patience to the group.

Faste taught enthusiastically across the curriculum, including ME 101 Visual Thinking, the design program's entry-level course. The 1987–88 Stanford Bulletin described it as:

"Visual thinking and visual language skill developed and exercised in the context of solving design problems. Exercises for the mind's eye. Quickly executed diagrammatic, orthographic, perspective, and three-dimensional sketching. Relation of visual thinking to creative process. Emphasis on fluent and flexible idea production."

For many years Faste taught ME 115 B, Expression of Function and ME 116 B, Advanced Project Design

http://www.faste-foundation.org/about/rolf_faste.php

Stanford University Bulletin, 1987–88

(one third of the undergraduate product design major thesis sequence). In the mid-1990s, Faste co-taught Advanced Product Design with Sara Little Turnbull, then director of the Process of Change Laboratory in the Stanford Graduate School of Business.

Faste also taught ME 209, Aesthetics of Machinery, which promised to cover the “effects of design strategy selection, design media, construction and assembly strategies, human factors, and explicit or intuitive personal criteria on the appearance of machinery and designed objects. Students explore these issues and develop an awareness of their personal design style through design and construction of small-scale mechanical devices.”

In 1995, bringing his personal interest to the curriculum, Faste offered ME 109, Computer Aided Design of Model Yachts, which was supported by a \$10,000 grant to purchase software. According to an article about the class in the *Stanford Daily*, the course “will require students to design and build a 22-inch free-sailing model yacht, which will be tested in a major sailing event. By the end of the quarter, students will have a strong knowledge of sailing theory, model yacht design, the software programs Max Surf and Vellum and necessary yacht construction techniques.”

The culmination of the students’ design and construction efforts was a boat launch on Spreckles Lake, the model yacht pond in San Francisco’s Golden Gate Park. Faste is quoted on the Stanford Alumni website as saying “one of the things that captures the students ... is that their boat will outlive them and will become an heirloom that will represent them to their great-grandchildren.” Faste linked design learning, design making and design using to humanistic values of progeny, memory and legacy.

ME 313, Ambidextrous Thinking was another of Faste’s original contributions to Mechanical

Stanford University
Bulletin, 1994–95

The Stanford Daily,
23 February 1995

https://alumni.stanford.edu/get/page/magazine/article/?article_id=39900

Engineering’s design curriculum. Faste defined “ambidextrous thinking” as both-handed (involving the whole body in design action) and cognitively both-hemispherical (involving both sides of the brain: the logical, analytical and objective left half, plus the creative, expressive and intuitive right half – the then-popular lateralization theory). But Faste was not exclusively binary; he was interested in holistic and balanced thinking and making. The course description said, “visual and kinesthetic thinking skills developed and exercised in the context of solving design problems ... exercises to appreciate and develop the entire body’s role in creative thinking.”

Faste’s consideration of “the entire body” may have been influenced by an important research project he was involved in while still at Syracuse University. It was concerned with building accessibility for disabled people and how design might address their challenges. He served “as research associate on the American National Standards Institute’s A117 project, [and in 1979] he co-authored the national standards for accessibility to buildings that were adopted nationwide.” In the foreword to *Access to the Built Environment: A Review of Literature*, Faste’s co-authored report, Donna E. Shalala stated:

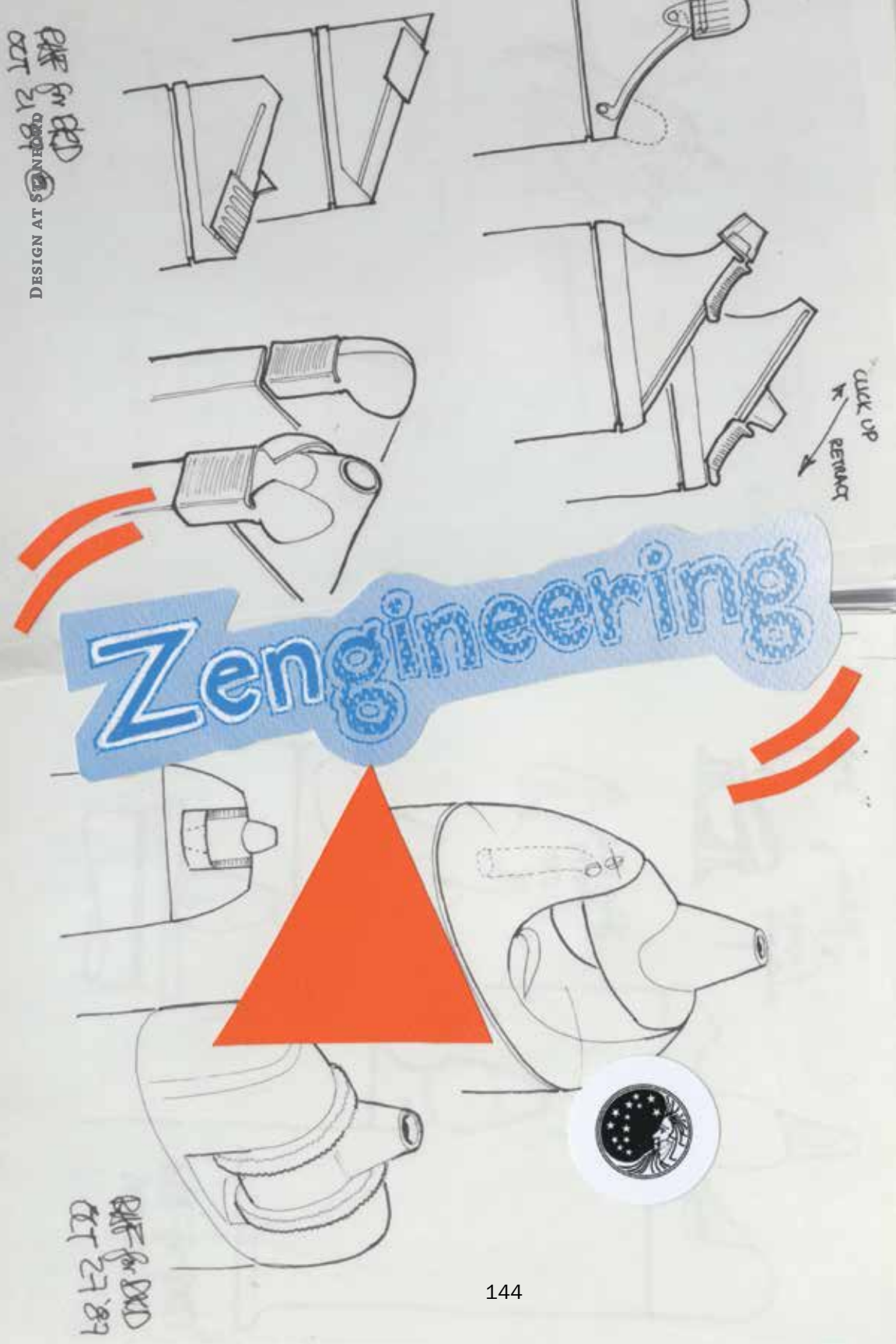
“Prepared under the supervision of the [U.S. Department of Housing and Urban Development] Office of Policy Development and Research, these volumes have won a research award from Progressive Architecture. To quote from the jury comments: ‘in terms of the effect that the work will have on future architecture and planning, the new ANSI standard A117.7 has got to be the blockbuster of all ... It’s a very solid piece of work.’”

In a 1977 article, *New System Propels Design for the Handicapped* that was published in *Industrial Design* magazine, Faste created an ideogram called The

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http://www.fastefoundation.org/about/rolf_faste.php

http://www.fastefoundation.org/publications/access_to_the_built_environment.pdf



Enabler. It graphically communicates humans' sensory, mental and mobility impairments. Two accompanying design matrices depicting The Enabler show issues relating to user physical and mental control and information display for users.

As stated in his *ID* article, Faste's human-centered concerns crossed design disciplines: "To date architecture has been the design profession most influenced because groups representing the handicapped have concentrated their efforts on access to buildings. But this issue also affects other design professions – landscape architecture, interior design, graphic design, and especially industrial design."

In 2014 The Enabler image was featured in the catalog *Beautiful Users: Designing for People* by Ellen Lupton that accompanied the exhibition by the same name at the Cooper Hewitt, the Smithsonian Design Museum. "Beautiful Users is dedicated to the memory of Bill Moggridge, a pioneer of human-centered design who designed the first laptop computer (the Grid Compass, included in the exhibition), and who was the director of Cooper Hewitt from 2010 to 2012." Of course, Faste and Moggridge were also once faculty colleagues in Stanford's design program.

Faste and Moggridge both presented at an American Center for Design conference in Chicago on graduate design education in the mid-1990s. Faste spoke passionately about Stanford's program. His presentation was unlike the tight, dry, academic deliveries of others – Faste raved about his students' creative work, describing in vivid detail one project in which a graduate student named Steve Chomyszak had made a unique 200 horsepower engine no larger than a basketball. Faste went well over his allotted time, gesturing emphatically, but few cared. Moggridge used his understated British humor, delivered in a warm baritone, to good effect during his presentation.

http://www.faste-foundation.org/publications/design_for_the_handicapped.pdf

<http://www.cooper-hewitt.org/events/current-exhibitions/beautiful-users>

“Zengineering” was another Faste concept, and the title to an in-progress book manuscript: *Zengineering: A Philosophy of Design*. According to the Rolf A. Faste Foundation for Design Creativity website:

“Engineering applies known principles to assure our creations are functional and safe. Zen courageously moves beyond conventional understanding to engage life in real time. These two opposites are explored as an inextricable Yin/Yang pair. One promotes critical thinking, the other non-judgmental mindfulness. One values logic, the other sees past it.”

Faste was personally engaged in meditative practices, and sought to integrate Western and Eastern modes of thought, aesthetics and action. The “Yin/Yang” pairing reflects Faste’s right brain/left brain balance idea that he developed in his ambidextrous thinking concept. He also taught at the Stanford Center for Technology and Innovation in Kyoto, Japan in 1991, bridging these worlds geographically as well as conceptually.

To return to Faste’s own “Gift of Dyslexia” – a chapter title in his unpublished *Zengineering* book – he took a condition often perceived as a weakness and turned it into a strength. Rather than let the brain lateralization theory limit his imagination, his creativity, his problem-solving, his tools of analysis and synthesis, Faste blended hemispherical modes into an integrative whole. Referring to his academic positions at Syracuse and Stanford, Faste asserted, “Where previously I was seen as the engineer on the art faculty, now I am seen as the artist on the engineering faculty. Personally, I’m not fond of such categories.”

Faste’s library reflected his omnivorous intellect: *Steal This Book* by Abbie Hoffman; *The Buddha in the Robot* by Masahiro Mori; *Democracy in America* by Alexis de Tocqueville; *How Children Fail* by John Holt;

<http://www.faste-foundation.org/about/zengineering.php>

Zengineering unpublished manuscript, Rolf Faste. 2003

The Medium is the Massage by Marshall McLuhan and Quentin Fiore; *A Study of Thinking* by Jerome Bruner, George Austin and Jacqueline Goodnow; *The Dymaxion World of Buckminster Fuller* by Robert Marks; *The Art of Invention* by William Ray; *An Introduction to Piaget* by P. G. Richmond; and *Understanding Human Nature* by Alfred Alder, among many others.

Faste bridged the worlds of theory and the design profession by maintaining an active design consulting practice throughout his academic career. Some designs were for quotidian products: toothbrush, pocket knife, beach chair, and knee brace. Others were for specialized medical devices: ambulatory sphygmomanometer, cardiac thermal printer, osmotic infusion pump, and theta wave biofeedback environment. Faste also subcontracted for David Kelley Design, the pre-IDEO design practice of his Stanford colleague, working on a toothpaste dispenser for Procter and Gamble in 1987.

Faste’s powers of empathy and imagination, partially enabled by dyslexia, helped him to see the world – and the world’s problems – differently. Referring to his early engineering work for the marine construction and design company, and equally applicable to user-centered design, Faste said, “imagining yourself to be a fish might help.” This philosophy served him well, but not long enough – Faste

Zengineering unpublished manuscript, Rolf Faste. 2003



died of esophageal cancer at age 59.

Besides his teaching, research and serving as “intellectual, spiritual and administrative leader” of the Department of Mechanical Engineering’s product design program, Faste and his wife Linda spent the final nine years of his life living with students in the Toyon Hall dormitory as resident fellows. In a memorial resolution presented to the Stanford Faculty Senate, Faste’s colleagues Sheri Sheppard and David Kelley wrote:

“He loved sailing, small British sports cars, chocolate, meditation and espresso. In other words, he loved life.” As a lasting testimony of Faste’s impact, “The Faste Laboratory, a center for innovation in the area of functional products at Luleå University of Technology, Sweden, was named in his memory.”

http://historicalsociety.stanford.edu/pdf-mem/Faste_Rolf.pdf

https://en.wikipedia.org/wiki/Rolf_Faste