

# GLASS ART

For the Creative Professional Working in Hot, Warm, and Cold Glass

November/December 2017



\$7.00 U.S. \$8.00 Canada  
Volume 32 Number 6



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# GLASS ART

November/December 2017

Volume 32, Number 6



Above: Telescoping House by Susan Cox.

Photo by Jeremy Saladyga.

On the cover: The Red Gazelle by Shelley Muzylowski Allen.

Photo by Russell Johnson.

- 4 Letter from the Editor**  
**The Season of Gratitude**  
by Shawn Waggoner
- 6 Hot Glass Studio Profile**  
**Archetypal Animals**  
Shelley Muzylowski Allen  
by Shawn Waggoner
- 12 Glass Talk**  
**Creating Magic**  
The MIT Glass Band  
by Colleen Bryan
- 16 Working Greener**  
**Amber O'Brien**  
Harnessing the Internet for a Sustainable Glass Industry  
by Colleen Bryan
- 20 GAS News**  
**Glass Art Society's 46th Annual Conference**  
by Kristin Solomon
- 24 Historical Glass**  
**Thirty Years at Bild-Werk Frauenau**  
The International Summer Academy  
for Glass and Arts  
by Sarah Höchstetter
- 28 Independent Artist**  
**Jeremy Grant-Levine**  
Germ's 1,000 Cranes Project  
by Shawn Waggoner
- 36 Architectural Glass**  
**Amy Baur and Brian Bolden**  
Digital Glaze Printing in Public Art  
by Colleen Bryan
- 42 Warm Glass Studio Profile**  
**Susan Cox**  
Examining the Home within Us  
by Shawn Waggoner
- 48 Skills and Techniques**  
**Ending Bubble Trouble**  
Avoiding Bubbles Between Layers of Fused Glass  
by Paul Tarlow
- 50 Marketing**  
**Your Online Identity**  
Creating an Attractive and User-Friendly Website  
by Mark Veit
- 52 CGS News**  
**The CGS Glass Prize and Graduate Review 2017**  
by Pam Reekie
- 54 Educational Glass**  
**The Fusion of Elements**  
Exploring the World of Fused Glass  
by Denny Berkery
- 56 AGG News**  
**The AGG James C. Whitney Memorial Scholarship**  
Helping Stained Glass Artists Grow  
by Tony Glander
- 58 SGAA News**  
**The Stained Glass School**  
Reaching Out to Include Regional Classes
- 60 What's New**
- 62 Advertisers' Index**

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## Letter from the Editor

### The Season of Gratitude

The November/December 2017 issue of *Glass Art* magazine begins with our Hot Glass Studio Profile on Shelley Muzykowski Allen, who reminds us that nature is precious and in many ways fleeting. Whether the beloved and revered horse or the magic and mythological unicorn, Muzykowski Allen's creatures are transitory, by their choice or by ours.

In a world where nearly 34,000 people are forcibly displaced every day as a result of conflict or persecution, Susan Cox makes a poignant statement about the importance of home and the heartbreak of losing our place in the world.

This Warm Glass Studio Profile reveals the ways in which Cox's cast glass defines the concept of "home" through evanescent qualities of childhood memories and lifelong moments of past and present.

Backed by a successful \$92 thousand Kickstarter campaign, functional glass artist Jeremy Grant-Levine, aka Germ, will flamework 1,000 glass cranes in a year's time. The artist was inspired by Japanese tradition that states anyone with the patience and commitment to fold 1,000 paper cranes will be granted their most desired wish, because they have exhibited the crane's loyalty and recreated its beauty.

These articles remind us to recognize and embrace this season of gratitude. *Glass Art* magazine would like to extend heartfelt thanks to all of our subscribers and advertisers who are essential to keeping our publication thriving. Though the print version of *Glass Art* is still by far the most popular, we are pleased to also offer it in digital form.

We appreciate both guests and subscribers who have been integral in making our *Talking Out Your Glass* podcast a great success in its first year, with over 30,000 downloads and growing. Subscribe on iTunes or Stitcher to hear fascinating interviews with glass artists worldwide by visiting the "Talking Out Your Glass Podcast" link under "What's New" at [www.glassartmagazine.com](http://www.glassartmagazine.com).

Hundreds of students and instructors have put our Glass Expert™ Webinars on the map, for which we are very grateful. Upcoming Webinars include *Fusing with Frit* with Lisa Vogt, *Verre Églomisé* with Peggy Pettigrew Stewart, *Fused Glass Breakthroughs* with Gil Reynolds, a brand new Webinar *How to Make a Bonsai Tree Glass Sculpture* with Craig Mitchell Smith, and more! Look for one new Webinar each month starting in November by visiting our website, where you can see the complete list of exciting online workshops for growing your glass skills without ever leaving home.

Thanking you for your generous and continued support,



Shawn Waggoner  
Editor



*Germ and Vorhees collab, ill'uminati, 2015.*

Photography by Jeff DiMarco.

### Advertising Deadlines

#### January/February 2018

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## Archetypal Animals Shelley Muzylowski Allen



by Shawn Waggoner

By suspending creatures in moments of tension and recalling the myths and legends with which they are associated, Shelley Muzylowski Allen reminds us that nature is precious and in many ways fleeting. From the red gazelle to Asian and African elephants, some of her subjects face extinction or have been forever lost in the tides of time, taking with them some of humanity's finest qualities.

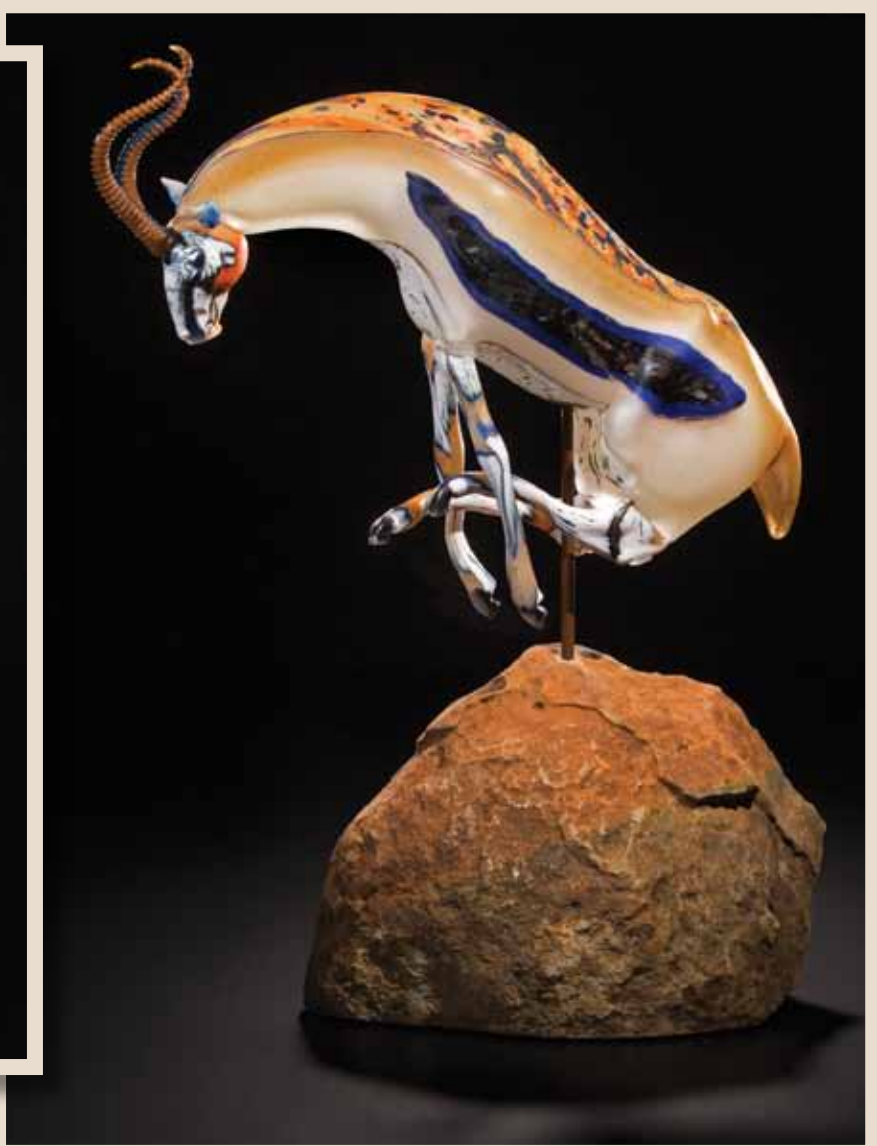
Relying upon her background as a painter and her understanding of anatomy, Muzylowski Allen creates impressionistic or contemplative expressions and vignettes. In combination with sumptuous coloring and the acid etched surfaces of glass, her forms inspire a remarkable and powerful influence on human feeling.

Born in Manitoba, Canada, Muzylowski Allen never considered working with glass until a co-worker remarked that her paintings would translate well to glass. After taking a course at Pilchuck Glass School, Stanwood, Washington, it quickly became evident that the artist had found in hot glass the perfect material for her painterly approach. Her textures, patterns, and gestures of brushwork enrich strong three-dimensional forms.

Muzylowski Allen worked with the William Morris sculpture team in Washington State as a glass sculpting assistant from 1998 through 2004. In 2005, she established a glass and sculpture studio with her husband, artist Rik Allen, at their property in Skagit County, Washington. The couple has taught internationally at the Toyama Institute of Glass in Japan; Nuutajärvi Lasikylä, Finland; the International Glass Festival in Stourbridge, England; and Huailai Tianyuan, China. They have also served as instructors in the United States at the Penland School of Crafts, Bakersville, North Carolina; Pittsburgh Glass Center, Pittsburgh, Pennsylvania, and at Pilchuck.

Muzylowski Allen has been awarded Provincial and Canada Council grants. Her work is held nationally and internationally in public institutions and private collections. In 2008, she had a solo exhibition, *Modern Menagerie*, at the Museum of Northwest Art in La Conner, Washington. Other selected shows include The San Juan Museum of Art, Northwest Washington; Blue Rain Gallery, Santa Fe, New Mexico, and Scottsdale, Arizona. Additional shows have been held at Habatat Galleries Detroit in Royal Oak, Michigan;





Traver Gallery, Seattle, Washington; and Schantz Galleries Contemporary Art, Stockbridge, Massachusetts. In 2012, Muzylowski Allen was a guest artist at Studio Salvatore in Murano, Italy, where she collaborated with artist Davide Salvatore on a series of large-scale sculptures.

Whether living things, such as the beloved and revered horse, or creatures associated with magic and mythology, such as the unicorn, Muzylowski Allen renders her menagerie in states of grace, repose, or movement. They are transitory, by their choice or by ours. These archetypal symbols reflect not only the artist's insights and experiences but also inspire a deeply emotional connection for the viewer.

### The Art of Finding Your Medium

Muzylowski Allen earned her BFA in painting and intaglio from Emily Carr Institute of Art + Design, Vancouver, British Columbia. Frustrated with the stationary nature of the painting process, the artist hung massive canvases on the wall and worked as large as possible, allowing her peripheral vision and entire personal space to be consumed by the work. Eventually the paintings were layered over with Plexiglas and stained glass, additional materials needed to satisfy the artist's imagery.

*(Left to right) Shelley Muzylowski Allen with Stretch of Shallow, blown, hand-sculpted, engraved, and cast glass, 31" x 24" x 28", 2017. Standing Elk, blown and hand-sculpted glass, steel, Three Rivers rock, 2014. The Crown detail and complete work, blown and hand-sculpted glass, steel, Arizona rock, 32" x 24" x 11", 2014. Photos by Russell Johnson.*

When a friend suggested Muzylowski Allen take a course at Pilchuck, she imagined glassblowing as a process for making perfume bottles and wine glasses, which didn't interest her. After seeing Pilchuck instructors make hot glass sculpture, however, her artistic goals changed quickly and forever.

Back in Vancouver, Muzylowski Allen began making 3-D stained glass sculptures in a futile attempt to replicate what she had seen at the Pilchuck hot shop. Determined to blow glass, she made the six-hour round trip from Vancouver to classes at Pratt Fine Arts Center in Seattle a couple of nights each week. She describes the transition to glass as "obsessed." A review of Muzylowski Allen's paintings during this time reveals swirling and spiraling paint on canvas that reflects how hot glass is always moving, the body of the artist fully involved with it.

*Shelley Muzylowski Allen, Indigo Dagger,  
blown and hand-sculpted glass, horsehair,  
leather, steel, 23-1/2" x 14" x 6", 2014.  
Photo by Acme Creative.*

In 1998 as a hot shop assistant on Morris' sculpture team, Muzylowski Allen brought bits, shielded open doors, and flashed pieces to the studio. In the morning, Morris' team worked to create parts, and in the afternoon they met at his bench to assemble those parts into a sculpture. "Bill had a talent for working with people by relying upon their strong points. He would ask me for colors and painterly bits. He allowed us all the freedom to do it the way we saw it. We weren't held back in any way."

Muzylowski Allen honed many skills on the Morris team including glass handling, communicating without verbal language, and staying on point all day. "Bill reaffirmed for me, because he was so fearless and experimental, that anything you could dream of you could find a way to create in glass."

### Developing the Muzylowski Allen Style

In a process that began more than a decade ago, Muzylowski Allen continues to establish her voice in glass. Though she painted landscapes, animals, and figurative forms, it took a number of years to bring that imagery into glass due to the steep learning curve. Once glass became second nature, her goals for the work moved beyond merely layering color to developing more line work and reverse painting with powders on glass. Muzylowski Allen shares with Morris an avoidance of making glassy glass, something shiny that speaks only of the material. Instead, acid etching reveals the layers of color created with glass powders, which are further enhanced with a fine diamond bit.

Muzylowski Allen's animal forms allow for personal interpretation through emotion and ambiguity. Oftentimes this connection triggers a memory. "I've had people tell me that the work reminds them of something. They start crying, and when that happens it's huge and so meaningful to me. I make this work because I have to. Otherwise these images would burn holes into my head. But when I've communicated something through the gesture, color, or expression of an animal, I feel like I've come full circle."

The artist used photography as inspiration when she was painting, but now Muzylowski Allen begins with loose drawings that coordinate thought with hand-eye coordination before going into the hot shop. Working directly with the hot glass, she refines and defines the concept. "Things are so different from a drawing to what happens in the hot shop that it's better if I keep the drawings on the looser side." For new forms, she works like an industrial designer, drawing a 360-degree view of the piece to indicate what's going to happen on all sides, reducing wasted hot shop time.

Never interested in riding horses, Muzylowski Allen preferred to draw, paint, and take photos of them. Some looked down on this love affair. "When you go to art school, drawing horses is not very well accepted. I quickly tried to change what I was doing and left the horse behind, but it nagged at me. It was a natural form for the transition to glass, because I knew it so well."



In researching family history, the artist's father discovered that their ancestors were a nomadic tribe and early domesticators of horses. The revelation brought credence to Muzylowski Allen's intuitive connection with equestrians. "They embody our society, because civilization was built on the back of a horse. They've been with us all along the way for a very long time."

A stint as a guest artist at Toyama Institute of Arts introduced Muzylowski Allen to an art form developed during the Edo period called netsuke, miniature sculptural containers that hang from kimono sashes known as obi. They are lidded with splendidly carved interpretations of Japanese folklore. The artist began her own series of netsuke, which included pieces such as *Indigo Gazelle Dagger*, an homage to the rare red gazelle that was almost hunted to extinction for its pelt in the late 19th century.

Additional inspiration comes from a place, her beautiful Washington surroundings, as well as her Northern Manitoba birthplace, where 10 months out of year the temperature can sink to 40 below. Influenced by a particularly dark, cold winter in Skagit County, Muzylowski Allen began dreaming about and imagining the polar bears of Northern Manitoba and their diminishing environment. All manner of Ursidae began finding their way into the artist's recent work.





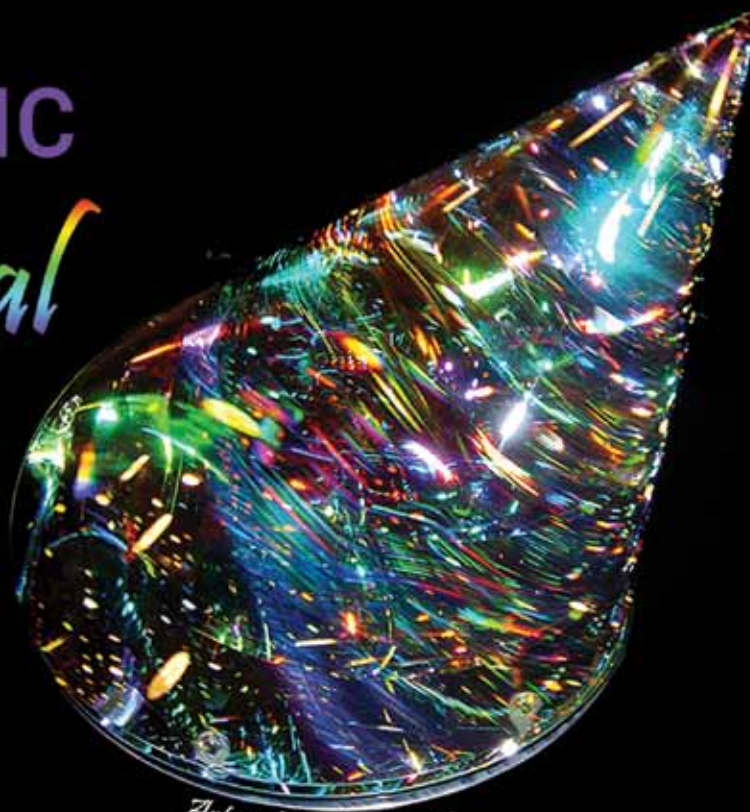
*Shelley Muzylowski Allen, Squire, blown, hand-sculpted, and engraved glass, 7" x 12-1/2" x 5", 2014. Photo by Russell Johnson.*

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## Making Glass in Skagit County

Shelley and Rik Allen share a home and studio on five acres of rural property in Skagit County. Their work space includes a garage fashioned into Rik's metal and wood shop and a metal barn that houses the hot shop, cold shop, and a small gallery that doubles as a packing area. Benefits of sharing studio space include being able to keep furnaces running, since one of the two artists is always working, and to experience a constant collaboration of ideas, tools, and techniques.

Once her team from Seattle arrives at the studio, they review Muzykowski Allen's loose drawing and work begins. The artist makes her forms in graal fashion, meaning she partially sculpts the body, does all the coloration, cools it down, and brings it into the cold shop. There she reverse-paints, that is carves away, some of the layers of color using a Foredom air tool and diamond bits.

Back in the hot shop, powders are added to create more contrast and define carved areas. The heads and antlers, often made beforehand, are kept warm in the garage and joined to the body. Making parts ahead of time gives Muzykowski Allen an idea of scale and gesture for the sculpture. All of the colors are glass powder or color bars. Paints are used only to touch up after punty removal.



(Top) Shelley Muzykowski Allen, Savannah, blown, hand-sculpted, and engraved glass, steel, Cypress Island rock, 23-1/2" x 24" x 15", 2015. Photo by Russell Johnson.  
(Bottom) Mirror, blown, hand-sculpted, and engraved glass, steel, 13" x 24" x 15", 2017. Photo by Acme Creative.



## Riding into 2018

The artist couple will be teaching at Pittsburgh Glass School in May 2018. She will also be demonstrating at the GAS Conference in Murano that same month. Students in their recent classes are so highly skilled in sculpting techniques that they are looking more for that special ingredient to help them find their voices or to make the work their own. "We're really teaching people how to think and approach ideas rather than a technique. That's exciting and much more challenging. If you practice, you can figure out how to make the form, but how to make the form a unique experience for yourself and others is the biggest challenge."

From August 26 through September 9, 2017, Blue Rain Gallery exhibited eight new Muzylowski Allen pieces. Some are large-scale animal forms combined to make one piece, the largest measuring 3 feet in length. Embracing the amount of rain and inclement weather experienced last winter in Skagit County, Muzylowski Allen worked with the layers of emotion, the blues and grays, and the wildlife of winter.

As she prepares for upcoming 2017 exhibitions including SOFA Chicago, November 2-5, and *Form in Miami*, December 6-8, Muzylowski Allen contemplates collectors of her artwork. "It's funny. It often happens that someone will buy one of my pieces with the caveat that they are not a horse person at all. I just love that, because my work is communicating something to them beyond its actual form."

Currently interested in three-dimensional painting, Muzylowski Allen endeavors to create installations. For her exhibition at the Museum of Northwest Art, the artist used unicorn tapestries from the 15th century as inspiration for a room filled with 3-D elements, including flora and fauna.

Because art plays a significant role in the discussion of how to preserve our natural world, Muzylowski Allen would love to be able to show her work in more easily accessible places. But the demands of glass don't allow for that. Like the material she's working with, the future for living things on our planet is fragile and needs protecting. "People in cities tend to have an out of sight, out of mind experience in regard to nature. Showing animals in different states and inciting thought about the creature or the environment is an important aspect of preserving them for the future." **GA**

*Shelley Muzylowski Allen was recently a guest on Glass Art magazine's Talking Out Your Glass podcast. Subscribe on iTunes or Stitcher to hear this and many more fascinating interviews with glass artists by visiting the "Talking Out Your Glass Podcast" link under "What's New" at [www.glassartmagazine.com](http://www.glassartmagazine.com).*



**Shelley Muzylowski Allen**  
**Scavo Studio**  
[shelley@muzylowski.com](mailto:shelley@muzylowski.com)

*Shelley Muzylowski Allen,  
Follow the White Rabbit, blown,  
hand-sculpted, and engraved  
glass, Utah sandstone, steel,  
19" x 15" x 10-1/2", 2016.  
Photo by Russell Johnson.*

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# Creating Magic The MIT Glass Band



by Colleen Bryan

The sounds of glass—shattering, singing, screeching, ringing, scraping, groaning, cracking, humming. The Massachusetts Institute of Technology (MIT) Glass Lab begins with fundamental, trial-and-error investigation of glass and sound. From there, it engages a surprising crew of creative geniuses to play original music on glass instruments made or wholly invented in the lab.

Many people love glass for its visual beauty and the way it plays with light. Fewer are drawn by its possibilities for sound, but sound is a central focus for the folks who are part of the glass band. The MIT Glass Band began in 2013, born of a collaboration between MIT's Glass Lab and its Center for Arts, Science, and Technology, and explores the intersection of glass and music. The story of the band's path through discovery in the intervening years is a tale of playful inquiry, innovation, and collaborative synergy.

## An Unexpected Home

MIT might not be the place you first think of for music. Or glassblowing. Or art. But as a place that generally supports the exploration of ideas for their own sake, MIT nurtures all three. Its basement glass lab is a study in orchestrated pandemonium.

Peter Houk, the director of the Glass Lab, has been the principle conjurer and orchestrator there for 20 years. A glass artist himself, Houk's job is both to teach glassblowing and to notice latent opportunities for students to learn through exploratory glass projects. When a student started making glass instruments, Houk recognized an opportunity for larger investigation.

(Left to right) Kaitlyn Becker, BS, MechE, 2009. Photo by Peter Houk; Inbar Yamin, BS, Materials Science, 2015. Photo by Lisa Abitbol. Glass instrument collage photo by Gabe Gomez.

Kaitlyn Becker, a flutist and piccolo player in the school's wind ensemble, started making musical instruments from glass as an MIT undergraduate in 2007. Luckily, she stayed on as an instructor in the Glass Lab and has been able to follow her curiosity. Her first glass instrument resembled an oboe with a double reed. She went on to make a didgeridoo, some bells, and other percussion instruments. Houk remembers, "This activity got me thinking about starting a glass band if we could round up other people who would be interested in making their own instruments."

In an earlier incarnation, Houk had attended Oberlin College as an undergraduate, taken classes at the Conservatory of Music, and pursued an interest in music. "When I chose to engage in glass full time, I left the performing part of my music behind for many years. Starting the MIT Glass Band was a way of reclaiming that dormant part of myself and integrating it with glass, a material that has completely captured my imagination."

## A Music Man

In 2012, the head of the MIT Department of Music connected Houk with a fellow bandmate in the group known as the Bang on a Can All-Stars, a touring sextet that is recognized for contemporary American classical music. Mark Stewart is a well-regarded musician and member of the All-Stars who brought musical chops to the Glass Band.





Stewart has toured for 20 years as a musical director and guitarist for musician Paul Simon and lives in Brooklyn, New York. He uses found objects to encourage ordinary people to tap into their instinctual relationship to sound and reclaim their musical heritage. Houk recalls: “Mark was interested in mining the generally unexplored area of musical glass sound. I brought him in as an artist in residence in 2013, and we’ve renewed that status each year since. Mark comes up to the studio several times a year and instigates magic!”

Though Stewart had no glassmaking experience, the glass men credit his contribution to their own growth in instrument making, glassblower Shaun Conroy attests. “Mark has been key to helping me frame questions: What size hole should be on the side of a tube to make any sound? What do you think about a glass string? Mark is very influential in helping people refine the ideas they come in with, as well as sparking ideas we never thought of.”

## The Glass and Sound Guy

Serendipity is a major player in many inquiries at the Glass Lab, and so it was with the Glass Band, too. Houk ran into Shaun Conroy at his off-campus studio in Cambridge, Massachusetts, and remembered him from Massachusetts College of Art. “I started describing this idea for a glass band, and Shaun reminded me that he spent a large chunk of his undergraduate years making glass instruments. He also had performed with musical groups. Since college, he had made glass harmonicas for Finkenbeiner Glass. I asked if he might be interested in joining us, and the answer was an immediate *yes!*”

Conroy’s experience taught him a lot about the sound properties of glass. “MIT has a traditional soda lime furnace producing glass that is relatively easy to work. I had experience pulling chunks of lead crystal from a furnace and constructing sound sculptures. Quartz has much better sound quality than either soda lime or borosilicate glass. I improved on my early crystal instruments by making them out of pure quartz. The glass harmonicas were made entirely of quartz, which is much harder to work. However, it has little thermal expansion, so it can be reheated with torches without the stress and cracking associated with soda lime or borosilicate glass.”

*The MIT Glass Band performing with the orchestra. Photo by Peter MacMurray.*

His seven-year apprenticeship with Finkenbeiner grounded Conroy in the precision skills of scientific glassmaking and gave him insight into when it was better to blow or buy. “A precision pour of a specific size and length is hard to achieve with soda lime. When you need to pull a tube at a specific diameter and length for a certain instrument, it is very difficult to control tolerances. In scientific glassblowing, however, you can buy a tube of any diameter that is cut to length and flame polished on the end. While scientific glass can be expensive, it can actually cost less money and be more efficient to purchase specified sizes than to make them out of a furnace.”

Conroy started coming to meetings, working in the Glass Lab, and fabricating instruments on his own. He became a lead member in the eventual Glass Band and the sound guy who would mic, mix, and amplify sounds in performance.

Houk reflects on the difference Conroy’s knowledge made in the instruments being built in the MIT Glass Lab. “Once we started making instruments of denser glasses, the sound became much more compelling. Shaun was able to bring us better sounding glass and glassmaking capabilities. His knowledge appealed to the MIT students’ need to be systematic and test their discoveries. He also knew how to help students achieve what they were hoping for from their own glass projects. Since none of the students in the Glass Band had been exposed to scientific glassblowing, Shaun’s skill set and knowledge base opened up a whole new dimension for us.”

By this point, many core elements had come together in the Glass Lab—the spark of inquiry, a glass furnace, students, preliminary inquiry, musical direction and vision from Stewart, skilled glass men with musical backgrounds in Houk and Conroy, and the latter’s knowledge of sound properties and scientific glassmaking. The next leap was a big one—how to move all these elements beyond sound toward music.

## The Instruments

Audiences often expect the Glass Band to concentrate on replicating recognizable instruments shaped from glass. That is only partially the case. Some of the instruments have no equivalent, or they only glancingly reference known instruments. “A lot of what we do is almost entirely due to happy accident and discovery.”

Certainly, there are Becker’s oboe and didgeridoos and bells. Others are a bit more obscure. Conroy remembers: “Mark came in one day playing a xaphoon, a pocket saxophone made of bamboo, invented in the 1970s by Brian Wittman in Hawaii. Mark wondered if we could make the reed instrument out of glass.” Conroy fashioned prototypes, then the final design. The result was a crystal version of another person’s invention, made with the inventor’s blessing and played on stage when Stewart toured with Paul Simon.

More commonly, though, the lab starts from the fundamentals of sound. What sound does glass make when you throw it on the floor? Blow through a tube? Tap it on a surface? Rub it with a bow? How do those sounds change with the thickness or length of the glass? “From the beginning, we attended to the sounds glass makes that other materials such as wood and metal don’t. It is useful to note that glass makes a lot of sounds that are painful and annoying. Much of our evolution has been discovering what sounds good and why, and moving toward that.

One instrument dubbed a membranophone was modeled on a vague description of a Japanese festival noisemaker called a popen and features a thin, slightly concave glass membrane. A single tube of glass has a narrow mouthpiece on one end and finishes at the other end with a nearly flat bubble formed from a thin concave glass membrane. As the musician blows through the tube, the pressure shifts the membrane from a concave to a convex position and issues sounds reminiscent of a frog peeper or a stapling gun or a cymbal. “Tiny differences in thickness and length of glass walls translate into tremendous differences in sound, from metallic to a more voice-like quality. That is part of what makes the instrument so compelling.”

The team in the lab classifies and marks musical instruments in taxonomies to help them understand and design sound. This object will be in the classification of a drum. That one excites a column of air so it is a wind instrument. Stewart introduced the group to the Hornbostel-Sachs system of classifying noisemakers. All of the instruments can be fit into existing classifications within this system, and it became a useful way to consider the invention of new instruments.

Investigation is active and busy. Glass beads are whirled around in the bottom of a beaker. Glass goblets are keyed to musical notes and arranged as a scale. Glass tubes are bowed with strings. Ridged glass ribs are played as a xylophone with a mallet. The sounds of glass instruments often belie all one knows about their analogues. For instance, Houk says, glass drums sound more metallic than the round, deep voices of skin drums.

Building the instruments for the band has been a cumulative process over the years, sometimes marred by setbacks. “We’ve broken a couple of things in concert, too. Sometimes not intentionally.”

## The Musical Repertoire

The first year of the Glass Band was largely spent inventing instruments and finding ways to make and play them. This activity continues, but is less feverish as the team has broadened its base of knowledge and developed a stock of instruments. At its first-year closing concert, the band played bells and some wind instruments to a piece of early minimalist music, *In C* by Terry Riley, as part of a larger orchestra. The last note of that concert was struck by shattering a glass globe with a hammer.

Now instead of playing existing music, the Glass Band plays original compositions and relies exclusively on its glass reproductions and inventions. “It is easy to play too many things at once. Our current phase involves trying to pare down and be more musical about what we’ve discovered.” The band is growing and discovering what combinations of sound and instruments are most pleasing.



Assorted glass instruments. Photo by Gabe Gomez.



An attitude of receptivity invites inspiration. For example, Houk was walking in the woods a couple of springs ago just as the spring peepers were at their most vocal. Stopping by a wetland, he heard one frog start to peep. Another joined with a responding but different sound and rhythm. “Within minutes, at least 10 peepers were all singing in counterpoint, together and apart. A few minutes later they quieted, and the cycle started again. It occurred to me that this would be a great concept on which to base a composition for membranophones, so we worked together to create a piece entitled *La Nuit de la Grenouille* (*The Night of the Frog*) with just this structure.”

## Band Members and Commitment

Stewart and Houk co-founded the Glass Band together, and with Conroy have moved it forward these past four years. One dependable member is MIT Professor Eric Demaine. A mathematician, computer scientist, and artist, Demaine is interested in, among other things, origami and bending glass, so he works in the Glass Lab and plays music with the band. Houk says the band averages about 12 people. “Generally, two or three undergraduates, two or three graduate students, two or three staff or faculty, a local physician/glassblower from the community, and assorted other local non-MIT people. The six-person core is supplemented by a few others cycling through. The band is open to anyone who is interested in staying around and playing well with others.”

The Glass Band meets in an MIT conference room on Tuesday nights throughout the school year, working on new material in the fall and winter and performing in the late spring and early summer. Stewart and Houk, with input from the band, structure the sounds that the band discovers into compositions that can be performed onstage. He determines the overall concept for each piece, which collection of sounds to use, the sequence of introducing them, and the choreography of the band members. “We collaborate a lot, but in the end, someone has to impose structure and limitations on all our exuberant experimentations and whip things into shape for performance.” That task is Houk’s, in close consultation with Stewart.

In rehearsals, the band is largely preoccupied with the synthesis of sound and re-searching the sonic qualities of glass. In performance, though, the visual and theatrical are ascendant. As *La Nuit de la Grenouille* unfolds, for example, performers approach each other on stage and engage in subconversations with their instruments. The din grows, and the interaction is amusing to behold. “The audience’s response is not at all the same as it would be listening to a recording with no visual component,” Houk notes.

In its performance at UrbanGlass Brooklyn, New York, the band projected a video of *Moving Sound, Moving Sand* onto a wall of the gallery, turned off the audio, and improvised a live soundtrack. “Every time we perform, the glass instruments are introduced, by type, to the audience by their makers/players with a bit of explanation of what they are and how they were made.”

This synthesis of sound and visual performance is part of what band members find unique and satisfying. The Glass Band has performed a dozen times in the past three years at venues such as the Fuller Craft Museum, Brockton, Massachusetts, the MIT Museum, and UrbanGlass.

GA

*See the next issue of Glass Art for a feature on the glass artists Peter Houk and Shaun Conroy and more about their personal artwork and inventions.*



Peter Houk



Shaun Conroy



Mark Stewart

Musician portraits by Lisa Abitbol.

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# Amber O'Brien

## Harnessing the Internet for a Sustainable Glass Industry

by Colleen Bryan

Amber O'Brien has modest hopes for contributing to her chosen field of glass art. She aims to archive the knowledge of the generation that founded the Studio Glass movement in a way that informs current artists on sustainable practice. Her goal is to communicate that knowledge in a forum that is easily retrievable, globally accessible, and addresses the fundamental problems of future glass artists.

O'Brien's quest started simply enough. As a glass student at the University of Hawaii (UHM) at Mānoa under the mentorship of Rick Mills, professor and director of the glass art program, she was steeped in that state's goal of achieving energy independence by 2020. She secured a grant through the university's Undergraduate Research Opportunities Program to investigate energy efficiency solutions in university glass art programs, such as the UHM Glass Area. That investigation led her to create a baseline database of current technologies to document their comparative energy efficiency for glass shops and studios. It also included a trip in 2016 to the 45th Annual Glass Art Society Conference in Corning, New York, where she was drafted onto a Green Panel to introduce her project to a broader audience. The response was hungry and enthusiastic. As a result, O'Brien expanded the scope of her investigation beyond the University of Hawaii to the glass industry at large.

"The level of support and generosity in the industry was amazing. After the panel, many people reached out to offer information and resources I'd never heard about." In addition to her database organizing the information for easy retrieval, she also established a website at [GlassArtEnergy.org](http://GlassArtEnergy.org) as an educational resource on sustainable practices across the industry.

### Living in a Complicated Time

"We live in a complicated time for glassmaking. We are trying to transfer knowledge between generations of glassmakers even as the underlying forms and technologies are being replaced."

O'Brien observes that the founders gained visceral familiarity with their equipment and materials through their need to build, calibrate, and test their own. They learned through making and apprenticeships to masters. As problems arose or discoveries were made, they communicated through written articles, snail mail, in-person gatherings, and by telephone.



Amber Cowen glassblowing in the hot shop.

One example helped O'Brien find the answers she needed to move her work forward. "*The Independent Glassblower* was a newsletter disseminated to glassmakers throughout the country in the 1980s and 1990s. The author received questions and answered them scientifically and correctly. Rick was a subscriber and shared his copies with me. I was surprised at how many of my own questions were answered there." Publication of the newsletter stopped in the late 1990s, and all the information it contained is locked in that format and generally unavailable.

The current generation of artists orders manufactured equipment and COE-rated glass, minimizing mistakes and speeding production but transmitting less intimate granular knowledge to the users. This generation does most of its learning and communication over the Internet. Skyrocketing costs for both energy and materials render earlier expectations about mastery or profitability over time obsolete. Environmental concerns and globalization further the complexity of working in glass today.

O'Brien insists that her generation not disparage the knowledge of previous generations of glassmakers. "We admire the work of our predecessors who spent the time and had the opportunity to learn about glass firsthand. They learned in preparation to teach, not to perfect their methods and forget them. Our way of knowledge acquisition relies on the fast-paced information transfer of the Internet." However, the scores of YouTube videos and websites on the Internet tend toward quick how-to hacks and marketing.

Artists sometimes attempt to use blogs to mirror earlier step-by-step development or Q&A, which often devolve into online scrapbooking. Most frustrating, from O'Brien's perspective, is the tendency to re-create the wheel, for lack of an elegant way to pass along what is known. "All of the information on which the foundation of the Studio Glass movement was built is not easily available to new and emerging glassmakers. What is available is highly dispersed and has not been screened for credibility."



## A Website with a Mission

The purpose of GlassArtEnergy.org is to curate and centralize what is known and to enhance the education of glassmakers in the transition to a sustainable industry. O'Brien targeted her website specifically to be user-friendly and accessible to glassmakers who don't have a formal university education. However, centralized information is beyond what is generally retrievable through university classes, libraries, or elsewhere in the glass art industry. "Having a central online archive makes research easier and sparks the curiosity that is the basis for change."

Rather than republishing, reproducing, or redistributing paper versions, the website provides links to a PDF that viewers can pull up on a smartphone and download. There are also links to other relevant websites. Examples of information that is currently reachable through clicks on GlassArtEnergy.org include:

- A DIY video on how to build your own electric furnaces
- Published papers on equipment and recuperation, plus research into solar, wind, landfill methane, and hydroelectric power sources
- Links to the Glass Manufacturing Industry Council, which hosts annual symposia on energy efficiency throughout the larger glassmaking industry.

O'Brien has compiled and maintains an index that attributes the source, including the author, title of the article, issue, volume number, and year of publication. "I am not claiming rights to any of this material. Rather, I am trolling for high-quality information and am making it centrally accessible where it is more likely to be read by a new generation of artists. I like to think that I am using the power of the Internet for good!"



*Having gaps between the furnace opening and the door allows heat to escape, thus consuming more energy during operations.*



*By eliminating gaps between the furnace opening and the door, the heat is held inside the furnace, reducing the amount of fuel required to maintain the melting point of the glass.*

## Focus on Energy

How does capturing historical knowledge relate to energy efficiency? The artist says, "To maximize energy efficiency, everyone in the community needs to understand studio equipment maintenance and be aware of innovation and exploration being done so artists can choose equipment and materials that bring the best value in terms of function, cost, and sustainability."

O'Brien emphasizes that curbing energy use is not only good for the larger environment, but also for the artist's bottom line. "The glassmaking industry struggles financially due to rising fuel costs, overhead, materials, and the price of replacing and repairing equipment. Lowering your energy costs can go a long way toward making a studio financially feasible."

## Sustainable Practices

The kind of information O'Brien has gathered and curated falls into three broad categories—sustainable practices, renewable resources, and innovative technologies. The category of *sustainable practices* entails being more efficient in the studio by understating one's equipment, calibrating it to achieve greater energy efficiency, and properly maintaining it. For the artist who is setting up a new studio, it can mean selecting more efficient equipment from the outset. Some choices, such as consolidating furnace and glory hole functions, can save money and energy over what is required for separately firing each. This approach was used by old-school Italian craftsmen and is reflected in some contemporary equipment designs.

This category also includes glass recycling. "Glass is infinitely recyclable. Many studios and states highlight glass recycling. The State of North Carolina, for instance, emphasizes glass recycling across the glass industry."

Sustainability goes beyond mechanisms to processes as well. To be more energy efficient, O'Brien counsels: "Target your processes toward your product. If you are going to make small things, use a small furnace or kiln rather than heating more spacious ones. Lower the temperature for the glory hole when it isn't in use. Only melt as much glass as you are planning to use. The money you save leaves more time for you to make art."

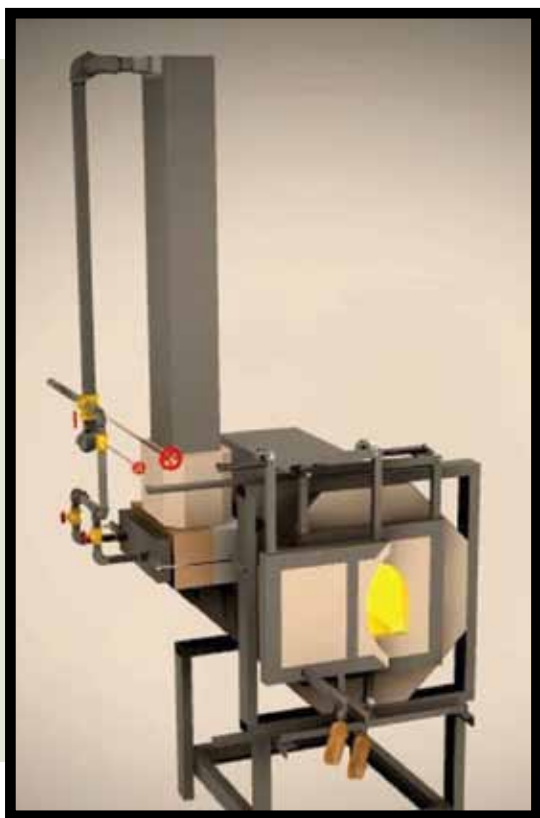
In her own glass work, O'Brien emphasizes sustainable practices. "When I do kiln forming, I only use recycled window glass from condemned buildings. I have also worked to simplify my kiln program to get the same results with the most efficient timing schedules."

## Renewable Resources

The category of *renewable resources* encompasses the range of renewable power sources, including solar, wind, landfill methane, and hydroelectric. The breadth of examples suggests exciting possibilities that can emerge from the specific options available to a given studio location. For instance, a studio in Oregon operates on hydroelectric power from a dam down the street. A public access studio in North Carolina uses methane from a nearby landfill. A facility in Oaxaca, Mexico, uses methane gas produced on-site from cow and pig manure to heat three furnaces, three glory holes, and annealing ovens. Each renewable source can be used to light and heat the studio or any attached homes as well as run equipment. Each source, however, presents its own challenges that must be addressed with design. For instance, if methane is the locally available renewable power source, it is important to take recommended safety precautions and procure the proper permits.

Old technologies, including recuperation, channel discharged furnace heat to warm the studio and preheat incoming air used for combustion. O'Brien's website links to a PDF summary of qualitative research on recuperation, as well as to many suggested refinements.

Renewable resources also extend to materials as well as fuel sources. Some glasses melt at lower temperatures than others, so some studios are choosing those with an awareness of the associated energy savings. They are also adopting more refined melting processes.



*Recuperation is an important aspect of energy efficiency in the studio. The use of heat recovery has been of interest to glass artists since the beginning of the Studio Glass movement. Obvious advantages of recuperation are reduction of greenhouse gas emissions and reduced fuel consumption, which thus lowers operating costs.*

## Innovative Technologies

The previous two classifications lead naturally to the third category, *innovative technologies*. O'Brien notes that traditional equipment—furnaces, annealers, glory holes—often can be adapted to run on renewable sources of electricity.

Some equipment conversions from fossil fuel to renewable power pose special challenges for reinvention. For instance, a continuous, consistent flow of energy to the center of a glory hole is necessary to maintain combustion, but it can be hard to sustain as doors are constantly opened and closed. Electric glory hole elements create radiant heat that can be plagued by undesirable hot spots and have potential for contact with the glass at the center. Much investigation is under way regarding electric glory holes, and links to those are provided on the website. O'Brien reports that the Corning cruise ship features a patent-pending electric glory hole in its glass studio.

Spiral Arts and Wet Dog Glass are two top equipment manufacturers exploring such adaptations. "Wet Dog has worked tirelessly to create more energy efficient, better performing, higher quality equipment that costs less and can be amortized from energy savings. Annual energy savings that can pay for new equipment is exciting for artists trying to outfit a new studio."

Finally, state-to-state variation in regulating various renewable power sources poses a formidable hurdle to studios attempting to innovate. New studios must navigate a permit process before opening, and existing studios must comply with local regulations as they retrofit to improve sustainability. These hurdles can be daunting, especially for alternative power sources that are unfamiliar to regulators. As an example, it took several years to obtain permits for the landfill methane project at the Jackson County Green Energy Park in North Carolina. The permit process can be expedited by shortening the regulators' learning curve with the research and data on renewable resources and energy transfer that has been amassed in other places. GlassArtEnergy.org provides a platform for studio operators and glassmakers to network among themselves about nearby power sources, potential hurdles, next steps, applicable resources, the kinds of questions that will be asked, and how to go about getting answers.

"Having easy click access to information about what is going on and networking with others who have been down a particular path or who are investigating a given option help spread that information farther and faster. It raises the consciousness of people building a new studio and can provide crucial information to address the concerns of regulators."

## Curating for Credibility

When new glassmakers need to know something, they tend to say, "Okay, I'll just YouTube it." But the quality of what they find is uneven. "People raised in the Internet era often don't distinguish between primary and secondary resources. Therefore, they may not recognize how much useful knowledge is lost as they move farther away from the originator. Nearly everything available on the Internet now is secondary or tertiary. We have a disconnect between credible information and easily accessible information and need to learn how to test the credibility of information about glass in this new forum."

On the GlassArtEnergy.org website, O'Brien seeks to curate credible resources by posting or linking only to process information that has been published and that comes directly from a primary source that is well versed in glass. That led her to such old resources as *A Glass Blower's Companion*, an early resource on glass equipment design by Dudley Giberson. She also discovered a 2006 article



published by Worchester Polytech in Murano, Italy, assessing the technology available for increasing energy efficiency in glass furnaces. Their comparative research proved the potential to save 35 percent in gas consumption depending on which technology one chose. "I uploaded the entire 80-page research report and bibliography onto the website as a PDF. This kind of research gets us beyond the anecdotal stories of one studio doing great things and toward a broader survey of what different approaches are being tried."

Going forward, O'Brien envisions the website as a hub for information exchange over the Internet. She would like it to be a communal effort across the glass art community. "Information changes as technologies improve, challenges shift, and uses expand. We need an interactive flow of information across the art glass community that constantly refreshes itself with that new information."

Beyond the original generation of studio glass pioneers, O'Brien sees that her generation will still need a common meeting place, even as artists themselves are dispersed across the globe. "If we are to assure that studio glass art does not fade and become an artifact of lost history, we must see our movement as something that is fluid, encompassing the founders, current artists, and future generations. We need to see ourselves as part of that flow. Changes to our consciousness and toward sustainable practices now will enable future generations to continue making glass."

### On the Horizon

O'Brien received a follow-up grant from UHM's Undergraduate Research Opportunities Program to present the findings from her original research at the 46th Annual Glass Art Society Conference at Norfolk, Virginia, in 2017, where it was enthusiastically received. She has begun to create a contact network and a process for reaching out and welcoming new people from the glass art community onto the website, and the artist is a bit amazed at how little traditional barriers of language and nationality hamper the discussion. "Glass is a universal language. Combustion is combustion."

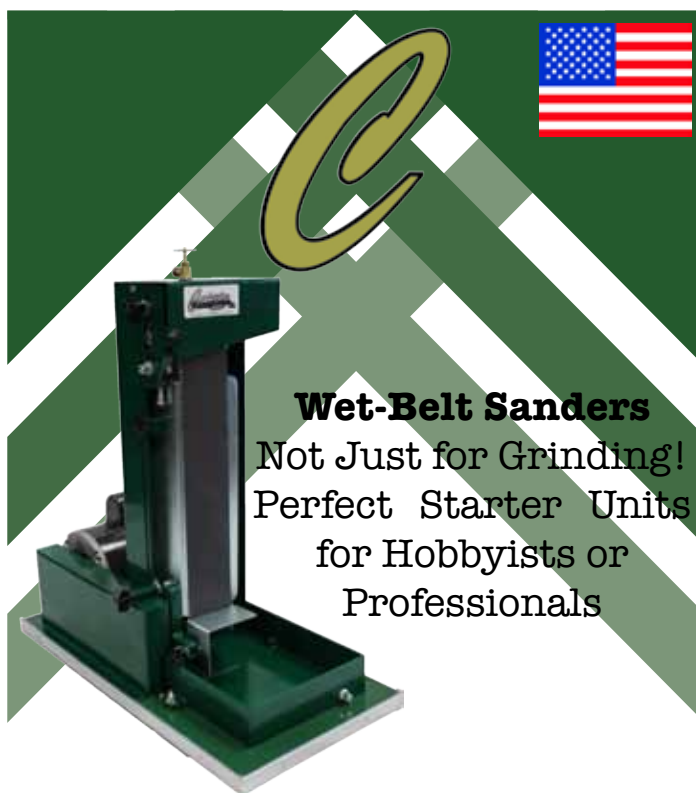
The steeper challenges are mundane ones, but the depth of material that is available to gather is not a problem. "There is so much information that people are unaware of." But O'Brien has yet to secure ongoing funding for the labor-intensive activity of identifying, assuring credibility, and curating primary sources so that end users can easily, quickly pluck the specific information they seek. There is also the ticklish task of negotiating with primary sources to use materials they might have hoped to monetize with royalties. Still, O'Brien is undaunted. "I feel like a super hero with the mission of using the Internet for good in my chosen world of glass art."

GA



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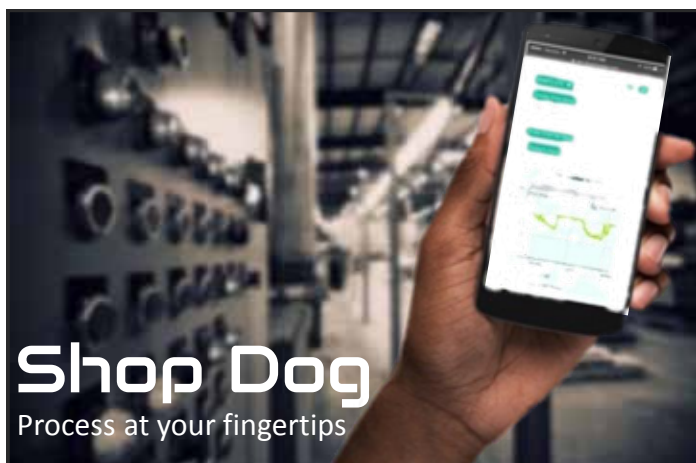
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# Glass Art Society's 46th Annual Conference



by Kristin Solomon

Photography by Heather Baigelman

The 46th annual conference of the Glass Art Society (GAS), *Reflections from the Edge: Glass, Art, and Performance*, was held June 1–3, 2017. Glass artists, collectors, students, and other industry professionals from all over the world flocked to Norfolk, Virginia, for the annual celebration of art made with glass. The attendees experienced technical glass demonstrations, lectures on science and art, and many more special events including several avant-garde glass performances.

GAS selected Norfolk and the Chrysler Museum of Art as the 2017 host because of the strengths of its renowned glass collection and its state-of-the-art Perry Glass Studio, which is growing a national reputation for its support of groundbreaking glass theatrics. Both the museum and the glass studio also serve as an anchor for Norfolk's blossoming arts district. New Energy of Norfolk (NEON), launched in the fall of 2015, invites visual, performing, culinary, and touring artists to transform several downtown blocks into a synergistic urban hub for creativity.

Norfolk marks the center of America's Eastern Seaboard, halfway between Maine and Florida. The first colonial glassmaking venture took place in 1608 in Jamestown, a short drive away. Today, Jamestown's glass artists occasionally bring their old-world techniques into the Chrysler's modern studio, bridging the country's earliest functional glass objects with today's contemporary glass scene. Norfolk is pushing glass to the edge and is a wonderful reflection of the innovation happening in glass today.

## Opening Conference Ceremonies and Celebrations

On the afternoon of June 1, the Opening Ceremonies welcomed GAS attendees to the 2017 Conference and paid tribute to recent GAS award recipients. The GAS 2017 Lifetime Achievement Award recipient is the bold and beautiful mixed-media sculptress Joyce J. Scott. The GAS Lifetime Membership honoree for 2017 is neon artist extraordinaire Wayne Strattman.

New York-based conceptual artist Mark Dion gave the keynote address, *Adventures in the Culture of Nature*, showing his journey through his art. Guests then headed to the waterfront to board the historic *USS Wisconsin* for a lively reception and great company.



*Karen Willenbrink-Johnsen and her team creating a Leucistic Peacock.*

## Demos and Lec-Mos

Alongside the Perry Glass Studio was the new Corning Museum of Glass Hot Glass Roadshow, which debuted offering a larger and improved working experience for the artists. This year there was another separate off-site location. Known as the Three-Ring Circus, it was made up of three mobile glass furnaces for daytime demos and evening performances. The Commune NFK and Work | Release Gallery is a local Norfolk artist space that dedicated its venue to the conference flameworking demonstrations. We were able to see John Miller's team push the envelope to build a 4-foot clear goblet in the hot shop using parts made on the fly.

Grant Garmezzy and his Richmond crew used their impeccable timing and team spirit to create a large lion sculpture. The lovely Karen Willenbrink-Johnsen and team brought to life a Leucistic Peacock, in full courtship display, with incredible detail and attitude.

Art met science in Wayne Strattman's lec-mo presentation, *Beyond Neon: Lit Glass Sculpture*. During his lecture he covered some basic theory and instruction on how to make lit glass sculpture using a kiln, a simple vacuum setup, and various gases.





*Joyce J. Scott, GAS 2017 Lifetime Achievement Award winner.*



*The closing night party at the Chrysler Museum of Art.*

## Lectures and Panels

This year's Labino Lecture, *Seeing Our History and Our Future With Glass: 4 Centuries of Mysteries*, was given by NASA's Dr. John Mather. He told the story of how glass in microscopes and telescopes opened our eyes and our feelings to the incomprehensible beauty of the cosmos and piqued the curiosity of what we might find with new equipment such as the James Webb Space Telescope.

Anna Mlasowsky shared the research she has been doing on the moldless *pâte de verre* technique, for which she received the 2014 TAG Grant. The lecture focused on technical details and the artistic challenges of this research project, and presented some of the results and current investigations.

The 2017 GAS Green Panel focused on organizations that are helping to facilitate social entrepreneurship and community engagement through their green glass studio practice. Panelists included Tracy Kirchmann as moderator, Rebecca Byer, and Timm Muth, who shared their own experiences creating energy from landfill gas, using waste stream recycled glass for cullet, and tapping alternative fuel sources for kilns and furnaces. They highlighted how these green ventures create vital engagement opportunities in their own communities while also supporting the arts, entrepreneurship, and education.

## Performances

Hannah Kirkpatrick mesmerized us at the Perry Glass Studio with her performance *From Pinhole to Pixel*. It incorporated different light sources (neon, molten glass, candles, and other materials) as a means of making a moving image through a camera obscura installation. We also celebrated an evening of magic with Eddie "The Great Flambeau" Bernard. He presented a unique set of effects and illusions with glass, fire, mystery, and audience participation in a magic show that could only have taken place in a hot glass studio.

This year the UNBREAKABLE student group from Chicago's South Side returned to the GAS conference with a multidisciplinary glass performance piece incorporating video, dance, music, and glass production to tell the story of their own lives, in their own words. The work focused on the best parts of their lives—education, people they love, art, and music. It also focused on the destructive forces that threaten their survival, including gun violence, institutional racism, and poverty.

## GAS Film Project Archive

Attendees left the conference feeling more motivated than ever! They were excited to head home to their studios, schools, and communities with fresh ideas for making works of glass art, disappointed only in the fact that they could not see more in such a short period of time. However, there's no need to lament. Whether you want to catch something you missed or relive all of your favorite highlights, we've got it covered.

Due to generous funding support, the wonder and excitement of GAS Conferences have been captured for posterity. GAS membership comes with an exclusive pass to gain access to the GAS Film Project, an incredible archive of videos from this year's conference and great moments from past conferences long ago. Of course, we will continue to build our library with many more amazing conferences to come.

## GAS 2018

The island of Murano, Italy, will host the 47th annual Glass Art Society conference. From May 16–19, 2018, *Il Percorso Di Vetro—The Glass Path* will lead attendees through the winding path of the island's remarkable history. At the same time, participants will be able to explore the future of glass and discover the hidden routes connecting the conference venues.

A selection of Murano's glass factories and studios will provide the Glass Art Society with the incredible opportunity to use these facilities for the conference. Attendees will also partake in highly anticipated GAS conference programs including glass demonstrations and lectures on inspiring glass topics. They will also enjoy special programming unique to Murano as they are surrounded by the beauty of the region of Venice. The trip to the Murano/Venice area will be the first time GAS has taken its annual conference outside of the United States since 2005, when it traveled to Adelaide, Australia.

The 2018 GAS Conference is sponsored in part by the Berengo Foundation and the artists of the Italian Steering Committee led by glass maestro, Lino Tagliapietra. "I am excited to have GAS in my native city of Murano, as it is a symbol of union between the two places that have allowed me to become the glassblower I am today," said Tagliapietra. "This conference will be a wonderful and historical event."



*The Hannah Kirkpatrick From Pin-hole to Pixel performance.*

You must be a current GAS member to register for and attend the conference. Registration opens in early December 2017 and is filled on a first come, first served basis. Be sure to register early to reserve your spot. Spaces are limited, and you won't want to miss out on this historic event!

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Visit [www.glassart.org](http://www.glassart.org) or e-mail [info@glassart.org](mailto:info@glassart.org) for more information on the Glass Art Society, its upcoming events, and how to become a member.

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# THIRTY YEARS AT BILD-WERK FRAUENAU

## THE INTERNATIONAL SUMMER ACADEMY FOR GLASS AND ARTS

by Sarah Höchstetter

Anne Petters, *Books of Disquiet, frit de verre*, 2017.  
Photo by Sarah Höchstetter.

In the middle of the Bavarian Forest in the southeast of Germany lies a small town called Frauenau. The town, which looks back at a centuries-old tradition of glassmaking, is where the International Summer Academy Bild-Werk Frauenau is located. Every year from May until September, artists and art enthusiasts from all over the world meet there in order to work with glass, to paint, to sculpt, or to be creative in many other ways. They come to Bild-Werk to enjoy the unique character of the academy, which takes up the spirit of the cultural heritage of glass production on the one hand and of the International Studio Glass movement on the other. This summer the academy celebrated its 30th anniversary.

### How It All Began

In 1962 a momentous event took place in Frauenau—the encounter between the artist Harvey K. Littleton and Erwin Eisch, artist and son of a family of glassworkers from Frauenau. The Eisch family had become self-employed with their own glassworks in the 1950s, and Erwin Eisch had soon started to use the family owned business to experiment with hot glass in an artistic way. During his journey to Europe in 1962, Harvey K. Littleton visited Zwiesel, a neighboring town of Frauenau, where he fortuitously found a free-blown glass jug by Eisch. Littleton was excited about the unusual glass object and decided to visit its creator. By doing so, Littleton laid the foundations of a wonderful friendship as well as a lasting and fruitful reciprocal exchange between the two pioneers of the International Studio Glass movement. Eventually the relationship led to the founding of Bild-Werk in 1987.

On his numerous visits to the United States, Eisch became acquainted with the concept of American summer schools such as Pilchuck Glass School. The creative and unconventional atmosphere that the artist from the Bavarian Forest experienced there animated him to create something similar in Germany. With the support of his wife Gretel and many others from Frauenau, including a few artists who were inspired by this idea, Eisch's vision was realized in 1988.

Two former industrial glass buildings were set up with workshops and studios, and even a small glass furnace was built. Finally the first *Academy for Head-, Hand- and Artwork* started in August 1988 and offered 10 courses in glass, ceramics, sculpting, and painting. About 60 international participants, quite a lot of whom had attended the glass symposium in Frauenau earlier that year, got together in the small town in order to share the enthusiastic atmosphere.

### Celebrating the Anniversary

Since August 1988, more than 250 artists and teachers from 30 nations and several thousand participants have filled the two academy buildings in Frauenau with life. This year the International Summer Academy took place for the 30th time. For this occasion, Bild-Werk has organized an exhibition in the Galerie am Museum in Frauenau that reflects the unique character of the academy in all its facets. Thirty-five artists, who over the years have taught at the summer academy several times and by that have shaped the nature of the school, contributed one or more objects to the exhibition.

With works by Eisch and his wife, glass engravings by Christian Schmidt, and glass paintings by Ursula Huth, four teachers from the very beginning are represented. A younger generation of artists at Bild-Werk are showcasing some of their work as well. Pavlina Čambalova from the Czech Republic and Anne Petters from London have brought fresh ideas to the academy by developing new modes of expression in glass engraving and in *pâte de verre*. The exhibiting artists are coming from near and far—Germany, Austria, the Czech Republic, Belgium, Hungary, and Estonia, as well as from Great Britain, the United States, and Australia—thus representing the international network of artists at whose center Bild-Werk lies.





*Mark Angus, Three Angels, etched and enameled stained glass, 2017.  
Photo by Thomas Ackermann.*



*Stephen Paul Day and Sybille Peretti, Brüderlein und Schwesterlein, blown glass and bronze, painted.  
Photo by Michal Poustka.*



*Vladimir Klein, Tóro, cast and sculpted glass, 2013. Photo by Sarah Höchstetter.*

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*Erwin Eisch welcomes the participants of the Summer Academy in front of the academy building, Tom's Hall.*

*Photo by Michal Poustka.*

Just as diverse as the provenance of the artists are the exhibits. Even though the glass medium dominates the showroom, the diversity of materials and techniques that is characteristic for the courses of the summer academy can be seen. Glass engravings, blown, and kiln cast glassworks are arranged side by side to wood sculptures, bronze objects and mixed media. Large-size oil paintings are attached to the walls right next to prints and glass paintings. Every single one of the objects tells its own story and expresses the identity of its creator. But as individual as the pieces might be, they have something in common as well. By operating between the poles of arts and crafts, they share an approach to their work that Bild-Werk has pursued and taught from its beginning. For almost 20 years, this approach of the academy was represented by Thomas S. Buechner on the one hand and Erwin Eisch on the other hand. Whereas Tom Buechner, former director of The Corning Museum of Glass, was an advocate of classical painting, Erwin Eisch has preferred and still prefers an intuitive and spontaneous approach to free painting.

Until today the school pursues a free didactic and artistic approach. Likewise it offers to impart craftsmanship as the basis for any artistic creation, especially concerning the glass medium. By emphasizing craftsmanship, Bild-Werk builds on the cultural heritage of the small glassmaking town that it has filled with international life for 30 years. It is a creative place where people meet and exchange ideas as well as being an infinite source of inspiration that brought the world to Frauenau. As Stephen Paul Day, glass artist and long-standing teacher at the academy, concluded in his opening speech for the exhibition, "Bild-Werk began 30 years ago as a tiny little school in a tiny little village, proving that great art has no boundaries."

GA

Visit [www.bild-werk-frauenau.de](http://www.bild-werk-frauenau.de) to discover more about the Academy, its programs, and upcoming events.

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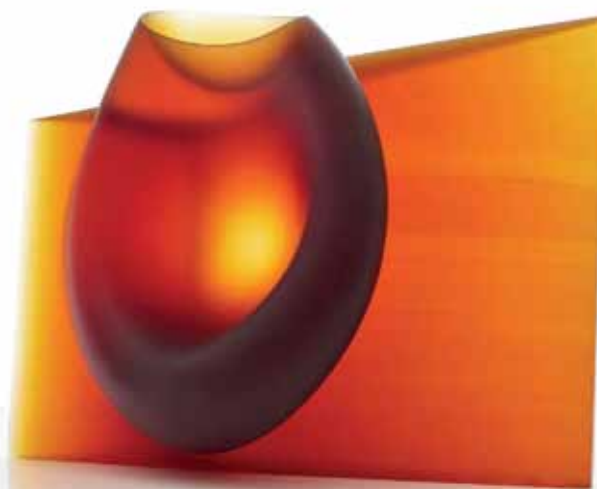
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*Jeremy Grant-Levine  
checking a mini installation  
of 1,000 glass cranes at the  
Divine Lorraine Hotel in  
Philadelphia, Pennsylvania,  
2016.*



## Jeremy Grant-Levine Germ's 1,000 Cranes Project

*by Shawn Waggoner*

Photography by Jeff DiMarco

According to Japanese tradition, anyone with the patience and commitment to fold 1,000 paper cranes will be granted their most desired wish, because they have exhibited the crane's loyalty and recreated its beauty. Backed by a successful \$92 thousand Kickstarter campaign, Jeremy Grant-Levine, aka Germ, will flamework 1,000 glass cranes in a year's time. Exploring one large idea requires the artist to focus on the moment rather than the future. "It's a step back from feeding a commodity market for a year to focus on one thing rather than what's next."

Based in Philadelphia, Pennsylvania, Germ has been flameworking glass pipes for over 13 years, earning a reputation as one of the most technical and innovative makers in the industry. Mixing classical shapes and modern silhouettes, he transforms functional glass into sculpture that has been exhibited at galleries in Philadelphia as well as Seattle, Washington; New York, New York; Miami, Florida; and Tel Aviv, Israel. Germ has also taught workshops and collaborated with other artists worldwide.

His 1,000 Cranes project represents more of a fine art move for the veteran functional glass artist, whose smokable pieces typically sell for thousands of dollars. This, the largest project Germ has undertaken to date, will require up to 250 pounds of glass for flameworking and approximately two miles of wire for display, totaling \$20,000 in materials.

As Germ works solo making the cranes, his focus remains on this singular artwork rather than the many individualized pieces he typically creates when making pipes. Though he misses the personal aspects and relationships involved with functional glass, the 1,000 Cranes project offers Germ the chance to achieve larger-scale impact. Upon completion, his work will be displayed in an immersive installation in conjunction with Arch Enemy Arts gallery in Philadelphia.

*Germ, Medici, 2016.*



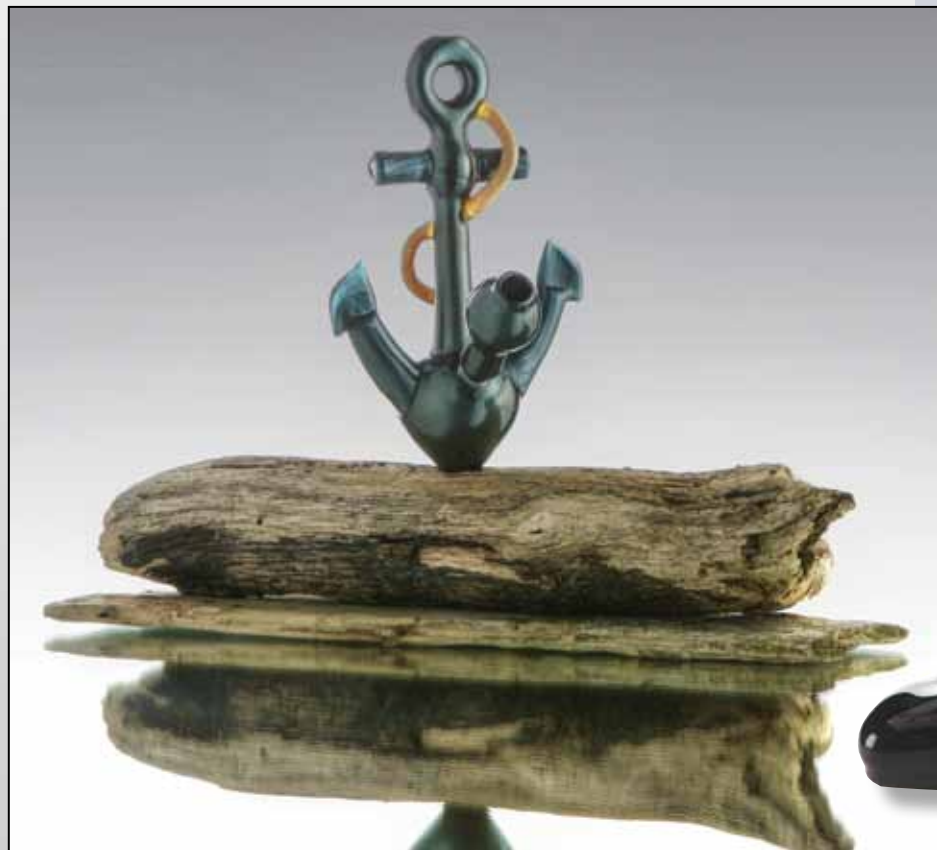
## The Science of Doing What You Love

Both of Grant-Levine's parents are artists who have worked in many mediums, glass excluded. The artist's early exposure to art, along with the first pipe he bought in high school, inspired his dream of becoming a glass pipe maker. As a teenager, Grant-Levine enrolled in a glassblowing class at a community art center in Connecticut only to realize that's not how you make pipes. Eventually he met a pipe maker at a music festival and discovered Salem Community College (SCC) and its glass program.

At the end of 2002, Grant-Levine enrolled in the scientific glass program there. Because it was almost taboo to discuss pipe making at SCC at the time, he learned nearly all of his functional glass skills outside of the classroom from his community of fellow students, including an artist named Spandex who was instrumental in teaching others.

Following graduation, Grant-Levine worked temporarily in scientific glass at three different factories. But after an eight-hour shift at a factory, it was challenging to go home and want to make pipes. Eventually he began an education of a different sort, primarily traveling the West Coast with his friend JD Maplesden and learning from the nation's top pipe makers. At the end of their journey, Grant-Levine ended up living in the back room of Maplesden's Spokane, Washington, studio for a few months. "This was an intense studio time. I didn't have a car, didn't know anyone outside of the studio, lived in the studio, and flameworked glass 16 hours a day."

Luckily for Grant-Levine, he ultimately landed in the vibrant, artistically driven pipe making community of Philly. There he found mentors in functional glass heroes JOP (Josh Opdenaker), JAG (Nate Purcell), and Zach Puchowitz, amazing examples for all the younger guys following in their footsteps. He also looked up to Marbleslinger, whom Germ considers to be his main mentor in the game at that point. In 2009, Grant-Levine opened a studio, Future Labs, with contemporaries Elbo and Coyle. When Elbo and Coyle moved to Massachusetts, Grant-Levine moved into Marbleslinger's studio. "It's been the most amazing experience for me, being able to work with a guy like that every day."



*Germ, Anchor from the Smoke on the Water series, 2015.*

*Germ and Tyme collab,  
Beasts of Big Business, 2015.*



*Germ,  
Montage Mini Tubes,  
2015.*

At the time Grant-Levine started his pipe making career, the aesthetics of pipe making were limited. His initial goal was to learn how to create the popular pattern work of the day. “Early on, the skill and knowledge were not there. It was challenging to have a vision for something more grand, but as time progressed people were constantly breaking the rules of what boro can do and redefining the material. It was cool to unlearn all the things that I learned about boro’s limitations and develop my own personal aesthetic.”

The alias “Germ” was the initial invention of childhood peers being unable to pronounce Jeremy, a shortcoming that irked Grant-Levine at the time. When looking for a moniker for his glasswork that would enable him to stay anonymous during Operation Pipe Dreams, the artist reclaimed his childhood nickname. “It was a beautiful consequence of the fear of putting our real names on our work that we ended up with these recognizable, marketable brand names that helped functional glass become the successful industry it is today.”

### **The Germ Style of Versatility**

Germ glass might best be described by the adage, “Nothing stays the same except the changes.” Always in flux, Grant-Levine’s work could focus on the sea and his New England upbringing through *Smoke on the Water* in 2015. The next body of work would reference Eastern spiritual practices and communal ritual through *Tools for Enlightenment* in 2016. *Bent Necks*, *Whimsies*, and his sculptural *Rabbi Pipes* comprise a varied line designed to keep things interesting for himself and his audience. He won second place at the 2013 Corning Museum of Glass FlameOff with a functional sculpted *Rabbi* piece. Collectors can always expect something innovative and unique from Germ glass.



*Dybukk collab with  
Vorhees and Ebz,  
2014.*





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Paul Messink



*Germ and Marbleslinger collab,  
William S Berg, 2014.*



*Germ and Trevy Metal collab, Tools for Enlightenment number 1, 2016.*



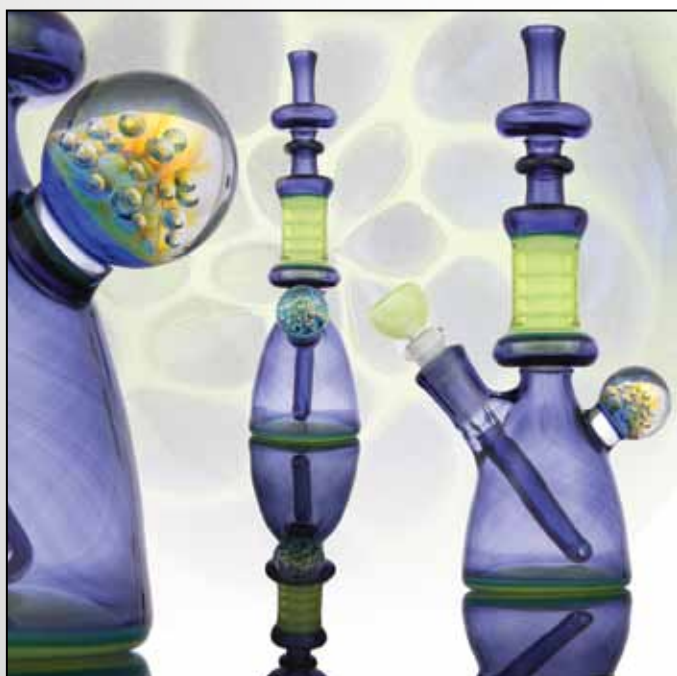
For many years Grant-Levine has experimented with the traditional German flameworking technique of montage. Inspired by German soft glass artists Thomas Müller-Litz and Kurt Wallstab, Grant-Levine has mastered the techniques he describes as “controlled chaos.” Montage requires the combination of many small sections of color into a retro/future/abstract free-flowing pattern.

“I had a great conversation with Robert Mickelsen last year. He told me that Frederick Birkhill came back from Lauscha in the late 1980s talking about montage and how it was impossible to do in boro. That’s what soft glass supposedly had over boro. Mickelsen said that he himself tried to do montage in boro and couldn’t, so he concluded that Birkhill was right, but years later I proved him wrong. That felt pretty good.”

Amazingly, Grant-Levine is colorblind and selects glass colors for his work based on contrast and opacity. “As long as there’s high contrast in the pattern, if I limit my palette to just a few colors I should be okay. If it looks right to me, hopefully it looks right to you. I run into issues with color when making my more realistic sculpted work. Then I rely upon input from my shop mates.”

From 2012 to 2015, Grant-Levine worked on his most successful body of work, the *Bent Neck* series. Frustrated with the aesthetic of mini tubes, where a straight beaker shape included a marble welded to the side of it, the artist set out to resolve the problem of the marble interrupting the flow of the piece. Instead of looking as if it were floating out in space, Grant-Levine fully incorporated the marble as part of the piece. “It also turned out that the bend in the neck worked really great functionally. “Function followed form in that case. But I have this problem where if anything is successful, I destroy it and move on to the next thing.”

Grant-Levine’s *Whimsies* began with traditional shapes and forms, which he transformed into his unique style. In response to online commentary about the functional glass community’s lack of history, the artist began his own research project to debunk the notion that pipe making is “the bastard stepchild of the Studio Glass movement.” He discovered *Whimsies*, glass top hats and canes made for fun at the end of the day by glass factory workers in the 1800s.



*Germ, Optic Mini Tube, 2016.*

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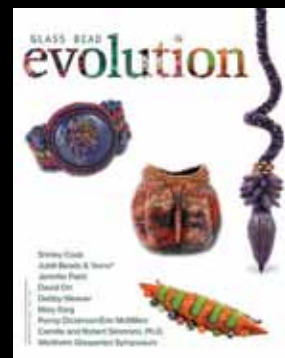
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Amongst all the *Whimsies* was a large number of giant soft glass pipes. “Here are these guys who had this hard job in a factory over 100 years before the Studio Glass movement, and what do they decide to make in their free time? Pipes. When I thought about what all of the items they were making had in common, they were symbols of luxury, of freedom, of free time, all of which were nonexistent for factory workers in the 1800s. I saw *Whimsies* as bold statements of individuality, which is exactly what glass pipes are today.”

## Germ Glass Senbazuru

*Senbazuru* is a group of 1,000 origami paper cranes, or *orizuru*, held together by strings. Ancient Japanese legend promises that anyone who folds a thousand origami cranes will be granted a wish by the gods. Some stories believe you are granted happiness and eternal good luck instead of just one wish, such as long life or recovery from illness or injury. The crane in Japan is one of the mystical or holy creatures said to live for 1,000 years. That is why 1,000 cranes are made, one for each year. In some stories it is believed that the 1,000 cranes must be completed within one year, and they must all be made by that one person to make the wish come true.

Sometime last year, frustrated with the state of his career and personal life, Grant-Levine didn’t know what to do with himself, so he started folding origami. He eventually transitioned from a 3-D paper model to a line drawing, then to a 3-D rendering of a crane created with glass rods. He posted an image of the piece on Instagram, and a follower jokingly commented, “Are you going to make 999 more of those?” Grant-Levine thought, “Yeah, maybe I will.”

With the assistance of his best friend Cat Walshak, Grant-Levine spent three months preparing a crowd funding campaign via Kickstarter. In 45 days he raised \$92,000 for his 1,000 Cranes project. “For me as a pipe maker, I don’t know the first thing about getting grants. So I used my big social media following to my benefit and wrote my own grant through the community.”

Kickstarter backers were given a choice of rewards, the most popular being one of the 1,000 glass cranes. In February 2018, teaming with Arch Enemy Arts fine art gallery in Philadelphia, Grant-Levine will present a massive installation of the work. Cranes in a variety of hues will be suspended in a big fade of color going from light to dark. “That was the point from the beginning, to get them all hanging in one place. I love pipes, but I just wanted to do something bigger. A few years ago my dad worked on this giant two-story-tall stainless steel piece for a sculpture garden in Connecticut. This is my attempt to work on that scale.”

Listening to crass punk, hip-hop, or most likely Erykah Badu, Grant-Levine creates glass cranes in the torch. All of the cranes are handmade without jigs. Finished work is stored in Grant-Levine’s office on a random assortment of free Craig’s List shelving units.

The artist is currently midway through the 1,000 cranes needed to accomplish his goal and allow him to make his wish. “It’s a new freedom I didn’t think I was going to find. Every day I come into my studio and know exactly what I need to do. Usually the struggle for an artist is what can I make? What do I *want* to make, what can I sell, and where is the intersection of all three? In this weird way, I don’t have to worry about that right now. I’ve completed over 500 cranes, and I’m still feeling it.”



*Germ, Kartika (Tools for Enlightenment), 2016.*



In reflecting on his journey through functional glass, Grant-Levine feels satisfied and justified. Every day that he gets to watch his peers break the rules of boro is a good day. "People are creating objects that push what was originally just an industrial material past its limits. Color companies are creating a wider palette for us. Tools and torches are being innovated because of our community. This whole industry has been built around supporting this artwork."

It's overwhelming to think about the strides functional glass artists have made over the last decade and will continue to make as marijuana laws loosen and social attitudes relax. "I'm so pleased to see where it's heading, but time doesn't slow down enough to truly reflect on it. At this point, the forward momentum is such that you almost take it for granted."

GA

Visit [www.1000glasscranes.com](http://www.1000glasscranes.com) for more information, to reserve a crane, or to contribute to the project.

Jeremy Grant-Levine was recently a guest on Glass Art magazine's Talking Out Your Glass podcast. Subscribe on iTunes or Stitcher to hear this and many more fascinating interviews with glass artists by visiting the "Talking Out Your Glass Podcast" link under "What's New" at [www.glassartmagazine.com](http://www.glassartmagazine.com).

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*Germ,  
Montage Bubbler,  
2014.*







# Amy Baur and Brian Boldon

## Digital Glaze Printing in Public Art

by Colleen Bryan

The enterprise **inplainsight art studio (IPS Art)** is the collaborative venture of artists Amy Baur and Brian Boldon. Since 2004, the two have jointly explored digital glaze printing, first on ceramics and more recently on glass and multimedia public art projects. Both artists hold master's degrees in art and use collage imagery to articulate stakeholders' voices in subtle, rich, and unfolding ways.

Located in the heart of the Northeast Minneapolis Arts District in Minnesota, **IPS Art** features emerging digital technologies applied to traditional architectural materials. The artists employ unusual technologies such as digital glaze printing alongside the traditional glass studio practices of kiln forming, fusing, slumping, casting, and hot glass furnace work.

### Investing in New Technology

The intersection of technology and studio art is common now but was less so in 2004 when Boldon and Baur began collaborating. When the need for technological innovation became a hard sell with art faculty members at Michigan State University, Boldon left a tenured professorship and struck out on his own with Baur, who had been an adjunct professor.

*Amy Baur and Brian Boldon, Light Waves After Thomas Young, digital glass prints, slumped glass, and stainless steel, 18' x 14' x 6", 2015. Created for the Metropolitan University Science Building, St. Paul, Minnesota.*

Digital glaze printing technology was developed in the United Kingdom and Germany around 2000. Brian remembers: "I was interested in image, space, and form, and met someone who was doing digital printing over glazed enamel. I went to Europe to meet the inventors and returned to convince Amy that we should buy the equipment."

Digital printing technology was developed for ceramics, and no one at the time was using it on glass. Boldon says: "I investigated adaptations and developed firing schedules while in residency at Pilchuck. Our enamel melts at a higher temperature than traditional glass transferware. This allows us to fuse, fire, and slump glass without the fear that the images will burn out when they get too hot. It creates some exciting opportunities."

Glass provides a richer language than can be developed on ceramics, where the image is restricted to the surface. Glass allows artists to play with varying degrees of transparency and opacity. "This ability to control the amount of light passing through our imagery provides a broader vocabulary and more resonance for conveying the voices expressed in our public artwork."



Boldon recalls the optimism around the technology in the early 2000s. By 2010, he estimates there were 50 machines in Canada and the United States. Still, pursuing art with a digital glaze printer involves nine steps between printing and pulling the object from the kiln. Each step requires both experience and skill. Persistently, the artists pushed the boundaries and developed the language so that now it is very direct and immediate for them to work this way.

### **Especially Suited for Public Art**

Boldon and Baur began exploring digital glaze technology thinking it might be useful for public art someday, but that they might be doing kitchens in the interim. However, their hoped-for future arrived more quickly than envisioned. “We lined up nine public art commissions right away.” Since 2004, the team has completed 38 public art installations.

One common desire for public art is a deeply rooted understanding of place communicating the sense that this artwork could not exist anywhere else. “This technology allows us to incorporate topographic maps or photographs, content that makes the artwork site-specific.” In 2009, **IPS Art** was selected to execute a 40-foot-long balustrade in Superior, Wisconsin. When Baur asked the jury panel why they won the bid, one juror responded, “Because you so captured the quality of light here.” Baur reflects, “That was easy. Because our process is photographic, light is inherent. That is one of the strengths of this technology.”

Further, since the process is image-based, Baur and Boldon create work that tells a story, articulating the myriad voices and themes that are important to various stakeholders. That is another aspect of effective public art.

Baur particularly loves those images fused on glass that exploit the material’s translucent properties. Now her choice of digital glaze printing on glass versus ceramic has more to do with budget and site selection than anything else. “It is always more expensive to work with glass than with ceramics. Unless the site has an ability for the work to be displayed off a wall or with backlighting, it is hard to justify the additional cost.” But when those opportunities are present . . . oh, my!

### **Technology Shaping Aesthetic**

Since the digital printer yields standard 10-by-15.5-inch images, Boldon and Baur adopt a modular format, piecing together many units to form a larger installation. “This digital printing was never intended for large-scale architectural work but was the only technology available to us at the time. We adapted our approach to accommodate that feature. Now the modular collage-like quality is characteristic of our aesthetic.” One installation for the Union Depot in St. Paul, Minnesota, includes more than 1,400 hand cut, kiln formed glass pyramids fused to look like diamonds. “The piece responds to the art deco theme inside the train station. We’ve found great ways to extend content in both glass and ceramic.”

*Amy Baur and Brian Boldon, Coelostat,  
digital glass prints and kiln formed glass,  
19' x 17', 2010. Created for Secchia Medical  
Center, Grand Rapids, Michigan.*

The color gamut that can be printed in frit glaze with inorganic pigments is narrower than most other digital printing technologies. The range is particularly limited in highly saturated fluorescents, cadmium “fire engine” red, or royal blue. “I can’t go out in the real world and replicate the red of a stop sign or the green of a Nike tennis ball.” The firing process also transforms color. “I try to communicate when we work with other artists that this isn’t the best technology for matching a certain color on a logo. The characteristic informs what Brian and I design. We use the technology within its limitations and celebrate its strengths: longevity, excellent high resolution, and fantastic detail.”

### **Process Evolving with Technology**

The artists’ process in approaching public art is evolving. The team flies in to visit a site toting video cameras, a Go Pro camera, and a portable 3-D scanner on an iPad. They scour collections and digitally record conversations, all to build an archive of source material from the site and from the community for the eventual artwork. “Onsite research is my favorite part of a project,” Baur notes. “It is certainly the easiest part. Things only get harder as decisions are







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and service centers across North America.*

made about what should *not* be included. The ability to set aside wonderful tidbits and use only what is necessary is essential to a valid and enduring piece.”

The artists engage in rapid, high-level collaboration and lots of practical questioning to develop concept, then prepare sketches and models for the presentation. “Rather than bidding specific solutions, we bring conceptual umbrellas with changeable parts. Our basket of ideas centers around these people and this place, supported by strong references attesting to our expertise and experience. Being more collaborative in the presentation allows stakeholders to feel heard and gain a footprint in the work. Initially, we thought we had to answer every question before a presentation. We now recognize that this more open exchange of ideas with the selection committee really shapes the creative process and a successful outcome. If they like us and our ideas and feel reassured by good references, we can still get the project. That took some time to learn.”

The artists’ experience and training help them understand scale and perspective as well as how light, distance, and space affect im-

agery. “On a 10-by-20-foot piece of work, small detailed elements are absorbing up close. We can calculate how much they will fade into the background and what focus will emerge as the viewer backs off 10 feet. We play with depth as well, designing for a corridor or around a tight corner, taking into account the shifting visual perspectives from various orientations on a staircase. Most spaces have few great static vantage points, so the ability to visualize is valuable. We are not interested in decorating a building but rather integrating visual art into the language and purpose of the architecture.”

Baur says that the strength in their collaboration comes from complementary and different interests, expertise, skills, and talents. “I can tell a story and Brian can conceptualize anything,” Baur says. Early on, Boldon expressed a desire to see the image wrapped around a piece of sculpture. Now he concentrates on pushing the boundaries of substrate to say something about the concept and hold up to the conditions at the site. Baur has an MFA in photography, which was all-digital in graduate school. “As light, image, and location become primary layers of expression, we prefer to capture our own

*Amy Baur and Brian Boldon,  
Trestle, digital glass prints  
and tempered float glass,  
28" x 40', 2009. Created for  
the University of Wisconsin-  
Superior Rothwell Student  
Center, Superior, Wisconsin.*





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images at the site.” They paint and draw original images for their projects. People are then hired to crate the work, but they often drive it themselves to the site for installation. “Because we are both artists and fabricators, we can offer a lot of artwork for the budget.”

### **Recent Projects**

Three recent projects demonstrate how Baur and Boldon’s work has evolved in applying digital glaze printing technology to glass. “These works of art show the progression of the image from a flat mural to three-dimensional sculptural installation. Together, the works reveal an incremental transition that happened over a period of six years. “We keep trying to step it up, even though it cuts our profit, and do something new every time.”

*Light Waves after Thomas Young* (2015) is an 18-by-14-foot sculpture completed for Metropolitan State University–Twin Cities. The artists fused digital glaze printing technology on slump glass and mounted it on stainless steel waves. “The sculpture used glass to depict an 1806 demonstration that light travels in waves below the visible spectrum. This important discovery grounds a host of different scientific disciplines, many of which are taught at the university and referenced in the sculpture.”

Boldon observes: “The sculpture is quite changeable with the light, and thus one of our best examples of taking imagery, fragmenting it, and creating a dialogue between the subject and the glass. It is not about an image on, but rather an image *in* an installation.”



*Amy Baur and Brian Boldon, Beacon, digital glass prints, kiln formed glass, and aluminum, 6-1/2' x 10' with various depths, 2009. Created for the Southeast Division Police Station, Houston, Texas.*

The Livingston Lord Library of Moorhead College in Moorhead, Minnesota, commissioned an installation titled *Current* for its entry foyer in 2016. Baur designed a 33-foot-wide by 40-inch-high by 15-inch-deep artwork in which glass plates splay to represent the pages of an open book. Boldon notes that each page was differentially angled accordion style on the wall above the entryway to create the effect.

The Red River runs through Moorhead and elbows its way through the designs on the glass panels alongside historical images and quotations. High-quality theater focus lights shine on the pages to project images from the glass onto the wall behind the pages. From the foyer approaching the display, the library becomes a part of the book. "Conceptually, this installation is about the flow of information. We had long wanted to do a projection piece exploiting the transparency and opacity of glass, so that came together in this project. We worked in the modular discipline imposed by the technology."

A cousin to *Light Waves* is a 2017 installation entitled *Flux* that was commissioned for the Geology, Geography, and Environment Sustainability Programs at Miami University of Ohio. This piece is grounded on themes of crystal and lattice. The environmental sustainability staff wanted to reference examples of stressed landscape, so much of the imagery is of strip mining, oil shale, and distressed landscapes around the world. Some of Baur's drawings made it into the piece, as did one of Boldon's paintings.

To the left, photographic imagery is fused to glass that folds and cascades along the wall. The final third of the piece is built of 640 equilateral triangles mounted on 160 squat aluminum pyramids. The triangles are hand painted porcelain with a fired glaze. Transitions are softened from a painting, to the image of a painting, to a photograph, and from glass to porcelain. *Flux* posed a considerable engineering challenge, Boldon admits. "It was a labor of love to fit those all together to provide surprising and interesting transitions as the viewer moves between floors."

## Engaging Other Artists

Baur is enamored with digital glaze printing technology. "As a photographer, it rocked my world to discover that I could make building-size imagery. A decal process where I don't have to worry about the effect of ultraviolet light, dust, or scratches on my prints, where I can achieve high resolution and detail—that is wonderful! And it produces a digital file fused lastingly to glass." She is committed to sharing the technology with fellow artisans through direct technical support and workshops.

Baur's secondary business enterprise *Decals4Artists* provides a means to experience the artistic possibilities of digital glaze printing without significant investment in equipment or training. The service is straightforward. Every Tuesday, Baur downloads original photos, drawings, or text from other artists through a link to the Decals4Artists website. She prints decals from the images and ships them on Thursdays. "I enjoy the opportunity to look up from my more solitary studio work. Some of our clients are renowned artists, while others are crafters making gifts for their grandmothers. It has been great to share technology and pay for health insurance, and it's a fun way to interact with wonderful people from around the world."

For their workshops at UrbanGlass, Pilchuck, and Foci – Minnesota Center for Glass Arts, students supply images, and Baur and Boldon do the printing ahead of the workshops. Those images then become the source material. "Both the weekly decal printing and the workshops allow artists to change the ways they think about their work."

Ever on the lookout for emerging technology that furthers such promise, Boldon is intrigued by experimentation with 3-D technology. He believes that exploration can eventually supplant the need for glass molds and push the boundaries of glass art and crafting beyond their current limitations.

GA

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Amy Baur and Brian Boldon, *Current*, digital glass prints, tempered, laminated low-iron glass, and aluminum, 40" x 33' with various depths, 2016. Created for the Minnesota State University Moorhead Livingston Lord Library, Moorhead, Minnesota.



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# Susan Cox | Examining the Home within Us

by Shawn Waggoner

Photography by Jeremy Saladyga



The United Nations High Commissioner for Refugees (UNHCR) reports that we are now witnessing the highest levels of displacement on record. An unprecedented 65.3 million people around the world have been forced from their homes. Among them are nearly 21.3 million refugees, over half of whom are under the age of 18. In a world where nearly 34,000 people are forcibly displaced every day as a result of conflict or persecution, Susan Cox makes a poignant statement about the importance of home and the heartbreak of losing our place in the world.

Informed and inspired by her background in architecture, Cox's cast glass forms reveal her unique understanding of the correlation between light and space. The artist considers elements that define the concept of "home," including the evanescent qualities of childhood memories and the lifelong moments of looking back and looking forward. She explores the landscape where we feel most at peace or at home, as well as the act of individualizing a home to identify and make our own. Cox's sculpture triggers examination of the home within each of us.

Working at her kiln and casting studio in Pound Ridge, New York, Cox earned a master's degree in architecture from Columbia University. In 2005 she turned to glass as a more immediate means of exploring ideas about light, space, and memory. In 2014, Cox was awarded a four-month residency at Bullseye Resource Center, Mamaroneck, New York, and was selected as an *Emerge 2014* finalist. In 2015, she was honored by ArtsWestchester as one of "50 for 50" artists, recognizing 50 outstanding artists living or working in Westchester County. The artist had her first solo exhibition *Finding Home*, held December 3, 2016, through April 4, 2017, at View Art Center in Old Forge, New York.

*Susan Cox, Landscape House: Midwest, glass, 6-1/2" x 8-1/4" x 17-1/4".*





*Susan Cox, Pentimento, glass,  
19" x 6-1/4" x 14-1/4".  
Photo by the artist.*

## From Architecture to Glass Art

Cox draws her investigations of home from her residential architectural background. Though she enjoyed the designing process, working with clients presented challenges. "In architecture, you're lucky if 25 percent of the work involves creativity. Most designs are the result of a solution settled on by a group, not an individual expression. Working with glass, I keep in mind all the things I learned from architecture, but I can work at a much faster pace. Even though I might have something in my kiln for three weeks, that's doable compared to two years."

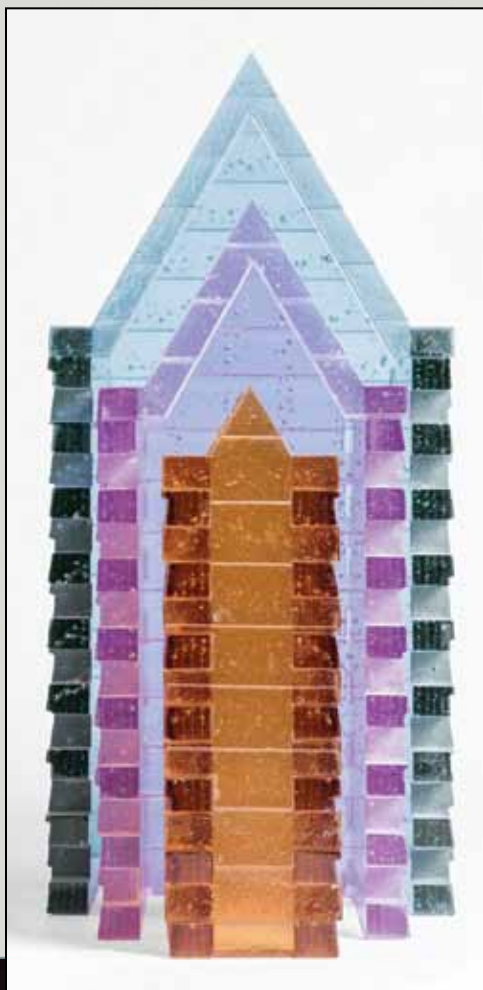
Transitioning out of architecture beginning in 2000, Cox committed to her next medium at a slow and steady pace. Intrigued with glass, she learned and developed specific skills and techniques in classes with Bob Leatherbarrow, Judith Conway, and her pivotal class, *Ways of Thinking, Ways of Making* with Jane Bruce and Steve Klein. "That's when I realized I could take the ideas I had in architecture and explore them three-dimensionally in glass. I *think* three dimensionally and *sketch* in perspective. I was looking for something that would allow me to continue that."

Casting became Cox's technique of choice early on. She took a short casting class from Tessa Clegg at UrbanGlass, then experimented, read, and learned from failures. Three years ago, a class taught at Pilchuck by Daniel Clayman helped to advance the artist's casting skill.

From the beginning, the work attempted to define space and incorporate light as a part of the sculpture. On a trip to Rome, Cox visited the Pantheon, a favorite Italian structure and one she considers a quintessential classical building, comprising a perfect sphere on top of a cylinder. An oculus at the top produces a shaft of light that streams down into the space, resulting in a near-religious experience. In 2008, the first real piece that Cox cast re-created the sense of space and light she had experienced at the Pantheon.

In 2014, a four-month residency at Bullseye Resource Center, Mamaroneck, New York, propelled the artist forward toward her artistic goals. Cox currently participates in a critique group with artists Jane Bruce and Sandy Gellis and was discussing the results of the group with Lani McGregor, director of Bullseye Projects and Gallery. McGregor was interested in how the artists were able to critique one another in a positive way and wanted to bring the three women together in the same space to work for an extended period of time.

What began with the artists doing their own radically different work evolved into continuous conversation. "The people who work at the Bullseye Resource Center were fantastic and became involved in our conversations. The type of experimenting this afforded me has clarified my thinking. I had some monumental failures trying to cast some of these houses. I kept a blog going while we were there and shared a lot of my work on Facebook. It was an opportunity to do some really deep thinking about how to make my work."



## The Evolution of Process

Cox sketches and draws at her drafting board until she needs to see the work in three dimensions. A series of foam core models is then produced in an attempt to perfect proportions, after which Cox creates a rubber mold of the model or starts building a wax form. A final plaster silica mold is made from the perfected original.

As of late, casting alone has not produced the architectural qualities desired by Cox. In response, she began having slabs of glass water-jet cut to produce crenelated edges that fit together like finger joints, allowing Cox to translate the construction aspect into building with glass. *Telescoping House: Evolution* incorporates Bullseye glasses that change color in different light. The glass is cold worked and assembled with epoxies. The resulting assemblage of three increasingly larger houses can be pushed together or pulled out like a telescope.

Cox solved another construction mystery for her piece *Landscape House: Midwest*. A variety of colors were premade with a gradation of color, and the series of slabs were fused together. Interior work with powders produces the image of a road cutting through the sculpture. Surface-layer powders create white wispy clouds on the surface layer. At 1-1/2 inches thick, the slabs were taken to Kevin Kutch at Pier Glass, who cut, beveled, and epoxied the piece.

## Finding Home

Cox's inaugural solo exhibition explored the idea of what home means to different people. The View Art Center provided the ideal setting for the exhibition, complete with high ceilings and seven clerestory windows in which the artist placed her slumped series of clear glass neighborhoods.

Out of 13 pieces, three were pure cast glass. Others included assemblages such as the artist's *Landscape Houses*. Instead of a house viewed in a landscape, Cox presented the landscape in the form of a house. These included a valley, a Midwest scene, and a clear house that had been mirrored on the inside. Viewers saw within it a distorted view of themselves, realizing that home is within each of us.

*Finding Home* also presented three of Cox's *Telescoping Houses*, based on an architectural form from the 1600s. At that time, additions to homes were constructed in an identical style to accommodate growing families. "My thought was that you'd be in the smallest house looking forward to your future. Or you could imagine yourself in the large house looking back at where you had come from." One of Cox's *Telescoping Houses* started very pale and morphed into intense color, a second presented discordant colors, and the third featured images of Cox's family created via decals fired inside the glass.

*Streetscape* combined a 30-by-40-by-32-inch galvanized and etched metal top with 120 cast glass houses measuring one and a half inches high, each one a slightly different form and color. "In graduate school I studied Levittown, a planned neighborhood on Long Island developed in the 1950s when men were coming back from the war and starting families. Five different house forms were built on each street, one right after another in an assembly line approach to building. I visited the neighborhood in the 1980s and had trouble finding an original house. They started out identical, but in 30 years each house was very different. I took from the experience that people really want to personalize their homes and make their dwellings unique to themselves."

(Top to bottom) Susan Cox, *Evolution*, glass, 19" x 6-1/4" x 14-1/4".

Susan Cox, *Landscape House: Valley*, glass, 8" x 6" x 14".





Cox incorporated bronze casting, a process similar to glass casting, in a couple of her works on view during *Finding Home*. The artist enjoys the combination of the almost unbreakable bronze and the very fragile glass.

In her piece *Now and Then*, the bronze house represents the present, while the glass house symbolizes the past. "We have events happening to us now that are solid, and we know exactly what's happening. But when we think about things that happened in the past, there's an effervescent quality to memory. Each time we draw a memory up, it changes slightly." In *Repository* a clear cast glass structure encapsulates a bronze house, representing the safe keeping of our memories.



Susan Cox, *Repository*, cast glass, cast bronze, 5" x 9" x 2-1/2".



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*(Top to bottom), Susan Cox, Memories, cast glass cap gun and leather holster, baby shoes, and Lincoln Logs cabin.*



## Glass Houses

Hesitant to abandon architecture, Cox found in glass the most rewarding artistic success yet, allowing her to take her own ideas from inception to completion. The artist continues to improve her casting technique from a spacious and well-equipped home studio including a small 16-inch test kiln, a 28-inch octagonal kiln, and a 42-by-24-by-24-inch casting kiln. Working exclusively with Bullseye glass has added to the artist's ability to track and monitor casting successes and failures.



Cox found the community of glassworkers open and sharing. She wonders, however, if the general public is aware of what it takes to produce a piece as glass artists continue to push for acceptance in the art world at large. "I like seeing glass become something that has content, thought, and philosophy. These qualities can define glassworks as weighty pieces of art."

The current political climate and world situation provides endless inspiration for Cox's exploration of home. Her art examines how these circumstances affect refugees and immigrants, the aged being removed from their homes, young people acquiring their first homes, the homeless we pass on the street each day, and our immunity to their plight. "In our country, because it's made up of immigrants, we haven't come up with a universal identity. The house shape, however, is something everyone identifies with, which drives me to explore the psychological meaning of home." **GA**

*Susan Cox was a recent guest on Glass Art magazine's Talking Out Your Glass podcast. Subscribe on iTunes or Stitcher for this and other fascinating interviews with glass artists by visiting the "Talking Out Your Glass Podcast" link under "What's New" at [www.glassartmagazine.com](http://www.glassartmagazine.com).*

**Susan Cox Glass**  
[www.susancoxglass.com](http://www.susancoxglass.com)



(top to bottom) Susan Cox, *Now and Then*, cast glass, cast bronze, 7-1/2" x 3-1/2" x 7".  
Susan Cox, *Streetscape* (detail and complete piece), cast glass, steel, wood, 30" x 42" x 32".

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# Ending Bubble Trouble

## Avoiding Bubbles Between Layers of Fused Glass

by Paul Tarlow

*In the May/June 2017 issue of Glass Art, Paul Tarlow shared techniques for eliminating air that gets trapped between your fused glass project and the kiln shelf. In this issue, he builds on those tips to show you how to avoid air that gets trapped between layers of glass.*

Bubbles between layers of glass happen for almost all the same reasons they happen between the glass and the kiln shelf. These include side heat, texture between layers, extra weight near project edges, and large size. As with air trapped between the glass and the kiln shelf, air between layers of glass can result in air blisters and bubbles that burst through the project's surface. The result can include pinprick-size holes in your work, large craters, or an uneven surface.

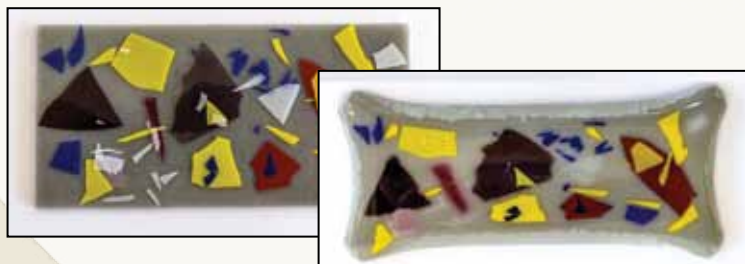
As you might expect, some of the available remedies for minimizing air trapped between glass layers are also the same as with air trapped between the glass and the kiln shelf. They include:

- minimizing side heat, including the use of baffles.
- using an extended bubble squeeze in your firing schedule.
- not firing hotter than needed.

### Avoiding Bubbles Between Layers of Glass

In addition to the solutions mentioned above, which were covered in detail in the May/June 2017 issue of *Glass Art*, there are several strategies specifically designed to eliminate air from between layers of glass.

- **Stack the smooth side to the texture side.** Many kinds of glass have different textures on the top and bottom surfaces. When this is the case, as with Bullseye glass, stack your glass texture-to-smooth to minimize trapped air.
- **Prefire layers to smooth the surface.** When fusing layers that have heavily textured surfaces, including layers with pre-fused design elements, consider firing the layers individually to smooth the texture. This can be a challenge on single layers of glass, since surface tension causes the edges to thicken, as shown in the images below.



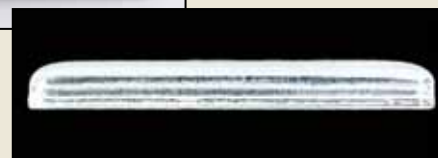
One solution is to create a larger-than-needed piece, then trim the thicker edges before firing the final project. Another solution is to use clear frit around the design elements to minimize the unevenness. When taking this second approach, use only a single layer of frit. Using too much frit can trap additional air and can create opacity that obscures the base layer. Washing the frit can also eliminate trace amounts of glass powder that sometimes causes hazing.

### Powder Sandwich

Visible air bubbles can sometimes be changed into microscopic bubbles that, while still present, are too small to see. This is done by placing a very thin layer of glass powder between the layers of glass. For this solution, you will need compatible glass powder and a powder sifter. Also remember to always use a respirator mask anytime you are working with glass frits and powders.

For projects with Bullseye compatible glass, use 1401-0008 Crystal Clear Powder. For System 96 projects, use F10196 water clear powder. Sift a layer of powder onto the top surface of the bottom layer of glass. The powder should be applied heavily enough to cover the glass, but not so heavy that it stacks on itself.

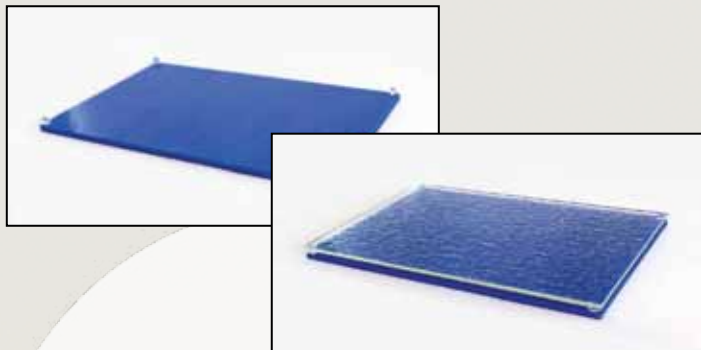
Using the correct amount of powder for this step is critical and may take some practice to achieve. If the powder is applied too thinly it will not eliminate bubbles. If it is applied too thickly, it will create a visible haze between the layers of sheet glass. The one downside to this technique is that the powder does create a line that is visible when looking at the glass on edge.





## Chads

Placing small pieces of glass called “chads” along the edge of the bottom layer of glass so that they raise the top layer slightly can also be an effective strategy for reducing trapped air. Here is an example, on the left, of chads placed on a base layer of glass and the same project, on the right, with the top layer in place on top of the chads.



When this glass is fired, the center of the top layer will sag and come in contact with the bottom layer. As the glass continues to soften, the area where the two layers touch will spread toward the edge, pushing the air outward as it does. Eventually, both layers will fully fuse and the chads will disappear as long as they are small enough and the appropriate color.



It is important that the chads be placed at the edge of the bottom layer. If the chads are not at the edge, they are likely to create bubbles of their own when the glass slumps around all sides of the chad.



For the best results—and to avoid the frustration of moving chads—glue the chads to the bottom layer and allow the glue to set before putting the project in the kiln with the top layer in place. Very short pieces of stringer also make excellent chads with the least risk of being visible after firing.



## Additional Solutions

- **Fire the heavy layer on top.** That way, air is forced from between layers by the weight of the glass. Whenever possible, fire the project with the heaviest (thickest) layer on top.
- **Perform a bubble squeeze.** As discussed in the May/June 2017 article, by spending extra time in the slumping range, the weight of the glass will help the glass settle against the shelf. It also will allow the layers to settle together, squeezing out any air that might otherwise be trapped.

The same is true of air trapped between layers of glass. A common approach to a bubble squeeze is to hold at 1225°F (663°C) for 30 minutes. An extreme bubble squeeze can last two hours or more. This remains one of the most effective methods for eliminating trapped air.

- **Combine the various techniques for optimal results.** You do not have to choose just one of the above methods for avoiding bubbles trapped between layers. The best solution is to combine all the above techniques as appropriate. Using a long bubble squeeze, for example, on a project being fired with the heavy layer on top and chads around the edge will usually produce excellent, nearly bubble-free results. **GA**

*This article was adapted from information that originally appeared in Paul Tarlow's e-book, Ending Fused Glass Disasters, available at [fusedglassbooks.com](http://fusedglassbooks.com).*



*Paul Tarlow, Fused Glass Draping from Tarlow's newest e-book, Creative Fused Glass Draping.*

*Paul Tarlow and his wife Karen run Helios Fused Glass Studio in Austin, Texas. Helios was born out of a passion for glass as an artist's medium and a desire to share enthusiasm and knowledge with others in the hope that it will inspire them to create. Widely acknowledged as one of the premier teaching studios, Helios has an extensive program of workshops taught by Tarlow and many of the most credible kiln forming glass artists and instructors anywhere. It is also a source for materials and supplies as well as a social hub for like-minded glass artists.*

*Tarlow, who is widely acknowledged as an authority on kiln formed glass, has written a series of e-books on a wide range of topics related to kiln formed glass available at [fusedglassbooks.com](http://fusedglassbooks.com), and is known to be a generous instructor. He runs both [fusedglass.org](http://fusedglass.org) and the FusedGlassOrg Facebook group at [www.facebook.com/groups/fusedglass](http://www.facebook.com/groups/fusedglass). Information about his teaching studio can be found at [heliosglass.com](http://heliosglass.com).*

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# Your Online Identity

## Creating an Attractive and User-Friendly Website

by Mark Veit

I have talked about the importance of maximizing your website many times in past *Glass Art* issues. Previously I have focused on the nuts and bolts of the site—things such as completely filling out the “About Us” and “Contact Us” pages, metatags, and more. Those things are very important for search engine optimization and helping your website climb the search engine ladder.

This month, I want to write more about the look and organization of your website. Whether you have a custom website or sell on a third-party site, the look and organization of your home page is your online identity. It is the first thing a potential buyer sees, so simply the look of your page could be the difference between the customer clicking deeper into your site or moving on to a competitor.

### The Importance of Being Organized

Most successful page setups seem to share the common traits of being organized and simple to navigate. While this sounds obvious, in an industry such as ours where almost everything is handmade and one of a kind, organization can get thrown out the window very quickly. As a comparison, think about a big e-commerce site, for example. The company may sell everything from televisions and computers to clothes and have tens of thousands of product numbers, but it's easy for them to categorize their merchandise and keep their website organized, since they are replenishing repeat inventory. In the case of a glass artist who hand-makes one-of-a-kind glass pieces, each piece requires its own product number, description, picture, and more.



*Glass Jewelry by Tanya Veit*



A common thing to let slip as a busy small business owner is the organization of your website. We have been guilty of this as well. It's an ongoing project, but one that is necessary in order to maintain an organized and user-friendly website. When we started AAE Glass, we went years before reorganizing our e-commerce website. It was something we constantly overlooked and put on the back burner. When we finally got honest with ourselves, we admitted that we had a website problem, took action, and cleaned it up.

The first thing we did was sketch a category tree on paper, including each category, where it led, and what product it contained. It was shocking to see how many dead ends we ran into. There were active categories from years prior that didn't contain any inventory at all and other categories that only contained a few pieces. Some categories even contained pieces that we didn't make anymore. We were lucky no one purchased those pieces.

### Taking Stock

If you haven't taken stock of your website in a while—or ever—it's worth it to do so. It will help you streamline your business and free up valuable time to create. We also noticed an instant uptick in sales once we began promoting our new and improved (aka organized) website.

In speaking with Tanya Veit, another effect this cleaning out process had for her was that it brought back a flood of memories and techniques that she hadn't executed or even thought about in years. She had experimented with so many new techniques since then, she was able to apply the new techniques she had learned over the years to some of her original pieces. This spawned several new designs for Tanya and became a new line of inventory to offer current customers. Our business really picked up momentum due to these changes, and we were able to handle the increase in order volume because we were organized and streamlined.



## Invaluable Customer Feedback

One way to increase your credibility among potential buyers is to allow customers to leave comments. Most custom and third-party websites allow this. Some allow you to approve the comments before they are published, while others don't.

Allowing customers to leave feedback for your products builds credibility between you and the potential buyer. It also shows that you have met expectations and other buyers have been pleased in the past. In the case that you do happen to receive a negative review, take the opportunity to respond in a professional way, and if you made a mistake, admit it and fix it. Potential customers will appreciate a company that admits a mistake and goes above and beyond to correct it. The secret to customer service is turning a negative into a positive.

We have all made mistakes, but often what sets you apart from your competition is how you handle them. Did you make it right in the end? That has always been first and foremost for us at AAE Glass, and we have built a loyal clientele because of it. Don't be afraid to contact your past customers and ask them to leave a review on your site. You might be surprised at how many people will take the time to do so.

## Website TLC

I understand that the task of making sure your website is attractive, well-organized, and always up-to-date may seem menial and time consuming, and it is. I wouldn't be sharing our experiences with you, however, if I didn't feel it was worth the effort and would help you grow your business.

As you seek to make your website an important asset for finding new customers, pretend that you're visiting it for the very first time the way a new potential customer would experience it. Put yourself in their shoes and search for items you offer on Google. Then when you get to your site, browse around and see if you can find any holes there. If everything looks good to you, great, but chances are you will find some areas that need attention. If you take the time to give your website a little TLC, I can promise that it will pay you back with more sales.

GA

Mark Veit currently owns and operates [www.aaeglass.com](http://www.aaeglass.com) along with partners Tanya and John Veit. They create enamel waterslide decals for glass artists and sell them on their website along with unique silver settings for glass. They also wholesale their fused glass jewelry to galleries and boutiques.

Constantly attending workshops, seminars, and classes with master artisans helps Veit and his partners evolve their work and makes it possible for them to offer glass and jewelry artists a unique medium to maximize their sales. Visit [www.aaeglass.com](http://www.aaeglass.com) or e-mail [info@aaeglass.com](mailto:info@aaeglass.com) for more information.



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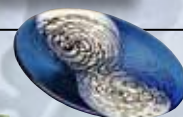
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# The CGS Glass Prize and Graduate Review 2017

by Pam Reekie

The Contemporary Glass Society (CGS) is delighted to announce the winners of the CGS 2017 Glass Prize and the graduates who will be included in the graduate Review 2017. The first-place glass prize was awarded to Phöbe Tan, University College Falmouth. Second place was awarded to Ian Palfrey, Plymouth College of Art, and third-place went to Jahday Ford, Manchester School of Art. Highly Commended designations went to Mim Brigham, Plymouth College of Art; Claire Crawford, University for the Creative Arts, Farnham; Neil Edwards, University of Sunderland; and Angie Packer, De Montfort University.

Other graduates who will be included in the 2017 Review are Katherine Austin, De Montfort University; Sorcha Deady-Alston, North Wales School of Art & Design, Glyndwr University; Hannah Gibson, University for the Creative Arts, Farnham; Anna Gray, Royal College of Art; Tony McCabe, University of Wolverhampton; Monika Müller, Royal College of Art; Marged Owain, Manchester School of Art; Anna Selway, University of Sunderland; Daniel Street, Hereford College of Arts; Martha Tanner, Sussex Coast College Hastings, University of Brighton; and Gemma Willetts, University of Wolverhampton.

## A High Number and Quality of Entries

Nearly 50 graduates from 16 colleges entered the CGS Glass Prize & Review 2017. The work was of very high standard and showed the breadth of techniques and skills needed for working in the fascinating medium of glass.

The selection panel consisted of Cathryn Shilling, glass artist and curator; Alan J. Poole, glass collector and promoter; Michael Barnes, glass collector; and Sarah L. Brown, glass artist. They had the difficult task of selecting the winning and highly commended entries, as well as those additional artists who would be included in the Graduate Review 2017.

## Showcasing Upcoming Artists

The *CGS Graduate Review* is a 16-page publication that will be circulated to all of the CGS Members and Associates as well as through *Neues Glas* and *New Glass Art & Architecture* magazine. It will also be promoted by *craft & design* and the *CRAFTS* social media sites.



*Phöbe Tan, 1 Wunderkamme, first place winner, 60 cm x 40 cm, May 2017. Photo by the artist.*





Ian Palfrey, Cage Cup,  
17.6 cm x 10.4 cm, 2017.  
Photo by Parr Photographic.

Jahday Ford, Breathe Vase Luster,  
290 mm high, March 2017.  
Photo by the artist.



This publication will give CGS the opportunity to showcase work from the talented prize winners as well as work from other emerging British graduates. It is vital to promote all glass education courses, since more and more creative courses are threatened with closure.

CGS is extremely grateful to all of its sponsors who provided financial support and prizes for the Glass Prize and Glass Review. Without them, this would not have been possible. Our sincere thanks go to Professor Michael Barnes MD FRCP; The Worshipful Company of Glass Sellers of London Charity Fund; Warm Glass; Creative Glass UK; *craft & design* magazine; Alan J. Poole; and *CRAFTS* magazine. **GA**

Visit [www.cgs.org.uk](http://www.cgs.org.uk) for more information on the Contemporary Glass Society events and on becoming a member.

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# The Fusion of Elements

## Exploring the World of Fused Glass

by Denny Berkery

Last year I received a call from an art teacher at Waunakee Intermediate School, Waunakee, Wisconsin. She asked me if I would be interested in being an artist in residence at her school. The teacher indicated that she wanted to involve her students in a fused glass project for a new intermediate school that was in the process of being built. Even without having many of the details, I quickly said yes! Little did I realize what I had agreed to in that moment.

### Sharing a New Vision

The art teacher, Melanie Burton, began to explain her vision. The conceptual idea was called “A Fusion of Elements,” and was intended to represent the four classic elements—Sun, Water, Earth, and Wind. It was decided that these elements would be represented in a series of 4-inch-square fused tiles. Each element would be comprised of 180 tiles.

As I began to process the number of tiles—720 in all—the scope of this project began to unfold. These tiles would be created by the students and staff of the school. At first, Burton requested that I give a presentation to the entire student body of 600 students, then train a group of staff members at the school on how to create small fused glass tiles. I would be present at the school while the students created their artwork.

This process involved some creative management of its own. Materials would have to be brought into the school, then the projects would be created and delivered back to my studio at The Vinery to be fired in our large kilns. We would need to keep track of each tile so that the student artist who fashioned it could be acknowledged when the project was completed.



*A Water tile getting the finishing touches.*

### A Change in Venue

Early on our strategy changed, and it was decided that we would bus the kids to my studio. I am fortunate to have a large teaching area there that could accommodate busloads of kids. Having all of the required materials at our fingertips and being able to easily keep track of each tile and who created it seemed to offset any transportation issues.

Every day for two weeks I had a busload of kids in the morning and another in the afternoon. We also had plenty of parent helpers and staff. The kids were excited, and it was a treat to expose them to a new world of glass fusing. The students were presented with a short PowerPoint presentation explaining a little bit about glass fusing. After that we split the group in two.

The first group began work on their tiles, and the second group received a demo on blown ornaments and a tour of the studio. The kids were great, asked a lot of questions, and thoroughly enjoyed watching glass melt in front of a torch. Halfway through our allotted time, the groups switched. At the end of two weeks, all the tiles were completed.



*(Left) A Sun tile ready to fuse.  
(Right) Denny Berkery demonstrating  
blown ornament techniques.  
Photo by Mel Burton.*





*Final installation of A Fusion of Elements in the school lobby.*



*Water tile with vitrograph.*

## Final Installation

It was decided that the best way to display the tiles was to encase them in a resin structure. Four panels representing the four elements were made and installed in the main lobby of the school. They were backlit, and a white Plexiglas diffuser panel was placed between the lights and each of the four panels. The finishing touch was a legend of the students and their corresponding tiles.

The process of matching each tile with the student who created it was a challenge, but watching the students discover which tile they created made it all worth it. Burton amazed me in her dedication to this project and to her students. I was very fortunate to be involved in this project. The students were a joy to work with, and I am very proud of their accomplishments.

GA

*Denny Berkery is owner of The Vinery, a retail stained glass studio in Madison, Wisconsin. A glass artist and teacher, he has performed commission work and glass repair for over 30 years and has also taught thousands of students the skills of working with stained glass. As a self-taught artist, he has a unique way of presenting the techniques that simplify the process and allow his students to meet with success. In addition to teaching, he has published four stained glass pattern books and has also written articles for Glass Patterns Quarterly and Stained Glass News.*

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## The AGG James C. Whitney Memorial Scholarship Helping Stained Glass Artists Grow

by Tony Glander, President AGG

A few years back, the county I live in put out a call to artists for what was titled an “artist improvement grant.” I had to laugh at the title, because my initial thought was, “If there were ever an artist who needed improving, it would have to be me!” The county agreed, so I was awarded money to take a class and be able to collaborate with another artist, two things I couldn’t have afforded otherwise at the time.

That opportunity really helped to move my abilities forward and did something else as well. Not only do I continue to use what I learned, but I also even teach part of it to others now. I still collaborate with the other artist, creating more incredible things each time. Education is sneaky like that. It will usually give you the information you were seeking, but it will also take you places you didn’t anticipate.

### Passing on the Knowledge of Glass Art

The American Glass Guild (AGG) wanted to help others continue their education in stained glass, so they created the James C. Whitney Memorial Scholarship. The scholarship fund has awarded over 100 scholarships since 2007. Scholarship Chair Rick Prigg, said: “Ours is an esoteric trade, and while once the industry itself trained thousands of proud artisans, most of the apprenticeship programs of the 20th century are long gone. It is up to organizations like The American Glass Guild to make sure the knowledge of our art is properly passed on to the next generation.”

Scholarships have been used for a variety of educational opportunities. “These scholarships have provided hands-on training by highly accomplished artists in the study of glass painting, glazing, acid etching, museum grade glass adhesives, and a host of other stained glass centric skills,” shared Prigg. “We also award scholarships to attend the AGG annual conference, a fantastic way to meet and learn from the existing stained glass community!”

AGG member Hallie Monroe commented: “Over the years, I have been fortunate to have been awarded four AGG James Whitney Scholarships. I have greatly appreciated the educational opportunities they have helped me afford, from glass painting classes with masters like Dick Millard, Nicholas Perrendo, and Ken Leap to the Transatlantic Symposium in Stained Glass in Germany.” Monroe has reciprocated with donations of painted stained glass panels to the fundraising auction.



*David Fode panel in AGG’s annual auction. Photo by Tony Glander.*

### Thankful Recipients

Magdalena Marciniak came from Australia on an AGG scholarship to Bryn Athyn to take Steve Hartley’s class on the repair and conservation of historic stained glass. They spent a week practicing conservation techniques, including restoration painting, edge bonding, and cleaning techniques.

Mark Bleakley used a scholarship to take a painting class with Kathy Jordan. “Stained glass has a community and a common base of experience, and in its many facets it also provides a great opportunity for constant growth and development in excellence. I’m grateful for the scholarship to attend this class and have come to believe it’s an important part of working in the field to take opportunities like this to learn from excellent teachers such as Jordan and to share with and in the knowledge and experience of others.”

Seth Mathurin also used a scholarship to attend a painting class lead by Jordan. “The residents of the program came with varying degrees of experience, but all were challenged and found accomplishment in the works that they created. I came with an academic knowledge of glass painting and left with the core skills that will allow me to further develop my art. This class was an important point in my art career, and I am so happy to have been able to spend the week learning from Jordan. Her expertise, passion, and kindness were truly inspirational.”





*Seth Mathurin developing a drawing during a painting class. Photo by Kathy Jordan.*



*Kris Tiffany's panel in AGG's 2017 auction. Photo by Tony Glander.*

## Educating the Next Generation of Stained Glass Artists

Jordan is the current auction chair for the AGG and has fulfilled the roll many times over the years, helping raise thousands of dollars. "Supporting education was at the core of our scholarship's namesake, James Whitney. Since its inception, members have found meaningful ways to contribute by volunteering, donating, or sponsoring the collective efforts of our guild. Witnessing the fruition of our scholarships brings the story full circle and motivates me to stay connected in such a worthy endeavor."

Whitney was an incredible person, husband, father, friend, and a very accomplished stained glass artist. Sadly, he passed away from cancer in 2005, but in recognition of his zest for education and his pursuit of excellence in education, the scholarship fund was created to help others achieve their educational goals. He was a strong supporter of both the AGG and the SGAA.

I think Whitney would be happy to know that it takes a lot of hard work and generosity to raise funds for the scholarships, but people also get a lot of enjoyment from helping in this effort. The annual auction gives people and businesses a chance to show their support by their donations as well as by supporting the bidding. The sneaky thing is the fun and camaraderie that take place at these auctions. People guard their bids at the silent auction while the timer counts down, and they never know when someone will outbid them on that incredible stained glass panel during the live auction.

## Bringing Members Together

As Prigg shared, "The AGG is committed to educating the next generation. We encourage those seeking to further their education in stained glass to go to the organization's website and apply today!" The deadline for applications is usually early February with a notification in March. Recipients receive full or partial scholarships for various educational opportunities, such as the AGG conference and workshops, or other ongoing educational efforts.

The creation of this scholarship has many potential benefits. The most obvious is that people can apply to receive money to help them learn a new technique or to make it possible for them to attend the AGG annual conference. Either will help their careers as stained glass artists. It has also created a resource for teachers to recommend to students to acquire aid, and it helps fill up classes as well. Most importantly, it has helped bring members of the AGG together in the spirit of helping others.

**GA**

*Visit [www.americanglassguild.org](http://www.americanglassguild.org) to learn more about the American Glass Guild and its upcoming events.*

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# The Stained Glass School Reaching Out to Include Regional Classes

The Stained Glass Association of America (SGAA) continually seeks to maintain the highest possible standards and provide facilities offering extensive training in the stained glass arts. To help in achieving that goal, with slow, careful steps, SGAA's Stained Glass School (SGS) began reinstating hands-on instruction. The first step was to include classes before or after the organization's summer conferences. With the purchase of property in Raytown, Missouri, the school was able to establish a central base with a regular pattern of scheduled workshops.

## Growing Educational Opportunities

Starting on the East Coast, SGS has now worked with carefully chosen studios to begin classes and workshops on a regional basis. Studios in the Northeast and the Midwest are being added, and a studio in Texas will be included in the lineup of classes for October 2017. This gradual enlargement of the program will allow for solid growth and will ensure that top instructors can be made available to everyone.

In addition to the students from the United States who have attended SGS workshops, class rosters have also included students from Canada, Mexico, Columbia, Cuba, England, Japan, and Korea. The SGS and SGAA have helped to sponsor many foreign students from countries where stained glass education is limited. Information on several scholarships offered by The Stained Glass School can be found on the SGAA website.

## Upcoming Classes

The schedule of upcoming classes is excellent, and SGAA invites you to take advantage of the opportunity to hone your skills and venture into new areas of the glass arts. Please contact the individual studios for details of the upcoming classes and workshops. Sister Ann Therese Kelly, director of the Stained Glass School, loves the opportunity to discuss the future of stained glass, especially preserving the art form through young artists. She also invites those interested in conducting regional classes or teaching at the Raytown facility to e-mail her at [kellyat@felician.edu](mailto:kellyat@felician.edu). She welcomes your questions and comments.

GA

Visit [www.stainedglass.org](http://www.stainedglass.org) for more information on the Stained Glass School, the Stained Glass Association of America, and the organization's upcoming events.



(Top to bottom) The Green Man, work and photo by Hallie Monroe.  
Glass Painting: An In-Depth Exploration of Tools and Techniques class.  
Photo by Kathy Jordan.



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kellyat@felician.edu

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aog1987@aol.com

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Whitworth Stained Glass  
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jack@whitworthstainedglass.com

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## Milon Townsend

Milon Townsend's goal for nearly 40 years has been to create glass art with form, balance, and harmony. His early days of selling flameworked glass at fairs and shows culminated in his operating two retail/wholesale locations in Manhattan with a full-time crew of 26 people.

The world of dance in New York City found its way into Townsend's sculptural aesthetic, as seen in his groundbreaking *Body Language* series and his kiln cast human forms. A tireless educator, he has shared his techniques in numerous books, hundreds of articles, and a series of videos.

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## What's New



**Wissmach Glass Company** presents **Options**, a wide variety of possibilities for glass artists working in textured glass that can

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**Covington Engineering** presents the company's "Rock" It Science lapidary and glass blog for the casual and not so casual artist. Current postings for *The Art and Science of Rocks* include "A Backpacking Rock Hound's Journey," with plenty of photos of interesting rock finds, "Tumbling," with pro tips for tumbling and polishing rocks, and "How to Find Rocks," with tips for becoming a successful rock hound. 877-793-6636 909-793-7641 www.covington-engineering.com/rock-it-science

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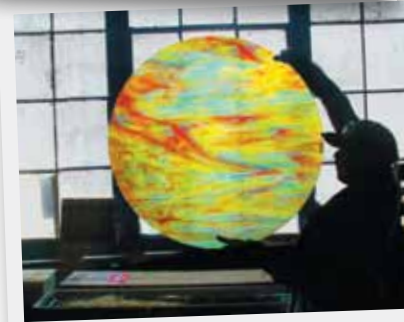
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Wissmach Glass in West Virginia has been producing art glass for 113 years. On their production floor they use **Toyo Supercutters**, some with **Tap-Wheel** technology.

Amazingly, one employee estimates scoring 37,500 circles over 30 months before replacing the cutting wheel.

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For more information visit: [glassaccessories.com](http://glassaccessories.com) and [wissmachglass.com](http://wissmachglass.com)

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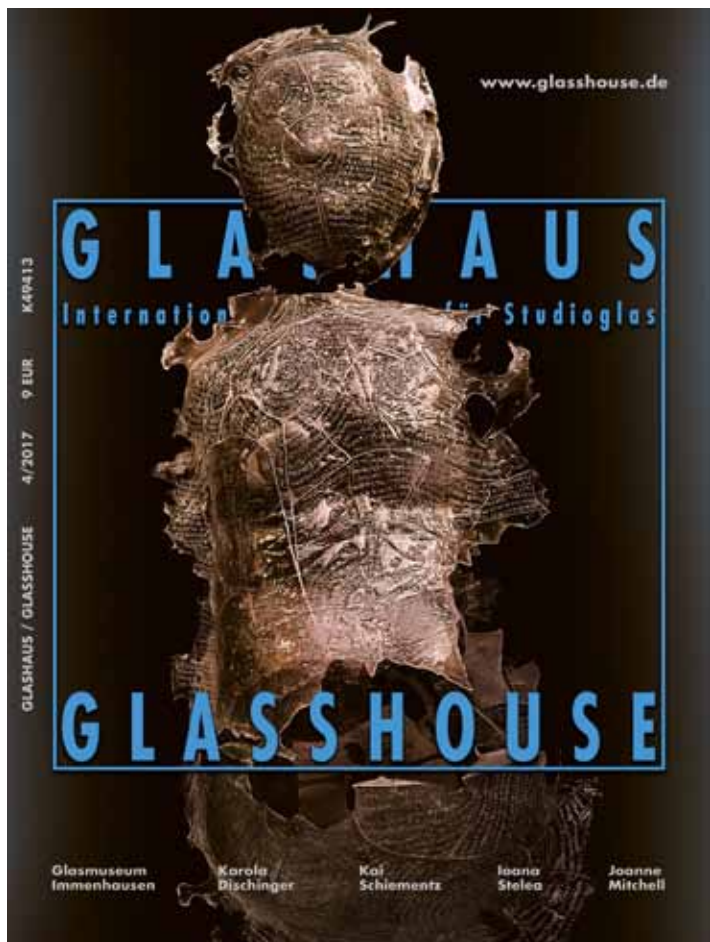


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<b>Covington Engineering Corp.</b> (877) 793-6636 www.Covington-Engineering.com	19
<b>Cress Manufacturing</b> (800) 423-4584 www.CressKilns.com	31
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<b>Gemini Saw Company, Inc.</b> (310) 891-0288 www.GeminiSaw.com	5
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<b>Glass Art Society</b> (206) 382-1305 www.GlassArt.org	33
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<b>His Glassworks, Inc.</b> (828) 254-2559 www.HisGlassworks.com	31
<b>Hollander Glass</b> (800) 421-0449 www.HollanderGlass.com	38 / 39
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<b>Mobile Glassblowing</b> (229) 352-9988 www.MobileGlassblowingStudios.com	23
<b>Nortel Manufacturing</b> (416) 438-3325 www.NortelMfg.com	27
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<b>Paragon Industries</b> (800) 876-4328 www.ParagonWeb.com	63
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<b>Ransom &amp; Randolph</b> (800) 253-4502 www.Glass-Cast.com	61
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<b>SGAA News</b> (800) 438-9581 www.stainedglass.org	26
<b>Talking Out Your Glass Podcast™</b> (502) 222-5631 www.GlassArtMagazine.com	59
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#### **CS-5630 Dimensions**

- Exterior with top closed: 70 ½" W x 53" D x 52" H
- Exterior with top raised: 70 ½" W x 63" D x 76" H
- Interior: 56" x 30" x 17" (15 ½" deep when measuring from quartz tube surface)
- Flat load floor, 30" from ground level

# Introducing the Paragon CS-5630 clamshell kiln with quartz tubes

#### **Deluxe quartz tubes**

Imagine the huge glass pieces you could make inside the new Paragon CS-5630. Enjoy complete access to your artwork from the sides and front. Add delicate stringers or frit without having to move the shelf into the kiln later.

The roof elements are protected in 10 quartz tubes for a cleaner kiln interior. There is less dust in the kiln, because there are no element grooves in the top.

#### **Heat from the top, walls, and floor**

The CS-5630 is 56" x 30" x 17" high. With elements in the floor, walls, and roof, you will enjoy unsurpassed heat distribution. The digital controller uses Power Ratio technology to vary the heat output between the top and bottom elements.

#### **Extra insulation and woven gasket**

Lift the kiln top section with handles in the front and sides and with assistance from gas springs. The roof is 3" thick ceramic fiber, and the walls are 3" firebrick backed by 1" of ceramic fiber board (4" of total wall thickness). The extra insulation helps to maintain even temperatures. A woven gasket between the kiln top and floor helps to hold in the heat. The floor

surface is a convenient 30" high from ground level. The 4 ½" thick firebrick floor includes two expansion joints.

Watch the glass through 2" x 3" peep-holes mounted in the left and right sides. The kiln includes locking casters.

#### **Motorized vent for firing molds**

If you fire molds, you will welcome the motorized Orton Vent Master, which is mounted in the back wall of the kiln. The vent, mounted on rubber isolators to prevent vibration, removes moisture from the kiln to reduce rust. The vent is standard on the CS-5630 and plugs into an auxiliary output in the back of the kiln. This allows you to turn on the vent through the digital controller.

#### **Low maintenance**

Deluxe, long-lasting mercury relays are standard. Gain convenient access to the electrical components by removing a single panel. The kiln includes access panels for replacing quartz tubes.

#### **Rugged**

The CS-5630 is the very picture of ruggedness. A ledge in front of the kiln protects the brick floor from damage caused by leaning into the kiln. The digital controller is mounted away from the

heat for long life. The kiln base is welded from 2" x 2" steel tubing; the upper kiln frame is welded from 1" x 1" steel tubing.

#### **Optional touch screen controller**

Order your CS-5630 with the optional Sentinel Smart Touch controller. The Sentinel can check the voltage and amperage and can be programmed with easy-to-follow screen descriptions.



For more details, please visit our website or call 800-876-4328. We look forward to hearing from you.

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*For this piece d'art Petra used several techniques. Strips on edge are fused together, cut apart, fused together again and then draped and stretched in a 3rd firing to create this interesting shape. Please visit our website to see more images and instructions. [www.wissmachglass.com](http://www.wissmachglass.com)*

