

GLASS ART®

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

March/April 2022



\$9.00 U.S. \$10.00 Canada
Volume 37 Number 2



www.GlassArtMagazine.com

**Josh
Simpson**

KilnMaster

Touchscreen



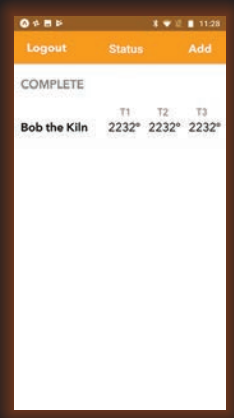
SKUTT

Programming just got really cool!



- Built-in Wifi and Free App
- Remote Monitoring
- Navigates like your Smartphone
- Hinged Controller for Perfect Angle
- Built-in Library of Programs

- Write and Name Your Own Programs
- Help Screens for Every Feature
- Graphing
- Logging
- Improved Diagnostics



...and so much more

skutt.com/kmt

Glass Art®

Volume 37, Number 2

Publisher ~ Maureen James

Copy Editor ~ Darlene Welch

Accounting ~ Rhonda Sewell

Circulation Manager ~ Kathy Gentry

Advertising ~ Maureen James

Graphic Artists ~ Dave Burnett
Mark Waterbury

Contributing Artists and Writers

Jean Alexander, Dana S. Baldwin
Dr. Julie Anne Denton, Bob Leatherbarrow
Pam Reekie, Joe Samuelson III
Vicki Schneider, Karyn Sweezy
Milon Townsend, Darlene Welch

Glass Art®

ISSN 1068-2147 is published bimonthly
by Glass Patterns Quarterly, Inc.

8300 Hidden Valley Road,
P.O. Box 69, Westport, KY 40077

POSTMASTER: Send address
changes to Glass Art®,
8300 Hidden Valley Road,
P.O. Box 69, Westport, KY 40077

Telephone: 502-222-5631
502-222-4527

Website: www.GlassArtMagazine.com

E-mail: info@GlassArtMagazine.com

Subscriptions: United States, one year
print and digital combo subscription \$52;
one year digital subscription \$52;

Kentucky residents
add 6% state sales tax.

Foreign (U.S. Funds): one year print
and digital combo subscription \$67;

one year print and digital
airmail combo subscription \$136.
Available Back Issue Print Copies
\$9 plus shipping.

Single Back Issue Digital Copy \$9.

All subscriptions must be paid in
U.S. dollars with an international
money order or with a check
drawn on a U.S. bank. Credit card,
debit card, or PayPal also accepted.

Periodicals Postage Paid
at Westport, KY 40077

and additional mailing offices.

©2022

Glass Patterns Quarterly, Inc.

All items submitted to Glass Art®
become the sole property of Glass Art®
and cannot be reproduced without the
written consent of the publisher.

Advertisers and/or agencies assume all
liabilities for printed advertisements in

Glass Art®. Opinions expressed in
Glass Art® may not necessarily reflect
the opinion of the magazine,
its management, or its advertisers.

GLASS ART®

March/April 2022

Volume 37, Number 2

Pioneers in Glass

4 Josh Simpson

Blown Glass Artist Extraordinaire
by Joe Samuelson III

Artist to Artist

14 Intellectual Property

To Share or Not To Share?
by Vicki Schneider

Winning Glass

22 Coatings By Sandberg

2021 Dichroic By Design Contest
by Dana S. Baldwin

International Glass

Atelier d'Art du Verre and the

26 Luxembourg International Festival of Glass

Robert Emeringer and Zaiga Baiza
Fulfilling an Artistic Vision
by Dr. Julie Anne Denton

AGG News

32 The AGG Summer 2022 Conference

Celebrating at The Corning Museum of Glass
by Jean Alexander

ISGB News

34 The 2022 ISGB Gathering

Thirty Years and Still Thriving
by Karyn Sweezy

CGS News

The CGS and Makers Guild

36 in Wales Exhibition

Contemporary Glass at Its Finest
by Pam Reekie

Skills and Techniques

38 My Glass Toolbox

by Bob Leatherbarrow

Personal Development

42 Creativity—New Techniques and Equipment

Filigrana, Clear Plate, and the Diamond Band Saw
by Milon Townsend

46 Advertisers' Index

Editorial Calendar / Advertising Deadlines

May/June 2022

Editorial Due	February 20, 2022
Ad Closing	March 20, 2022
Ad Materials	March 30, 2022
Issue Mails	April 19, 2022

July/August 2022

Editorial Due	April 20, 2022
Ad Closing	May 20, 2022
Ad Materials	May 30, 2022
Issue Mails	June 24, 2022



On the cover
1993 Megaworld,
by Josh Simpson
Photo by the artist

Above:
Fishvase,
by David Leppla
Photo by the artist



Josh Simpson

Blown Glass Artist Extraordinaire

by Joe Samuelson III

Have you ever had a chat with a five-year-old who has fifty years of experience creating iconic glass imagery? Well, with five decades of knowledge, allegories, and invention behind him, Josh Simpson still manages to retain that pure joy and excitement of a little boy experimenting with all his favorite toys. It's like when you bring up the imagery of deep space . . . or the bluest blues of them all . . . or the middle schoolers who spurred a universe of new worlds. Josh relives each moment with the same wonder and awe as he did when it all happened a lifetime ago.

Not That Hard If You Love It

Eternally grateful for each experience along his path, Simpson has the ability to pull the best from what another might call a dire situation. For example, during the winter of 1971, he found himself in Vermont living out of the bed of his Datsun pickup and sleeping on the floor of the impromptu glass studio at Goddard College. Josh can't help but remember how lucky he felt. "I woke up next to the scrap bucket full of colored shards from the blowpipe. I can remember the sunlight hitting them and thinking that even the garbage was being thrown out and that glass was such an amazing material"



(Left) Josh Simpson, Renwick Gallery Megaplanet, hot-worked solid glass, 12-1/2" diameter, 2005. Photo by the artist.

(Top to Bottom) Josh Simpson, Corning Megaplanet at The Corning Museum of Glass beside a Tiffany window, hot-worked solid glass, 13-1/2" diameter, 2006. Photo by Sue Reed.

Josh Simpson's Vermont studio, 1972. Photo by the artist.
The earliest colorless glass goblets by Josh Simpson.

Thankful for the opportunity to learn his newfound medium, Simpson considered it absolutely necessary to take a leave of absence from college only one class shy of graduation and move into a tipi on the 50 acres of land he had rented for a hefty \$22.50 a month. He paid very little mind to the austerity of harvesting river ice so he could boil the chickpeas he got by the sackload in trade for a few wonky goblets or living on chunks of cheap cheese scraps from a local creamery paired with cases of four-cent cans of tomato soup.

"I constructed that tipi, and together with a fellow Goddard student and two friends from Hamilton College, we built a tiny little studio that was 12 feet by 12 feet by 12 feet and started to blow glass. I wasn't thinking of it as being deprived. No matter how challenging things were, I felt like I was in heaven. I never once felt bad that I had to walk to a stream with an ax to cut out a block of ice for water. It never occurred to me that this was tough. I was blowing glass, so it was just simply, absolutely, fun. Of course, at first I was a terrible glassblower. I couldn't really do anything, but in my own delusional mind I thought, 'This is fantastic. I'm doing great.'"



Perfecting the Glass Gambit

Josh fondly remembers the earliest days of them figuring it all out on their own and doing their best to sell whatever they made, because that's how you got to make more. "At the time I thought the most impossibly difficult thing to make would be a wine goblet. It just was the most perfect shape. I'd never seen anybody make one so I didn't know how it was done, but that's what I set my sights on doing. I was like the Bobby Fischer of goblet making, blowing glass from four in the morning till the afternoon, making goblets over and over again. I'd make a set of wine goblets that were a set only because they were the same color, but they'd have wildly different heights and shapes."

Josh Simpson, three New Mexico Goblets, blown glass, approximately 8" to 9" tall, 1987. Photo by Tommy Olaf Elder.



Fifty years later, while finally attacking the hoard of his life's history in the barn on his property, Josh unearthed a memory from some of those goblet-grinding days. On a shelf left to gather dust, an old crate contained the glass that is in part responsible for the notoriety Josh garnered in his early years. "I was living in my tipi, blowing glass, selling goblets when the social secretary to First Lady Rosalynn Carter contacted me. They wanted to use my wine goblets at a White House luncheon during the Carter administration, so I sent out a set of goblets and water tumblers. They came back in this gorgeous handmade wooden crate from the Smithsonian, which I had never opened until this past summer."

With a burst of confidence and his name becoming ubiquitous with blown glass goblets, Josh managed to wrangle enough orders to convince a bank to lend him the funds to build a small studio on his grandfather's land. Soon Simpson was pumping out as many as 200 pieces a week at a mere three bucks a pop. "Fifty goblets each day was me really cranking them out, and I was working alone. Then one day I discovered that one of the stores in New York City was selling my \$3 goblets for \$36 each. At the same time, I decided that I was getting tired of making goblets and was going to try to make fewer of them but charge more.

"I first went to \$6, then \$12, and they only seemed to sell better. Then I thought, 'I've had it. I don't want to do this anymore. I'm going to charge \$25 apiece.' That's when orders literally quintupled. At \$25 I was actually able to save money, and by 1976 I was able to purchase the old dairy farm where I live now in western Massachusetts."



Josh Simpson pulling cane, 2019. Photo by Sue Reed.

NEW!

Automatic precision straight cuts!

TAURUS RING SAW 3

SEMI-AUTOMATIC FLOATING TRAY

Simply pull back the tray, place the item to be cut between the magnetic angles, start the saw, and it will cut perfectly without operator attention.

The tray fits all Taurus 3 Ring Saws simply and easily without modification.



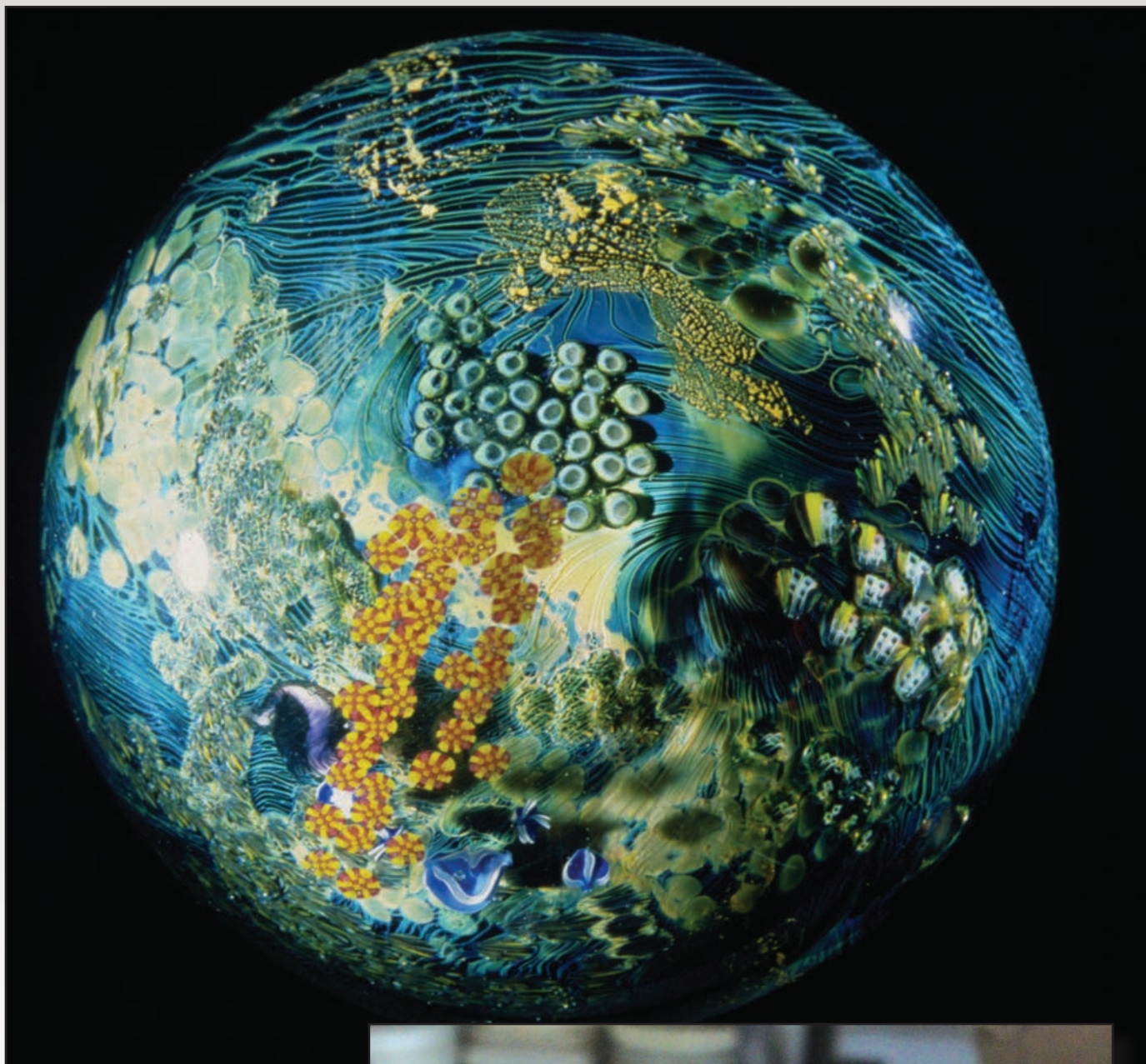
The spring return assembly has an adjustable tension knob so that both delicate thin pieces and thick hard pieces can be cut perfectly every time. Cuts are beyond compare they are made automatically with perfect pressure.



Optionally available, the Semi-Automatic Floating Tray fits all Taurus 3 Ring Saws without modification.



GEMINI SAW COMPANY, INC.
310-891-0288
www.geminisaw.com



*Josh Simpson, 1988 Megaworld,
hot-worked solid glass,
7" diameter, 1988.
Photo by Tommy Olaf Elder.*



*Josh Simpson, Small Planet, hot-worked
solid glass, 1-3/4" diameter, 2000.*

The Bluest Blues of Them All

The new Massachusetts homestead saw stables converted to a studio for Simpson's furnaces and glory holes. Checks and adjustments to his shop involved a walk from his house to the studio each evening, which offered him spectacular skies that were devoid of light pollution and rich with celestial activity. "I would see an aurora borealis in ribbons of color going across the sky. On a perfectly clear night, I could see the complete expanse of the Milky Way that made me appreciate astronomy and astrophysics. My work began to lean toward making things that looked more like Hubble telescope imagery.

Around the same time that the artist's interest grew interstellar, Simpson was offered an opportunity unique to the times. Imagine his receiving permission from the Nuclear Regulatory Commission to tour a reactor. Then imagine also being suspended above the spent nuclear fuel pool looking down on the radiant and deadly color below. You probably can't imagine doing that in 2022, but things in the late 1970s were a bit different.

In just as much awe as when in the harness that day, Josh describes the experience. "I got permission to tour nuclear power plants as an artist with a camera, something you could never do today. During one of those tours, they put me into a harness and suspended me over a 56-foot-deep pool of barium-moderated water, and at the bottom were spent fuel rod assemblies. Then they turned out the lights. In the bottom of the pit was an intense, most profound blue glow that's called Cherenkov radiation. To only say the word blue is wrong. It's every blue you can imagine. It's profound, and of course, if you get too close to it, you're toast."

Experimenting with Silver

All at once engrossed in the imagery of the cosmos and this new blue hue that he had never before imagined, the artist set out to combine these wonders the only way he knew how—in the crucible. Thanks to a grant from what is now the Massachusetts Cultural Council, Josh managed to buy several dozen pounds of silver for experiments. First, with teaspoons and pinches like your grandmother's sauce recipe, Josh was creating what has evolved into over 600 variations of silver and soda lime-infused formulas. "I've developed formulations that are pretty dependable. Many aren't, but all those glasses are in search of that perfect Cherenkov radiation blue. Often they are also reminiscent of, or evoke the power of, astronomical images."

The goal of getting silver into solution with the glass led Josh to experiment with the fine metal in all of its base forms. Silver nitrate, bromide, iodide, or chloride all offered a different avenue to pursue the artist's vision. Along the way, he discovered some beautiful colors. Josh's Corona glass, for example, is a nebulous mix of deep blues, ambers, and purples with flow and variation that will keep the eye constantly searching its depths.

Another discovery nearer to the radiation inspiration was a signature color that Simpson calls New Mexico, a vibrant series of deep blues that play with the light depending on the technique the artist applies to each piece. Even the stunning blue tones of New Mexico, however, haven't quite hit the mark for the artist. "I just thought if I could ever make that color in glass, it would be amazing. Looking at the night sky and seeing this Cherenkov radiation sent me skittering off to try melting silver in a bunch of new ways. It's become a lifelong project."

Keeping the Craft Alive

It's been four and a half decades since Josh was able to purchase his Shelbourne Falls farm off the back of his successes in crafting astronomically stunning color. Ever since, Josh has always managed to place himself in a position of reaching out to his community through art. He was president of the Glass Art Society, and earlier he helped found the Craft Emergency Relief Fund (CERF), which played an integral part in providing a safety net for makers who fell on hard times, often through no fault of their own. "I would see people who had just blown the engine in their truck or somebody break a wrist or have a studio burned, and their entire livelihood would be endangered because they hadn't made it to their big show. Now CERF has an endowment and a board, and they are genuinely helping people."

Josh forming a Megaplanet with his crew, 1990s. Photo by Greg Bardwell.



Not just concerned about those already skilled in their chosen craft, Simpson wanted to remove the barriers to the entry of skilled craft for those who'd never be able to afford the tools of the trade. Partly with his help, the answer came in the form of Snow Farm, the New England Craft Program, a school focused on a summer program for teens and community outreach for a multitude of mediums. Smiling widely as he ponders all the creative energy that Snow Farm has fostered, he explains, "The school teaches clay, ceramics, weaving, metalwork, and glassblowing. Set on a secluded 50-acre campus, it's a great place to spend a long weekend or a summer."

Worlds Meant for Wonderment

With charitable endeavors flourishing and now half a century into his career, Josh can't help but remember his first and seemingly longest stint of volunteer work as a glassblower during one fateful winter in western Massachusetts. Saying yes to doing hot glass demos for some middle schoolers seemed like a simple, fun way to share his work with his new community. Little did he know that "middle schoolers" meant every one of them in the county, and that "yes" meant a weekly commitment through the snow-melt season and into spring. He also didn't know that the limited attention span of a thirteen-year-old could be a catalyst likened to the Big Bang, an event that spurred the creation of the universe.

The artist reminisces about the origins of what is arguably his most iconic series. "Eighth graders are people who will suffer no boredom in their lives whatsoever. They weren't interested in vase making or bottles or plates or goblets. They did, however, take an interest when I started making marbles. Then one night I thought about Jim Lovell, one of the Apollo astronauts who, while circling the moon, observed that he could cover the earth with his thumb. I thought that our earth, which seems so limitless and vast when we're standing on it, is really as small as a little blue marble floating in the black void of space."

Simpson awoke the following morning no longer interested in making the cats-eye marbles he was using to try to woo the students, but instead decided on a new path for himself as a creator of worlds. "I started making planets. I had read enough science fiction to be able to make up stories about them. What kind of world was this? Was it friendly? Was it warm? Was it wet or dry? What was going on down there? I began to engage these kids making marbles I called *Planets*, but I never thought much would come of them. Each was very simple with my silver New Mexico pattern made to look like stormy oceans and maybe some crushed up frit that made imaginary continents."

Initially, the tiny geospheres were nothing more than a fun little gift intent on sending the kids' imaginations off exploring, but as time grew so did the worlds, and with their physical growth came their growth in popularity to the point where galleries and museums were requesting worlds of their own. "Eventually in 1987, I stopped making goblets altogether and concentrated more on making the *Planets* and space-related artwork. Along the way, I thought I should add imaginary structures on the planet's surfaces that might have been inhabited by intelligent life forms. From there they just kept getting more and more complicated."



Josh Simpson, Corona Stellar Disk, blown glass, 18" diameter, 2010. Photo by the artist.



Josh forming a Megaplanet. Photo by Greg Bardwell.



CORNING MUSEUM OF GLASS STUDIO

Amber Cowan
Ross Delano
Max Erlacher
Eusheen Goines
George Kennard
Martin Rosol

cmog.org/studio

Sanders



\$925.00
Deluxe Commercial
Wet Belt Sander



Covington

**520 E. Franklin Rd.
Meridian, ID 83642**

877.793.6636
admin@covington-engineering.com
www.covington-engineering.com







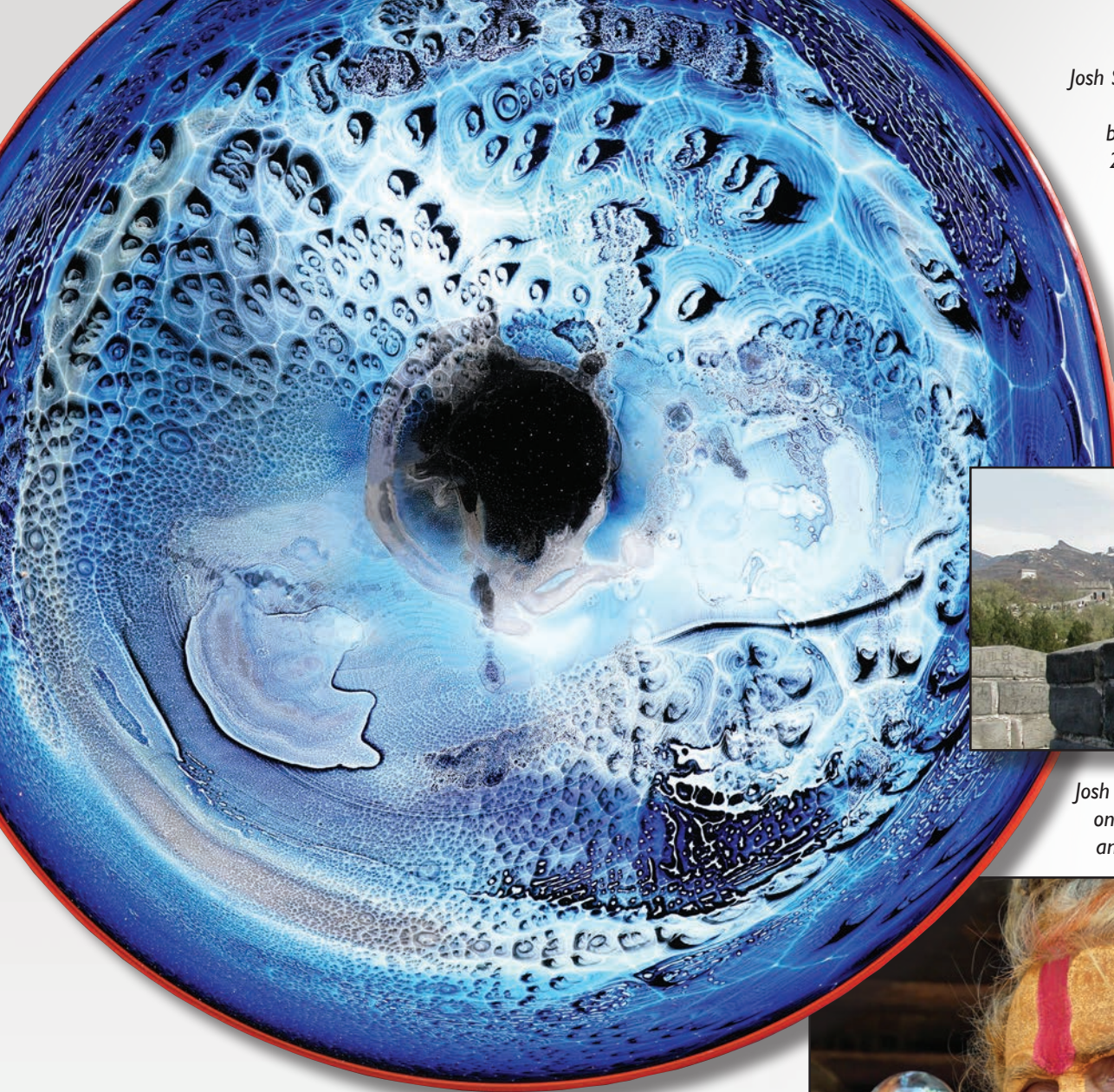
Play with Light, Paint with Glass

'A Painterly Portrait in
Glass' with Tim Carey



Online / Interactive Class
classes.bullseyeglass.com

 **BULLSEYE**
GLASS CO.



Josh Simpson, Subrahmanyan
Chandrasekhar Disk,
blown glass, 10" diameter,
2017. Photo by the artist.



Josh Simpson, Infinity Planet
on the Great Wall of China,
an Infinity Project Planet.



Josh Simpson Infinity Project Planet in
Nepal. Photo by John Levine.

To Infinity and Beyond

Tying in his awe of the universe with his love of scuba diving and his time in the air as a licensed pilot, the *Planets* became a way for Simpson to share the perspectives of his real-world experiences below the water, above the clouds, and beyond into the unknown. Josh has created thousands of worlds over the years. Some of them, the size of a basketball, grace the halls of the museums, galleries, and even embassies around the world as part of the U.S. Art in Embassies program. Others range down to single-digit inch sizes and can be admired in the palm of your hand. As his worlds gained both notoriety and value, Josh ensured that the art, which started as an engaging gift for kids, would always stay that way too.

Not only does Simpson offer smaller *Planets* at prices that are almost universally accessible, but he has also hidden and given away perhaps as many as he has sold. The beautiful part is that unknown amounts of them are still out there—unclaimed and possibly hidden forever. “For years I hid them myself. When friends went somewhere like the North or South Pole or off to sail around the world, I’d ask them to also take some *Planets* and drop them somewhere, maybe at the equator or some interesting place along their way.”

Josh figured that the idea of hiding his glass for some unknown beneficiary to find not only fit his giving nature but was also kind of a cool way to mess with people. To really start giving on a large scale, Simpson started his now world-renowned Infinity Project for which people can write in with an idea of where they’d like to hide a marble. Those chosen receive two *Planets*, one for themselves and one to hide. “We have an archive of 20-plus years of letters from people. There are so many places, and there may be more than four thousand *Planets* already hidden around the world, ostensibly for archaeologists to find. More than that, they are meant to be a gift for someone who might never collect my work and also perhaps be a small treasure for someone in the future.”

Fifty Years and Counting

In his 50th year, Simpson is looking forward to not looking back. His newest book, *Josh Simpson: 50 Years of Visionary Glass*, a retrospective on his career, is taking care of looking back. So, too, is the 50-year retrospective exhibit, *Josh Simpson: Visionary Explorations in Glass* at the Springfield Museum opening in October 2022.

Josh states assuredly, "I am not really built to look back. I am built to think more about what I am going to work on this morning and decide what's the next thing."

G&A

Josh Simpson

30 Frank Williams Road
Shelburne Falls, Massachusetts
01370

(413) 625-6145

josh@megaplanet.com

joshsimpsonglass.com

Facebook@joshsimpsonglass

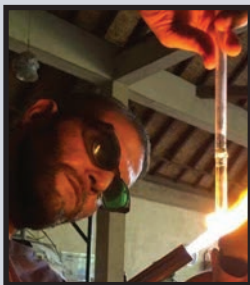
Instagram@joshsimpsonglass

YouTube.com@joshsimpsonglass

Pinterest @ jsimpsonglass

Photo by Wekku Ari Säski

Joe Samuelson III has been a borosilicate lampworker intermittently for 20 years, both professionally and as a hobbyist. The focus of



his work has largely been on functional glass in which he enjoys taking his own style and collaborating with artists who have unique aesthetics. In addition to his functional work, he produces a wide variety of glass both lampworked and fused. For more than a decade, Joe has been an avid collector of murrine focusing largely on glass butterflies.

Originally from Buffalo, New York, Joe has been an expat living across East Asia and the Middle East for 15 years, both teaching and managing English language programs. He is proud to be utilizing his BA in Journalism and experience as a writing instructor to venture deeper into the world of glass and glass art through his work with *Glass Art*® magazine. A variety of his glass art can be found on Instagram @number3glass.

© Copyright 2022 by Glass Art®.
All rights reserved.

A DOWNPOUR OF DICHROIC

- Patterns
- Textures
- Crinklized
- Etched
- And So Many Colors!

COATINGS BY SANDBERG, INC.
MANUFACTURER OF DICHROIC GLASS

714-538-0888 | www.cbs-dichroic.com

How are you harnessing light?

Glass needs light to **GLOW**

Make your art float with invisible levitation and glorious colored shadows!

Like the Great Houdini...
FLOAT YOUR ART

www.FloatYourArt.com

Elegant * Easy * Economical

Intellectual Property: To Share or Not to Share?

by Vicki Schneider

Most successful artists have developed techniques and designs that they spent many years perfecting and have often become distinguishing features of their work. To what extent should professionals be expected to freely disclose these discoveries?

Some artists closely guard their intellectual property, considering it a competitive advantage and the embodiment of their hard-won battles in the studio. Others share it openly, believing that holding it close is fruitless or that it is their obligation to make their discoveries readily available to everyone in the glass community. Still others have chosen to share it selectively, applying some sort of criteria to determine who deserves to possess their processes, “tricks,” and insights.

This debate has been raging on through the ages. Anyone following glass groups on social media will see this discussion surface time and time again. One extreme school of thought purports that everything has been done before, and at best, we are merely

adding relatively insignificant modifications to the foundations built by others. If that is the case, then nothing is truly proprietary. In practice, however, there is a much broader range of beliefs that deserves examination.

We asked four established glass artists to provide a glimpse into their attitudes and behaviors about sharing their techniques and designs. Several of the people with whom we spoke are educators, which seems to inform their positions on this incendiary topic. It is highly unlikely that this article will place the final punctuation mark on the controversy. However, we hope that it will help you reexamine your own perspectives and formulate a practice that works for you.

As we look forward to future “Artist to Artist” columns, we welcome hearing from you. If there are artists you would like us to contact or any questions that you would like us to ask, please email theflow.maureen@gmail.com.

Bruce Sillars

California Style Torchwork on Solid or Blown Forms
50 Years Experience in Glass Art

I have been working in glass for fifty years. What and with whom I share glass knowledge has evolved over the years. At first, nearly everything was considered a closely guarded secret, but over time I have become more open to talking about how I do things and demonstrating those techniques.

Early in my career, as techniques were ever-evolving and developing, I held new discoveries very close. Sometimes new techniques would inspire new designs, and sometimes the search to bring an idea to life would force me to develop a new technique or tool. That development process was time-consuming and could be pretty frustrating when things didn't work out quite as well in practice as they did in my head. As a result, I would share and collaborate with the artists who worked closely with me at the studio, but not so much with outsiders.

*Bruce Sillars, Bighorn Ram, hot sculpting,
11"x 11", 2021. Photo by the artist.*





Bruce Sillars, Clear Encased California Poppies, torchwork decoration, free blown, 5" x 4", 2021.
Photo by the artist.

(Top left) Bruce Sillars, Clear Encased Teal Autumn Aspen, torchworked and frit decoration, free blown, 18" x 6", 2017.
Photo by Ron Schwager.

(Center left) Bruce Sillars, Teal Iridescent Bird of Paradise Vase, torchworked decoration, free blown, 12" x 5", 2018.
Photo by the artist.

(Bottom left) Bruce Sillars, Magnum Upright Sunflower Encased Paperweight, torchworked decoration, furnace encased, 6" x 4", 2014.
Photo by the artist.

Today, I am willing to share more of what I know, as are so many other talented artists. I have not yet done any formal teaching but have considered doing classes or workshops, and I have shared short video clips of techniques on Instagram.

The reason for the shift in my attitude is partly due to the openness of other artists who share their work in person and on the Internet. I have also come to realize that a demo may be helpful to someone who is beginning to learn a new skill. That demo might get some artist started in the right direction, but it is no substitute for putting in the time at the bench and learning from your own failures and successes.

www.orientandflume.com
www.facebook.com/orientandflume
www.instagram.com/sillarsglass



Charles Gabriel, Bubbles To Skalabotnur, carving and kiln work, 30-1/2" x 65-1/2" x 1/2", 2021. Photo by the artist.

Charles Gabriel, Chocolate 2.0, carving and kiln work, 26" x 74" x 2", 2018. Photo by the artist.

Charles Gabriel

Carved Flat Glass

35+ Years Experience in Glass Art

I don't mind sharing in a generalized way some of the techniques that I have found to work the best, both to help inspire and to draw attention to what should be considered when creating this type of work. Regarding holding back on more detailed explanations, I think that what I share provides enough guidance to enable other artists to develop their own method and style while bypassing a considerable amount of the research and development. What I do is very hands on, and what works for me at a certain level may not be what works for someone else.

Of course, there are some elements that I am still learning and couldn't present myself as a definitive source. Plus, there are some secrets on which I'm still paying down the learning curve.

www.CharlesGabriel.com





Charles Gabriel, Wayfinder, carving and kiln work, 60" diam. x 3" deep, 2019. Photo by the artist.



Charles Gabriel, Wayfinder, carving and kiln work, 60" diam. x 3" deep, 2019. Photo by the artist.



Charles Gabriel, A Table Set For Two, carving and kiln work, 48" x 90" x 1/2", 2018. Photo by the artist.

Erwin Timmers

Cast Recycled Glass

20 Years Experience in Glass Art

Many years ago, at the suggestion of a friend, I started experimenting with a bas-relief casting technique. I was ecstatic with the results, even the very first ones. My hand, with my crooked pinky, was my first prototype model, and even my fingerprints were clearly visible in the casting. The piece was very detailed and surprisingly easy to do. The process turned out to be especially useful for recycling sheets of window glass, which is why I use it a lot.

I didn't invent the technique, but I did develop it. I started from scratch, and over time I achieved excellent results. I'm proud that I was able to take a mere suggestion that some said would never work and turn it into one of the major techniques used at the Washington Glass Studio. I now teach and share the process, and it has found other users who have benefited from my work.

I keep Harvey Littleton's words in mind: "Technique is cheap." It's what you do with it that matters.

www.erwintimmers.com

www.facebook.com/erwin.timmers.75

www.instagram.com/erwin.timmers/

202-255-1118

erwin@washglass.com



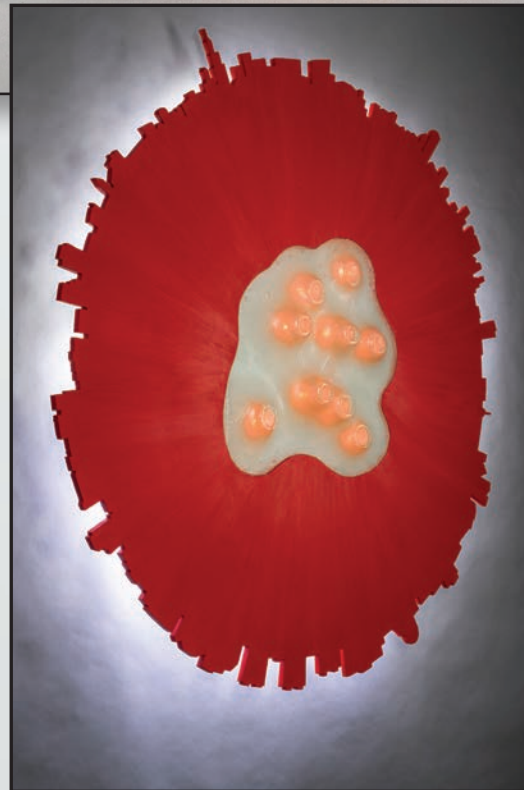
Erwin Timmers, *Words Unspoken*, cast recycled glass, metal, and LEDs, 36" x 24" x 4", 2018.
Photo by Anything Photographic.

Erwin Timmers, *Beyond Words*, cast recycled glass, metal, and LEDs, 36" x 24" x 4", 2018.
Photo by Anything Photographic.

Erwin Timmers, *Rebound*, cast recycled glass,
each shape approx. 6" x 6" x 6", 2015.
Photo by Anything Photographic.



Erwin Timmers, *Site Map 2.0*, cast recycled glass,
metal, and plywood, 4' diam. x 15" deep, 2019.
Photo by Anything Photographic.



Erwin Timmers, *Stand Back for a Closer View*, cast
recycled glass, metal, plywood, and LEDs, 4' diam. x 4" deep,
2019. Photo by Anything Photographic.



Jeremy Bert, *Love*, neon light drawing, varied dimensions, 2021.
Photo by Robin Dreyer.

Jeremy Bert

Neon

Approximately 30 Years Experience in Glass Art

My work is a reflection of the time and place in which I live. I stay true to this reality when creating. Thankfully, we have university art programs and craft schools that offer neon classes. These programs teach people the craft of neon tube making. They actively participate in keeping this extraordinary medium in the hands of young students who will continue neon's relevance into the future.

There is an element of trust in the student-teacher relationship. As a studio artist and educator, I pass on knowledge to the students. They add that knowledge to their personal experience, expand upon it, and take it to the next level. This is how our collective work evolves.



Jeremy Bert, *Loop*, hand-pulled neon tube, 4" x 6" x 2", 2019. Photo by Jen Elek.



*Jeremy Bert, Unity Circles, luminous tubes, 10' x 10' x 3", 2020.
Photo by Russell Johnson.*



*Jeremy Bert, Ghost Stump, neon sign, 32" x 30" x 4", 2021.
Photo by Jen Elek.*

An unfortunate thing is happening in the neon world. Companies are making fake neon out of plastic tubing and LED lights and marketing it as "neon." These LED displays are not neon and should not be described as such. Glass tube bending is a craft that takes dedication to master. What's worse is that some companies are also helping themselves to designs created by real neon artists. It is troubling to see these companies appropriating ideas without acknowledging the original artwork. There is nothing wrong, however, with LED. It's a great medium. There is something wrong with misrepresenting LED to make unsuspecting people think it is something that it is not. This type of marketing is unethical and exploits skilled craftspeople.

G.A

www.instagram.com/JeremyBertNeon

© Copyright 2022 by Glass Art®. All rights reserved.

Coatings By Sandberg

2021 Dichroic By Design Contest

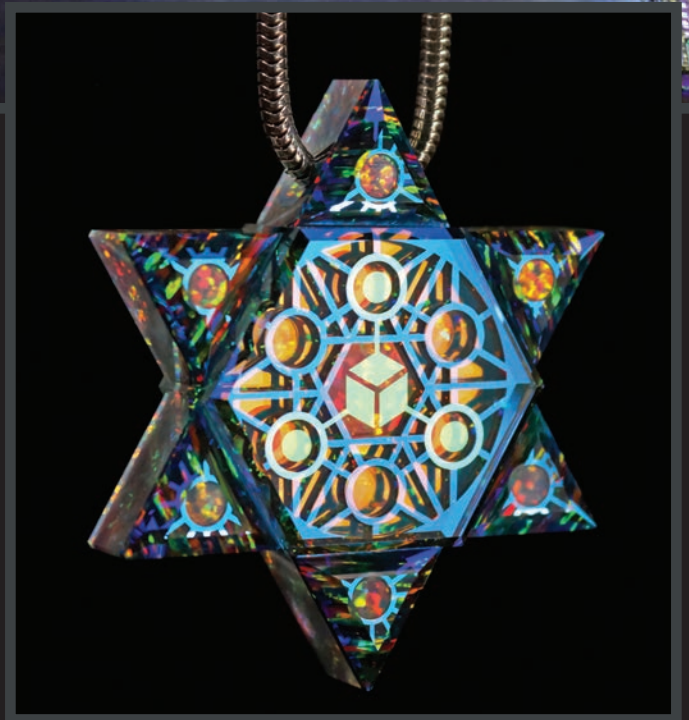
by Dana S. Baldwin

Coatings By Sandberg (CBS), as a way to demonstrate the unique designs that can be created using dichroic glass, sponsors the company's Dichroic By Design contest each year. Artists from all over the world submit work to be considered for inclusion in this stunning event. As always, CBS was once again amazed by the skill and creativity shown by the artists who entered the 2021 competition.

CBS awarded over \$1,700 in gift certificates for CBS Dichroic glass to the first, second, and third place winners, those selected for honorable mention, and the Contest Coordinator's Choice award. We extend our sincerest congratulations to all of these exceptional artists.



FIRST PLACE, \$500
Koji Yamani
Godzilla



SECOND PLACE, \$250
Kevin Benham
Merkaba Pendant

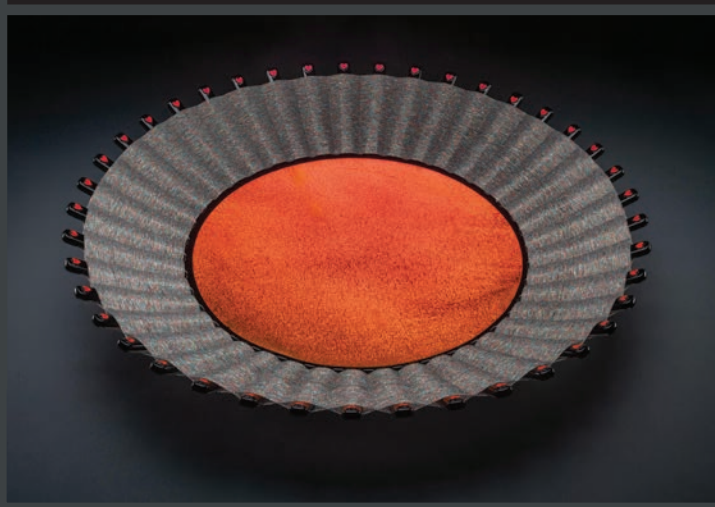


3RD PLACE, \$200
Laurie Madsen Snarr
Lilacs

HONORABLE MENTION AWARDS, \$100



Alberto Corte
Dichroic Bead Necklace



Candace Pratt
Forty-One Bullets



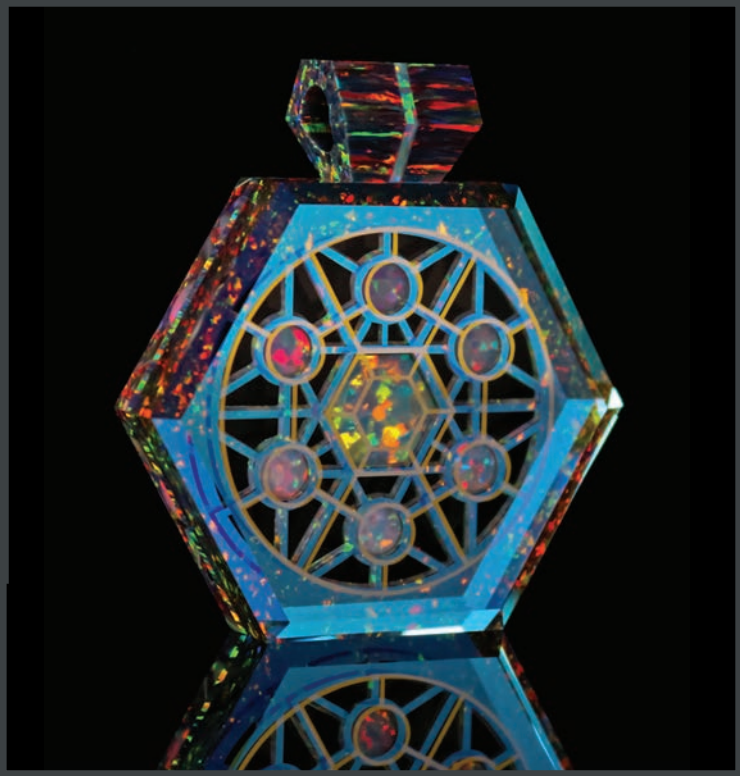
Harry Holladay
Lift Off!

HONORABLE MENTION AWARDS, \$100



Linda Wells
Lady Dichro

Zack Benham
Hexagon Pendant



JoAnne Pohler
Fingernails



CONTEST COORDINATOR PRIZE, \$100

Tanya Mirchandani
Umbrella Girl



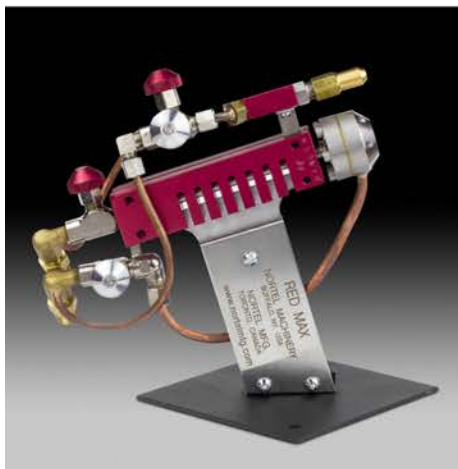
Nortel Manufacturing

Nortel knows how to turn up the heat.

Established in 1967, Nortel Manufacturing Limited has revolutionized the way people work with fire. From flexible hand torches to bench-mounted burners with real power — Nortel knows how to turn up the heat.

And, as working with glass is a natural extension of that burning desire — we carry all the supplies you need to flame-work from kilns to oxygen concentrators to our large selection of glass from all major glass manufacturers.

Shop Online
www.nortelglass.com



Handcrafted Stained Glass Since 1924

RETAIL • WHOLESALE • GLASS TOOLS • SUPPLIES • & MORE!

Check it out!

Our new and improved website is easy to use with more products than ever before!

FRANKLIN ART GLASS STUDIOS
 COLUMBUS, OHIO

Our website offers:

- Same day shipping
- World wide shipping
- Simple navigational system
- Compatibility with desktop, laptop, tablet, & cell phone

614.221.2972
 222 E. SYCAMORE ST. COLUMBUS, OH 43204

FRANKLINARTGLASS.COM

FOLLOW US ON Instagram

THE GLASS ASSOCIATION OF AMERICA

GAI TOYO TOOLS 45 YEARS OF INNOVATION

The Toyo® Supercutter Series from Glass Accessories International has been the dependable choice of professionals for more than 45 years.

The latest Toyo cutter from GAI is the **TC-70 Trac Wheel Supercutter** featuring a revolutionary new wheel with micro-notches on the cutting edge. The notches, measured in microns, provide traction to reduce wheel skipping. The result is a clean, complete score and increased wheel life.

The TC-70 is available with a straight or pattern blade and with a brass or contoured acrylic handle.

To see the full line of Toyo tools and locate a dealer, visit:
www.glassaccessories.com

ATELIER D'ART DU VERRE AND THE LUXEMBOURG INTERNATIONAL FESTIVAL OF GLASS ROBERT EMERINGER AND ZAIGA BAIZA FULFILLING AN ARTISTIC VISION



*Foreground artwork by Vladimir Klein (Czech Republic)
at the 2021 Festival. Photo by Harry Baptist.*

by Dr. Julie Anne Denton

Every two years in the sleepy village of Asselborn in Northern Luxembourg, the Atelier d'Art du Verre hosts the Luxembourg International Festival of Glass (LIFG). The Festival opens on a Thursday evening in mid-August and runs through Sunday. During that time, Luxembourg, one of the top ten smallest countries in Europe at only 10,742 square miles, welcomes a multitude of families who buzz around like flies. Their cars spill out of the car park and are strewn in every available space on the surrounding streets.

Upon my arrival at the most recent 2021 Festival, I walked down a small lane by a stone building that houses the stained glass studios. There I found half an acre of land turned into an outdoor exhibition space. As I walked, greeting artist friends and artist strangers alike, I passed by the outdoor glassblowing demonstration by German artist Torsten Röttsch and later saw Bulgarian artist Lachezar Dochev getting a sand mold ready for the sandcasting demonstrations. A little farther, there was Czech artist Petr Stacho mold making in preparation for kiln casting.

The exhibition and demonstration spaces also included a glass painting area for the children and every possible glass technique professionally exhibited in nature—installation art, flameworking, fusing, stained glass, and so much more. Even the Russian master engraver Alexandr Fokin was working on his wheel, his adult children standing next to him who were also showing in the exhibition as glass artists in their own right.

Bringing a Dream to Life

It was time to find out more about how the Festival began through the efforts of master stained glass restorers Robert Emeringer and Zaiga Baiza. I found Zaiga in the sales room where her husband Robert was busy walking around with his walkie-talkie while alternating his speech between Luxembourgish, English, German, and French. We all walked together to one of the quieter stained glass studios and locked the door to gain a smidgen of privacy in this magnetic and frenetic environment. This provided the perfect place for Robert to share how it all began for him.

"It was a long time ago when I didn't know anything about glass and how it worked. I was 14 years old and still at school, and a friend asked if I'd like to work a little in a glass studio. In the beginning I was simply cutting float glass. As I became more experienced, the work became more specialized and I was taught how to lead. Not long after, I changed and moved jobs to work with a dedicated specialist."

It was obvious that Robert was enjoying his reminiscing by the wistful look on his face. "This specialist was Paul Rölader, who was the most respected master in Luxembourg at that time. Rölader worked only with stained glass, painting, and restoration. I began my apprenticeship when I was 18, and I worked alone with the master. The company was focused on quality and authenticity rather than production, and it was very relaxed."

"After working for several years with the master, I became independent and discovered a groundbreaking restoration technique related to installation. My new technique retarded the condensation buildup that has spoiled so many stained glass windows in the past. The old restorers used to sandwich the stained glass in between protective glass panels. Restoration of that kind makes the glass sweat and give off gas due to the organic materials that were used in stained glass. Stopping the stained glass from breathing kills the fine paintwork."

"It is hard to know exactly what damage is done to the glass due to sweating and condensation, but when we open an old panel restored in this way, the smell can be appalling. The panels even have mushrooms growing from the lead came! Finally, the reflections on the protective glass spoil the look of the original stained glass."

"My groundbreaking technique involved installing the stained glass on the interior of the double-glazed protective unit. Once cold bonding the edge of the stained glass to the protective panel is done, the stained glass is allowed to breathe while simultaneously being protected from the elements outside. This technique extends the life of the panel by decades. I am proud of my work."



Robert Emeringer working on the restoration of a stained glass window at the church of Marienthal, Luxembourg. Photo by Zaiga Baiza.



Sharing a Passion for Glass

Zaiga and Robert are a team. Rob has run his own stained glass business for 45 years, and Zaiga informed me with a wicked laugh that Robert was first introduced to glass in 1964, the year she was born. "I grew up in Latvia during the Soviet time, and when I came of age I attended the Art Academy of Latvia to study glass. It would be hard for someone in 2021 to imagine living in those times of the Soviet Union. Originally, I did not like stained glass. I couldn't comprehend why someone would create a small picture and then place that picture in a window to close the view. Why? Nevertheless, I applied for glass because it was such an interesting material."

"In Latvia there was no possibility to learn sculpture. We had no blowing facilities, and we did not know pâte de verre. We didn't even know fusing. What was available at that time was stained glass. Restoration is something Latvia knows very well, and they excel in it to this day."

"I had no idea what I wanted, and then I met Robert. He was visiting the Academy, and he was such an interested man about glass and such an interesting man in everything else. I decided to visit him in Luxembourg, and here I discovered 'real' stained glass. In Luxembourg, the glass wasn't simply a picture

Zaiga Baiza working to restore a stained glass window destroyed during a fire at the church of Schengen, Luxembourg. Photo by Robert Emeringer.

in a window. It was a window! When you take on a restoration project, you have the entire large-scale window, and it isn't simply decorative anymore."

It was suddenly clear that Zaiga and Robert share two big passions—one for glass and the other for one another. "Working with Robert and restoring something so old was very daunting. It scared me because it was so delicate." When asked if they were replacing the glass in their restoration work she replied, "We never ever throw a piece of an old window away if it is possible to use it. Of course, if the glass is not there, then something new must be fabricated. For example, if there is only half of a portrait left from a panel, we will recreate only the half of the face that is missing and fuse the new and the old panel together. This is how restoration should be done, but we are in the minority when it comes to that level of love for the panels."

"We always endeavor to do the best we can with every project. We do not apply the same rules for each one, because every venture is different and requires original and project-specific approaches. Further, we also have to deal with previous restorations, which may not have been sensitively performed."

Restoring Liturgical Treasures

Most of Luxembourg's churches were built from the 19th century onward, since all of the country's older churches, including those from the Middle Ages, were destroyed in the many wars that have been waged in and around the country. According to Rob, he and Zaiga are presently working on a very interesting restoration of a church in Troisverge built in the 1850s.

"The church is old, but the stained glass was installed in 1932. The original panels were destroyed in World War I. There are six windows in this church, and they measure 6 meters by 2 meters each. Currently we are waiting on the ministry to perform a survey of the building, and once that is complete we can begin. When we start this project it will take a year to complete, and other than personal art projects, it is the only thing we will work on. This is how long a project takes because many of the pieces of glass are broken, and it takes time to create the appropriate replacements."

Zaiga shared what restoration of these windows, which is a rather intense process, actually involves. "We must uninstall the windows from the church and take them to the studio, then we disassemble the window taking great care to map exactly where the panes have been. It is at this point that we make our decisions about what must be done."

"Thereafter, the cleaning process is painstaking, because we do not want to damage the original panes. Every piece of glass must be cleaned with a Q-tip in water and fine soap only. We do not even dry the glass once it is cleaned for fear of rubbing away the color from the pane. Some of the glass panes are so extremely dirty that they need to be steeped in warm water for a day, although we would never do that with medieval windows. Even gently soaking extremely old glass is a processing measure that is too dangerous."

Once the panes have been cleaned and/or recreated, they are painted with a protective layer of special varnish, the double-glazed units are prepared, and finally the windows are ready to be reinstalled in the church."



Stained glass demonstrations by Inita Emāne (Latvia) at the 2021 Festival. Photo by Jean-Marie Kremer.



Demonstrations for glassblowing combined with casting by Torsten Rotzsch (Germany) and Zuzana Kubelkova (Czech Republic) at the 2021 Festival. Photo by Elke Mank.



Hot glass casting demonstration by Lachezar Dochev (Bulgaria) at the 2011 Festival. Photo by Venzo Danev.

The Birth and Development of the Luxembourg Festival

Since my primary objective for coming to Luxembourg was to attend the biennale, I enquire what made them decide they wanted to organize a festival of glass. "In 2004 we took part in an exhibition with artists in the area. A year later we decided to organize our own exhibition, which was successful, since the Luxembourgish population have an appreciation for art. It was after this exhibition that we wondered why we hadn't made an exhibition that was solely glass.

"In 2006 we began what was destined to become the Luxembourg International Festival of Glass. In 2007 we organized the festival again, and that was the first time we created an exhibition catalogue. We also encouraged the exhibiting artists to give demonstrations for the public. At first, we offered only casting demonstrations. We quickly realized that we should give the festival the time and organization it needed and chose at that stage to host it every two years. In 2009 we were able to demonstrate many more techniques including glassblowing, glass painting, and cold working techniques.

"In 2011 we had more than 70 glass artists represented with three exhibitions including one in Luxembourg City. The standard of work at the LIFG is both varied, high, and eclectic. Each biennale includes artists from 20 to 30 different countries including the Ukraine, France, Estonia, Isle of Man, Australia, Canada, Belgium, America, and many, many more. In the beginning we had more artists from the west of Europe, but as the festival continues, there is now a 50/50 mix between glass artists from East and West. Along with the other countries in attendance, that makes for a really interesting display each and every year."

"technical support is exceptional"

"...at the top for quality"

"we couldn't be more pleased"

"we love our Euclid kilns"



EUCLID KILNS

800-296-5456 euclidkilns.com

Hot glass casting demonstrations
by Lachezar Dochev (Bulgaria)
at the 2015 Festival.
Photo by Julie Anne Denton.



Robert Emeringer and Zaiga Baiza
Atelier d'Art du Verre Glass Studio
Hëppchesgaass 2, 9940 Wëntger
Luxembourg
+352997458 (phone)
contact@art-glass-verre.com
www.art-glass-verre.com



Artwork by Robert Emeringer (Luxem-
bourg) at the 2021 Festival.
Photo by Petr Stacho.

Volunteers darted in and out of the studio where we were conducting our interview to ask Zaiga or Robert quick yet urgent questions about festival organization, which meant our interview was coming to an end. Since my time was almost up, I enquired about their plans for the future of the biennale. Robert shared that in 2023 they will host a Jubilee, the tenth Festival, and it will be very special.

"We intend to concentrate on opening the festival to American artists, and in January 2023 we will make our call for applications. Any quality American artists who would like to know more can contact us any time to receive more details. We will concentrate heavily on the demonstration aspect of the festival, while giving our best exhibition to date.

"Looking back at the artists who have shown with us, we have been blessed to work with Scott Benefield (USA), Peter Layton (UK), Edvard Leibowitz (BE), Ed van Dijk (NL), and so many more. We are excited about the future, and we hope to see some of the readers of *Glass Art* magazine attending the event as exhibiting artists or coming to visit us to observe what a wonderfully versatile material glass can be."

GA

Dr. Julie Anne Denton received her doctorate in the combination of sandcast and flameworked glass for artists from the National Glass Centre, UK. She has learned from and worked with the best flameworking artists in the world including Emilio Santini, Lucio Bubacco, Vittorio Costantini, Gianni Toso, Shane Fero, Loren Stump, and Sally Prasch, to name just a few. She rounded off her education with Bertil Vallien of the renowned Swedish design house Kosta Boda (est. 1742).

Julie settled in Zürich, Switzerland, in 2010. From the center of the city she runs her design firm, www.Atelier315.ch, and her www.ZurichGlassSchool.com online learning platform for sculptural skills. She works with a small team beside her who all care deeply about quality education, creativity, and business.

Dr. Julie creates glass and bronze work that resonates beauty, workmanship, and authenticity. Her key themes are people, folklore, nature, and counterculture. She has also received worldwide recognition for her storytelling skills as an artist and her technical skills as a glassmaker.





Celebrate the return of spring with the amazing glass art found in *The Flow*® 2022 Nature issue. From a gallery filled with striking reproductions of plant and animal life to tips and techniques that help artists take their own work to a higher level, there's something for everyone in this fabulous issue.

*Above Ayako Hattori
one of the artists featured
in this issue.*

A glass journal for the flameworking community

502.222.5631

theflow@theflowmagazine.

com
www.TheFlowMagazine.com



**The Best
Coldworking
Tools and Equipment
for your process**

HIS GLASSWORKS

Helpful. Informative. Supportive.

www.hisglassworks.com

828 254 2559 • 800 914 7463 •
support@hisglassworks.com

Armour Etch Glass Etching Cream

**The Original
Glass Etching Cream**

Transform
ordinary glass
into amazing
ETCHED GLASS!

USE ARMOUR ETCH WITH:
OVER 'N' OVER Reusable Glass Etching Stencil
RUB 'N' ETCH The Original Glass Etching Stencil

CREATE YOUR OWN
Glass Etching Stencil

Armour PRODUCTS FUN • EASY • CREATIVE

WWW.ARMOURPRODUCTS.COM
SALES@ARMOURPRODUCTS.COM
PHONE: (973) 427-8787

DANGER! CAUSES SEVERE BURNS WHICH MAY NOT BE IMMEDIATELY PAINFUL OR VISIBLE. MAY BE FATAL OR CAUSE PERMANENT DAMAGE TO SKIN, EYES OR RESPIRATORY TRACT. REFER TO BACK PANEL.
Ages 18 & over • Permanent
Bottle Contains 10 oz. Net Weight of Armour Etch
Product sold by weight, not by volume.

SilkeMat®

... NON-CARCINOGENIC fiber blanket for reusable soft and rigid molds

Like these wonderful artists, what will YOU create today with SilkeMat®?!

Phil Wood

Crystal Lake

Roe Holcombe

www.SilkeMat.com sales@SilkeMat.com
More Information: 336-580-7063



The AGG Summer 2022 Conference

Celebrating at The Corning Museum of Glass

by Jean Alexander

During 2021, the members of the American Glass Guild (AGG) have demonstrated our resilience. We pivoted, dug in our heels, and found new ways to survive and to thrive. Now according to Kathy Jordan, AGG President, co-chair of the International Year of Glass—North America's Steering Committee, and head of the Art/Museum Coordination Committee, it's time to come together to celebrate our strength, creativity, and contribution to glass.

Sharing and Learning

The AGG's Summer Conference will be held at the Corning Museum of Glass (CMoG) in Corning, New York, on July 14–17, 2022. The Corning Museum was founded in 1951 as a “gift to the nation” and dedicated to telling the story of glass. The museum itself is a monument to resiliency, having flooded during Hurricane Agnes in 1972 and been painstakingly restored. It is the ideal venue to commemorate the artistic possibilities that glass has offered us over the centuries.



The 2022 AGG Auction Panels by Sylvia Nicolas. Photo courtesy of the artist.

Petri Anderson, Oh Who's That in the Hollow, 21" x 14-3/4". Photo courtesy if the artist.

The AGG anticipates that, as in the past, the Summer Conference will raise significant funding for glass education through the James C. Whitney Scholarship live auction of glass artworks and supplies donated by its members, glass enthusiasts, and sponsors. The Conference will also feature world-renowned speakers from all sectors of glass, including Narcissus Quagliata, Thomas Denny, Janet Buchnar, Judith Schaechter, Dr. David Pye, and Dr. Manoj Choudary, to name just a few. Instructional workshops, demonstrations, round table discussions, a Retrospective Exhibit, GlassZoom Live, and evening cocktail receptions are anticipated highlights of this epic gathering. This is our opportunity to reconnect, learn, and share our common love of art and glass at a special time and in a special place.

Celebrating the International Year of Glass

The AGG will join with thousands of other organizations throughout the world celebrating the technological, scientific, economic, environmental, historical, and artistic role of glass in our societies. The United Nations General Assembly has designated 2022 as the International Year of Glass (IYoG) to acknowledge the importance of the contributions that glass has made to our global society. Jordan and distinguished glass contemporaries from the United States and around the world will be present for the monumental Opening Ceremony in the Palace of Nations in Geneva, Switzerland, to kick off the IYoG 2022 and place glass at the heart of the United Nations 2030 Humanitarian Goals. You can find more information about their upcoming events at www.IYoG2022.org.

"The stars are aligned to make the American Glass Guild's Summer Conference at the Corning Museum of Glass a once-in-a-lifetime event," says Kathy. "It's a special time for the history of glass, and CMoG is a special place where all glass is revered." For more information about registration, please go to our website or contact info@americanglassguild.org. You can also find us on Facebook and Instagram.

Visit www.americanglassguild.org for more information on the American Glass Guild, including its membership, conferences, auction, and scholarship information.

GA



(Top right) Thomas Denny painting directly onto layered flashed glass during the creation of one of his windows. Photo courtesy of the artist.

(Bottom right) Narcissus Quagliata demonstrating fusing techniques with Bullseye glass. Photo courtesy of Kathy Jordan.

EXHIBITS

SPEAKERS

CMoG 2022

AUCTION

V.I.P. PASSES

CMoG LIVE

SCHOLARSHIPS

CORNING MUSEUM OF GLASS
INTERNATIONAL YEAR OF GLASS 2022

americanglassguild.org ■ SUMMER CONFERENCE - JULY 14 - 17

© Copyright 2022 by Glass Art®. All rights reserved.

The 2022 ISGB Gathering Thirty Years and Still Thriving

by Karyn Sweezy

On June 9–12, 2022, the International Society of Glass Beadmakers (ISGB) will hold its annual conference, *The Gathering*, to celebrate *30 & Thriving*. The board of directors made the hard decision to once again hold its conference online. The fact that this is the 30th Gathering made that decision even harder, since so many attendees have been part of this group since the beginning and miss the opportunity to share, inspire, and visit in person. Online has its advantages, however, with the current state of the world. We decided to focus our efforts on the advantages to remind us that we all love glass and can share and inspire no matter what the barriers.

Showcasing the Wonders of Glass Art

ISGB participants will still have access to diverse and novel glass-related instruction and materials that showcase virtually every topic of interest to glass enthusiasts in addition to the ISGB workshops and events. We can all enjoy the opportunities to join our friends while making new ones with no travel costs plus have a front row seat to all presentations, workshops, and socials, as well as exclusive opportunities to save.

Our basic schedule will include:

- glass workshops launching just prior to the conference with access for one year,
- vendors who will be offering discounts and showcasing new products,
- presentations to inspire and educate,
- social events to share a laugh and a smile,
- the Bead Bazaar featuring artists in the industry offering their work for sale, and
- our ISGB Flame Off, where you can watch a lively collaboration of artists in action.

This is a unique opportunity for beginners and professional attendees to network with each other as well as gallery owners, collectors, technical vendors, and suppliers. In addition, technical vendors will have an opportunity to showcase new equipment, tools, supplies, and glass. Through demonstrations, lectures, discussions, and more, attendees can learn new techniques and business skills to further their glass knowledge.

30 & Thriving

Online

ISGB

June 9–12, 2022

The Gathering

Beadmakers around the world; unite, share & inspire



ISGB members celebrating 30 years of *The Gathering*, where beadmakers around the world unite, share, and inspire.

Photo by Patty Lakinsmith.

Preserving Traditions and Encouraging Innovation

ISGB is proud to continue to find inventive ways to ensure that we are able to share our mission with the glass bead community. We are the ISGB—the leading organization for the promotion, education, and appreciation of the art of glass bead making for wearable, sculptural, and functional art. Our mission states that the organization's goals are “to preserve the rich and diverse traditions of the art of glass bead making and glassworking techniques, promote educational initiatives and professional development, and encourage the innovative use of complementary mediums among artists and craftspeople.”

We invite you to join us! This will be a fun social event with your friends and an opportunity to make new glass friends. The online conference will offer presentations to inspire and online initiatives to share together without leaving home. We will share the hope that 2023 brings us together in person again. Check out our website for more information on how you can register to participate.

G&A

Visit www.isgb.org to find out how to become a member of the International Society of Glass Beadmakers and learn more about additional educational resources and upcoming events.

© Copyright 2022 by Glass Art®. All rights reserved.

SPRING INTO ACTION WITH A MINI DRAGON!



**MOBILE GLASSBLOWING
STUDIOS.COM**

Control

Control Mode: **Manual**

Current Temp: **68 °F**

Manual Set Point: **3 %**

Output: **3.0 %**

Process

Sequence of Operations

- ☐ Valve(s) Proven Closed
- ☐ Heat Requested
- ☐ Blower Energized
- ☐ Air Pressure Switch Satisfied
- ☐ Valve(s) Energized
- ☐ Ignition Transformer Energized
- ☐ Flame 1 Established
- ☐ Flame 2 Established (if used)
- ☐ Fault Detected

Flame Quality (0-58 microamps;
>49 indicates good flame quality.)

Profile Status

Profile Status: Off

Step Type: End

Current Profile: 0

Current Step: 0

Current Set Point: 0

Remain Step Time: 0 : 0 : 0

State/Fault Codes

State 8 – Pre-Purge

Home
Profiles
Data Log
Login/out

Control and Remote Access Systems

Wet Dog Glass offers Bluetooth, Wi-Fi and internet accessible touchscreen controls.

Connect, review and control
from virtually anywhere.

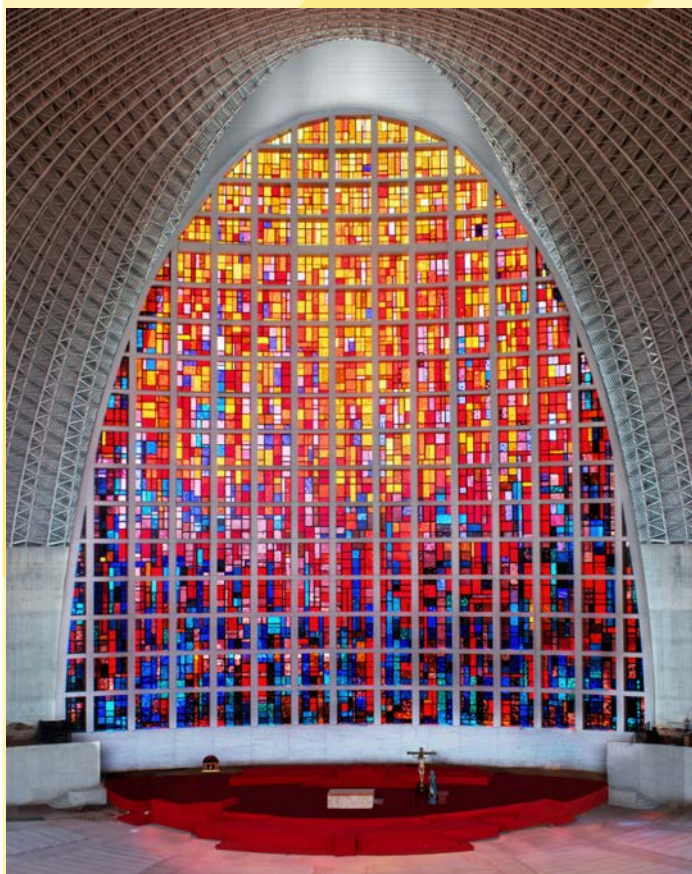
www.wdg-us.com

For details contact
WDG - 910-428-4111 or
tech@wetdogglass.com

Are You Planning an Art Project?

Wissmach glass is the proud partner of many glass art installations, like the one below.

Santuario de Martires de Cristo in Guadalajara, Mexico.



The stained glass window was designed by Fray Gabriel Chavez De La Mora; a Benedictine monk, who has worked in the field of sacred art for over 75 years.

The actual glass was done by Jorge Ortiz Bencomo.

You will find more information about this project and several others at wissmachglass.com. Please contact us with your special requests.



Paul Wissmach Glass Co.

420 Stephen St.
Paden City, WV 26159 - USA
Telephone: (304) 337-2253
Fax: (304) 337-8800
sales@wissmachglass.com

The CGS and Makers Guild in Wales Exhibition Contemporary Glass at Its Finest



by Pam Reekie

The Contemporary Glass Society (CGS) will experience a spectacular year in 2022. From humble beginnings 25 years ago, it has grown over the years into a thriving and proactive society supporting a membership of over 1,000. This year is also the UN designated International Year of Glass, so this is our opportunity to promote to the world the glorious material that we all love.

Live and Online Events

To highlight our anniversary, CGS is hosting a number of online and live exhibitions around the United Kingdom (UK) as well as running monthly themed events online including International Days, talks, demonstrations, and more. As part of these celebrations, CGS is delighted to be working in partnership with the Makers Guild in Wales. Our joint exhibition will be featured in their Craft in the Bay Gallery, a beautiful, fully glazed exhibition area located right in Cardiff Bay.

Applications were encouraged from all CGS membership but especially from our Welsh members. We had some amazing interpretations for the exhibition theme *FLOW*, the word itself meaning to move steadily and continuously in a current or stream. These theme interpretations included the *FLOW* of glass, ideas, creativity, and movement. Entries also represent the *FLOW* state of being in the zone, a mental state in which a person performing an activity such as making is fully immersed and has a feeling of hyperfocus and intensity leading to a sense of ecstasy and clarity.

Contemporary Glass Society
In Partnership with the Makers Guild in Wales
FLOW: Makers Guild in Wales at Craft in the Bay, Cardiff

April 2–May 29, 2022



Neil Wilkin, Peatland. Photo by Stephen Heaton

Cathryn Shilling, An Impossible Thing.
Photo by Alick Cotterill.





Carolyn Basing, Ebb. Photo by the artist.



Linda Norris, Never Done. Photo by the artist.

An Exhibition of Astounding Glass Art

Twenty-two artists have been selected for the exhibition:

Nour El Huda Awad Carolyn Basing Chris Bird-Jones Jacky Edwards Mark Fenn Trish Goodbody Amber Hiscott Pratibha Mistry Paul Mitchell Linda Norris Kate Pasvol Rachel Phillips Nicholas Rutherford Anna Selway Cathryn Shilling Phillippa Silcock Amelia Skachill Burke Susan Thorne Angela Thwaites Neil Wilkin James Witchell Bethan Yates.

CGS Chair Susan Purser Hope, who was a member of the selection panel shared, "It is extremely exciting to have the opportunity to exhibit in such a lovely location as part of our celebratory tour around Great Britain. It was a daunting experience helping to choose artists from work that showed such variety and imagination. We are all really looking forward to 2022, which is going to be such a dazzling year for contemporary glass!"

Charlotte Kingston, Artistic Curator of the Makers Guild in Wales stated, "It is very exciting to see the originality in design and interpretation of FLOW from the selected artists. There is such a high level of skill in working with glass in a multitude of ways. The Makers Guild in Wales is delighted to be working in partnership with CGS on this exciting project to bring contemporary glass to its audiences."

The CGS is the UK's foremost organization for supporting established artists as well as up-and-coming makers and for promoting contemporary glass in the wider art world. Visit www.cgs.org.uk for more information on the Contemporary Glass Society, its upcoming events, and how to become a member.

G&A

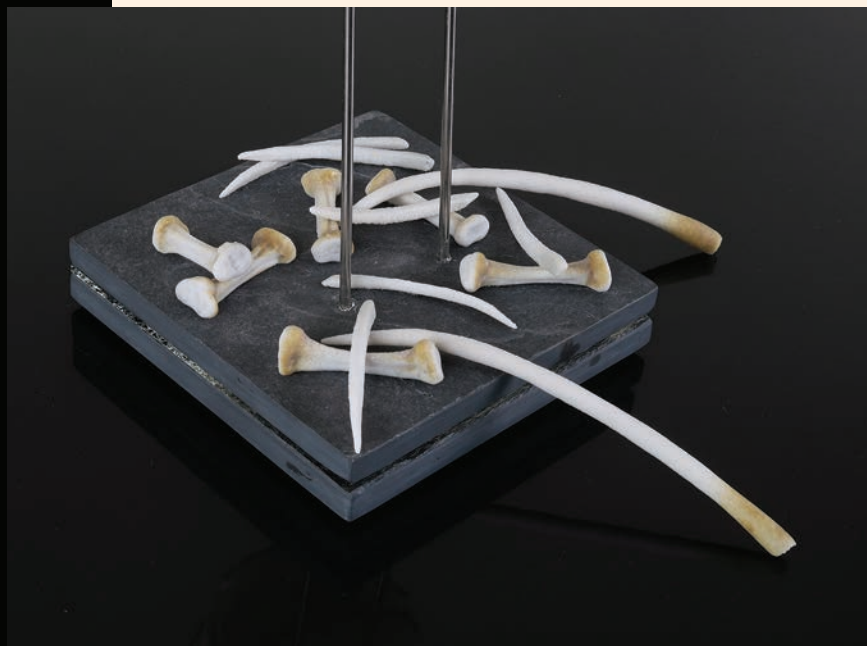
© Copyright 2022 by Glass Art®. All rights reserved.

My Glass Toolbox

by Bob Leatherbarrow

Over the past six years I have written articles for this column on topics ranging from techniques to technical issues with glass, firing schedules, and studio practices. Although they might appear to be stand-alone topics, I commonly combine these ideas and strategies when working in my studio. They are my “glass toolbox” or my bank of information that I draw from to complete a piece. This article summarizes how tools from my toolbox took me from concept to completion when creating three kiln formed sculptures in my new *PanPal* series. The months and years given throughout the article indicate which *Glass Art* issue included the technique or tool mentioned.

The pandemic has extended my annual two-month-long self-imposed residency during which I explore new work to almost 2 years. Since I couldn’t visit with real friends, I decided to make new “friends” referencing pen pals from the pandemic, or PanPals.



(Figure 5) Caveman PanPal bones made from Modeling Glass.

(Figure 4) Powder wafers on the back of Caveman PanPal.

Caveman PanPal

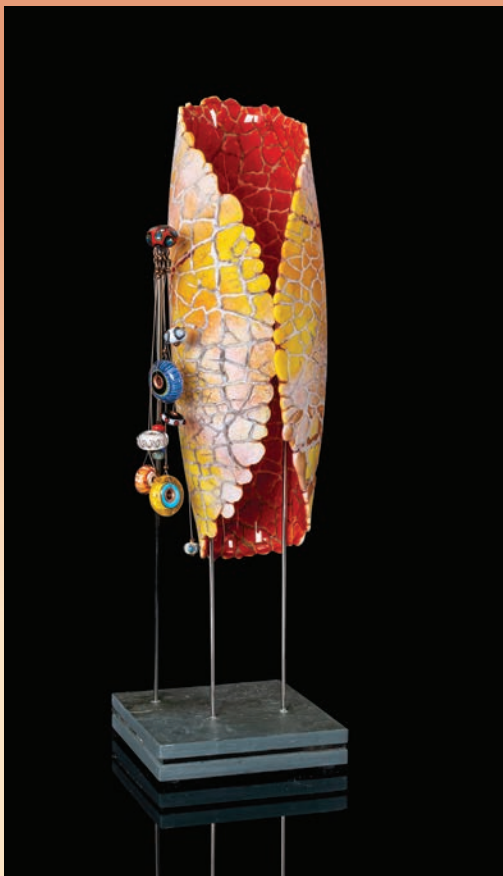
The *Caveman PanPal* (Figure 1) wears a ceremonial robe covered with cave art animals. The base glass and wafers were created in separate firings. The base glass consists of textured and layered colored powders that were fully fused onto a single sheet of 3 mm sheet glass. The overall thickness was less than the 6 mm equilibrium thickness of kiln formed glass. Because the piece was fired on fiber paper, increased friction between the sheet glass and the fiber paper prevented the glass from contracting, resulting in what I call “skinny” glass (November/December 2021). The cave art images are powder wafers (November/December 2016) made using stencils, and the color gradations were created by layering colored powders.

The wafers (Figure 4) were tack fused onto the base glass in a subsequent firing, during which the threat of thermal shock during the initial heating through the brittle zone was significant (March/April 2018). To reduce that threat, the ramp rate was slowed to 200°F/hour, and a 20-minute hold was included at 500°F. This schedule allowed heat to conduct slowly into the interior of the glass, so the temperature in the glass beneath the wafers was comparable to the temperature in areas not covered by wafers. If the temperatures are comparable, then the expansion is comparable and there is no excessive stress buildup.

The bones on the base of the sculpture (Figure 5) were made using Modeling Glass™ (March/April 2019) which, when mixed with glass powders, creates a polymer clay-like material that can easily be hand sculpted. This means the bones and tusks were created and fired without using molds. A light sifting of off-white and darker powders enhanced the finish of these artifacts.



(Figure 1) Caveman PanPal.



Artisan and Water Nymph PanPals

The carefully planned colors of the textured and veined pattern in the robe of the Artisan PanPal (Figure 2) resulted from using a variety of opalescent powders to create a blended palette (September/October 2017). One of the implications of the blending tutorial is that dark colors overpower lighter colors. Therefore only a very small amount of dark-colored powder was needed to get the desired effect. In addition, the sequence of laying down powders is important, with lighter colors positioned on the viewing surface. The Water Nymph PanPal (Figure 3) was created to convey protection for the earth's oceans. The school of fish on the robe's exterior are impression wafers (March/April 2021). The raised outline and structural elements of the fish were carved into a flexible linoleum sheet, which in turn was pressed onto loose white powder. The powder was fired to a soft tack fuse, the excess background powder was removed, and colored powders were applied in a separate firing.

If the fish elements had been tack fused onto the base glass in the conventional manner, with the fish on top of the base glass, then the delicate fins, tails, and edges would have curled upward off the glass during tack fusing due to surface tension. To prevent this, the piece was fired upside down with the sheet glass on top of the downward facing fish. The weight of the sheet glass prevented the fish edges from curling upward. To allow the air to escape from the uneven bottom of the project, the piece was fired on fiber paper (November/December 2021).

The sea star on the base (Figure 6) was also hand sculpted from glass powder mixed with Modeling Glass™. To get the proper surface texture, colored frit was pressed onto the wet powder prior to firing.

Finessing the Schedule

These PanPals were slumped twice to achieve their robe-like shape using a process developed by Frank van den Ham. The firing schedule was planned carefully, taking into account how time, temperature, span, thickness, and viscosity would affect the process (July/August 2017). The resulting schedule takes a "low and slow" approach where the pieces are fired for a long time at a very low temperature.

(Top to bottom):

(Figure 2) Artisan PanPal and
(Figure 3) Water Nymph PanPal.

(Opposite page):

(Figure 6) Sea star on Water Nymph PanPal made with Modeling Glass.





These pieces involved multiple firings at a variety of process temperatures. Challenges ranged from preventing thermal shock during initial heating, finding the right temperature to create powder wafers that were not distorted due to overfiring or too brittle to cold work, and controlling the rate of the slump. Conventional firing schedules would not have achieved the desired results. Careful planning of each part of the schedule, from initial heating through the desired process temperature to proper annealing, resulted in creating custom schedules based on the properties of glass and observations made during firing (July/August 2018). Once a schedule was programmed, it was essential, particularly during slumping, to use options on the controller to tweak the program during the course of the firing to get the exact desired result (July/August 2019).

The Glass Toolbox

So what is my glass toolbox? It is my collection of tools such as knowledge, experience, techniques, and materials that I can bring to bear on designing and executing my vision for a glass art project. Quite often a tool originally designed for another purpose can be used to navigate new challenges in the studio. Rummage around in your toolbox to see what you can find!

G.A



Bob Leatherbarrow established Leatherbarrow Glass Studio in Calgary, Alberta, Canada, in 1988 and has created original kiln formed glass ever since. Known for his innovative styles, techniques, and designs, he has taken an experimental approach to developing unique textures and color palettes using glass powders. His glass bowls and sculptures explore the subtle hues and delicate beauty of naturally occurring textures and encourage the viewer to ponder their origin.

In 2008 Leatherbarrow moved his studio to Salt Spring Island, British Columbia, where he continues to make glass and write e-books on his signature techniques. He has also been a popular instructor on both the national and international kiln formed glass scenes. Visit www.leatherbarrowglass.com to learn more about his work.

© Copyright 2022 by Glass Art® All rights reserved.



GAS | GLASS ART SOCIETY

TACOMA 2022

MAY 18-21

Demos, Lectures + Panels
Exhibitions + Activities
Special Events + More!

**REGISTRATION
NOW OPEN**

glassart.org





Creativity

NEW TECHNIQUES AND EQUIPMENT: FILGRANA, CLEAR PLATE, AND THE DIAMOND BAND SAW

by Milon Townsend

Learning to use new techniques and equipment while creating glass art can lead to a multitude of innovative additions to an artist's creative vocabulary. In the last issue we explored new ways to create finely detailed miniature glass sculptures and embed them in clear glass, a technique known as vacuum encasement. Here we'll take a look at three additional techniques that can help you expand your own artistic voice.

Filigrana and Clear Plate

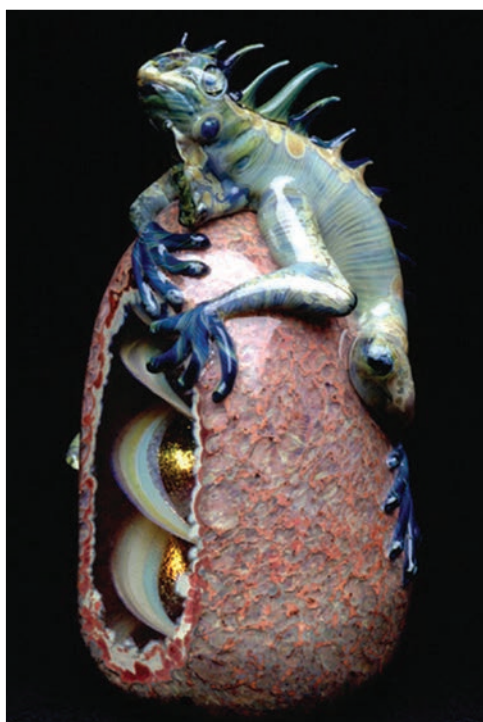
I first saw figurative framework done with filigrana, or spiraling internal patterns of color, in *Dreams and Secrets*, a work by Robert Mickelsen. I found the twisted lines of color embedded deep inside a thick mass of clear glass and flowing around each other quite interesting. I was intrigued. I later saw Robert make a filigrana cane as a demonstration at a *Glass Art Society* conference. After I'd seen how he put it together, I found the process and potential still more interesting, but I didn't do anything with it.

At one point six months to a year later, a friend who was a glass artist came to dinner. I wasn't feeling great, but it was sort of understood that we'd spend a little time in the studio. I told her that I'd seen this somewhat interesting process, so why didn't we go out and give it a shot.

Making my first filigrana cane was an amazing experience, and I wondered why it had taken me so long to try it. I find it



Red Frog
on Filigrana
Weight



Iguana Filigrana



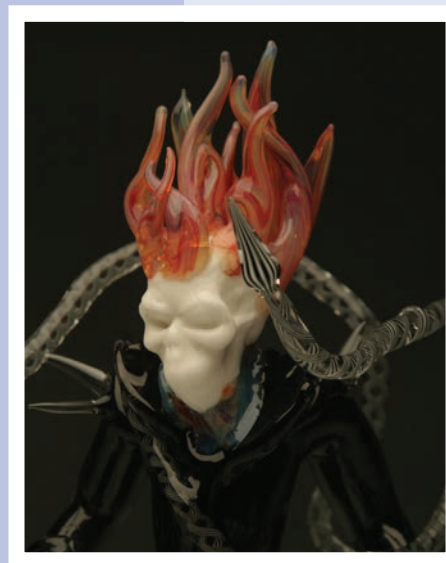
Robert Mickelsen,
Dreams and Secrets.
Photo by the artist.



David Leppla, Fishvase.
Photo by the artist.



Large Dragonfly Scent



Ghost Rider detail

typical of my pattern to be exposed to something, then let it sit and take root, unbeknownst to my conscious mind. When the time comes—which may be anywhere from six months to five years down the road—the new thing presents itself as suitable and ready for the project at hand.

I immediately made as many different styles of filigrana cane as I could think of and created a series of figures with those canes. I used thin clear Pyrex plate glass to wrap them. The thin plate read as though it were fabric swirling around the forms, and the clear glass lines of the flowing plate glass worked well against the internal complexity of the twisted, colored patterning of the filigrana.

One Process Building On Another

In retrospect as I write this today, the use of the clear plate glass was a clear precursor to the dichroic wrapped figures that I'd be doing 10 years later. I had no inkling of it at the time, nor did I think about those pieces when I started the dichro-wrapped sculptures. But my subconscious must have been aware of all of this the whole time.

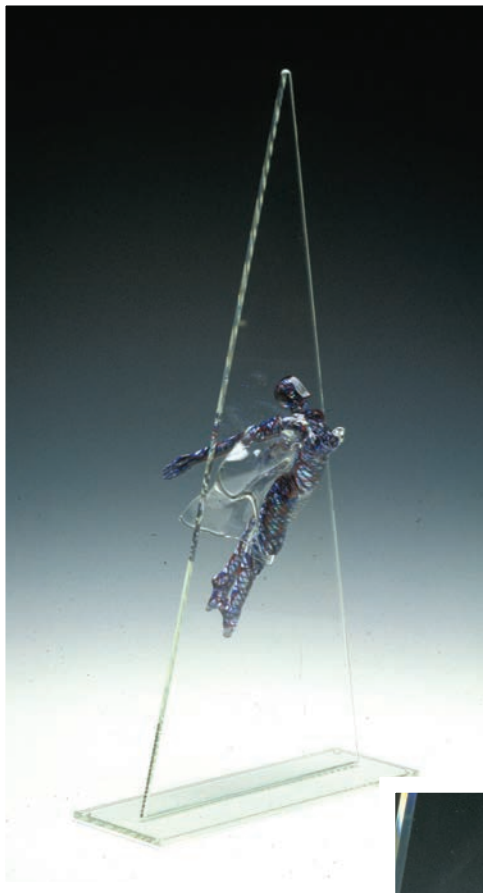
I used the filigrana cane to explore the dragons that have been a lifelong interest of mine, as well as for making smaller figures as scent and goblet elements. I realized that just as I'd encased the colored lines inside the glass instead of stretching it out into a cane, I could marver it in toward the center, creating a fat mass with a spiral pattern of color floating inside. I encased filigrana with an external layer of color and cut a window to expose the internal color pattern. Next I created cane with external stripes, cut it into sections, and ground windows in each piece before reassembling the pieces as the segments of a dragonfly body. I even used a length of modified filigrana to represent the twirling chain whipping around the body of the *Ghost Rider* for a commission.

Band Saw Creations

I'm not sure what gave me the idea, but I somehow envisioned the figures I'd been doing with the filigrana cane passing through a flat plane of glass from one side to the other. Maybe it was David Leppla's vessels, in which he has groups of fish swimming in and out through the sides. I took a look at what type of glass machinery was available, and it seemed as though a band saw might work. I sent a sculpture as a test piece to Denver Glass Machinery to see if, by using their band saw, they could cut it down the middle. They returned the pieces to me, and I was able to laminate them successfully to both sides of a flat piece of plate glass, giving a convincing illusion of passing through the plane. It worked well enough to justify my ordering a band saw for my shop.



White
Dragon



Above: Floating
 Right: Floating detail
 Top Center: Descent
 Top Right: Firebird Ruby



I spent the next three or four years making and cutting figures, then laminating them on opposite sides of differently shaped clear glass plates, with some real success. I liked breaking the plane by cutting, slicing, and dicing to reassemble on opposite sides of flat glass, giving the illusion that the figures were passing through. Following the natural chain of progression, I tried double and triple pieces as well as different angles and modified the angle of the supporting plate. There was enough breadth and depth in the series to occupy me for a number of years.



Caryatid

Discovering Problems and Finding Solutions

I began to have some problems with the series. When you cut glass with a wet saw, the ground glass mixes with the water, forming something called swarf. The swarf migrates and spreads out into all the areas of the piece being worked on. As long as it's on the outside of the piece, it's not a problem, but once it penetrates into interior spaces, you have a problem on your hands. It's virtually impossible to get all of the swarf out, and although it is clear and nearly invisible while wet, once it dries, it becomes opaque white and ruins anything in which it is trapped.

Another problem was that when cutting through the thin, clear glass wrapped around the figures, tiny pieces would tend to fracture and disintegrate, making a clean reassembly very difficult. A solution that worked fairly well was to cut the figures through their non-wrapped extremities, such as the legs. This allowed me to continue the series, up to and including my first few dichroic wrapped figures. By cutting and laminating on the leg instead of through the wrap, I was able to maintain the effective illusion of passing through the plane without risking the loss of all the time and investment tied up in making the figure.

During the time I was working on the series, I realized that the band saw was good for many different purposes other than the one I'd bought it for. It came in handy for cutting thick rods without the typical chipping that creates so much waste. It also works well for cutting curved lines in thick plate glass and for separating elements of work from which I wanted to salvage components. Any good tool will allow you to do better work faster and easier and be good for many things other than what you got it for. Having the band saw changed my shop and the way that I was able to think about my work.

G&A



Triple

Milon Townsend is a self-taught artist with over 45 years of experience in the field of glass art-work and education. He is known for his torch and kiln worked sculpture featuring the human form. Visit www.intuitiveglass.com or Google "Milon Townsend images" to view more of his work and go to thebluemoonpress.com for his educational materials. You can also e-mail milontownsend@gmail.com. The sequence presented here is excerpted from Milon's upcoming book on Creativity.



Hang Your Glass® ADHESIVE SET



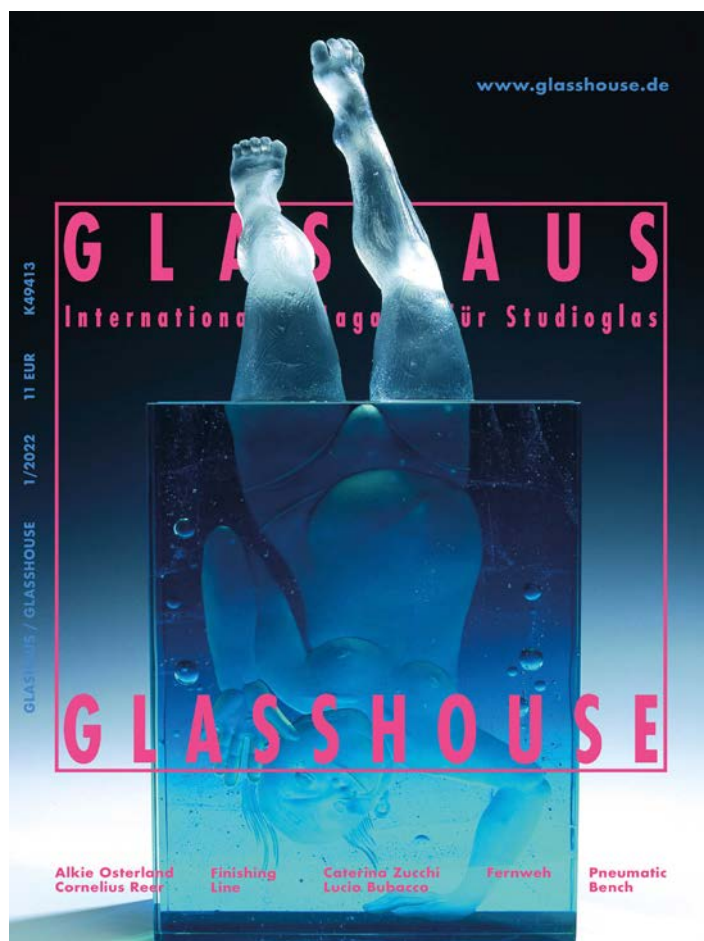
"Stronger than the glass" and permanent!
Tested & approved on Hang Your Glass Hardware

- Stress and impact tested
- Structural and industrial strength
- Fast set and cure time
- Indoor and outdoor use
- Lasts 300+ years, once cured
- Great for jewelry too

**#1 ADHESIVE
GLASS TO
METAL!**

360° SUPER-DUTY STAND OFF For artwork with one attachment point 	ORIGINAL SUPER-DUTY STAND OFF For artwork with one attachment point
2-D ROUND STAND OFF For flat glass and panels 	ORIGINAL ROUND STAND OFF For flat glass and panels
LOCKING STAND OFF For small artwork, offset on glass 	NESTING STAND OFF 3-D glass to glass/metal applications

Hardware for all your needs!
HangYourGlass.com





STAINED GLASS FUSING MOSAICS JEWELRY SUPPLIES

Teaching Art Glass?

We offer wholesale pricing. Get signed up today.

DelphiGlass.com/Teach

800-248-2048

Tiptoe Through the Tulips



Artist: Michael Balak. From Delphi's Online Artist Gallery.



Artist: Julie Mazzoni. From Delphi's Online Artist Gallery.



Artist: Donna Sarafis. From Delphi's Online Artist Gallery.

Helping Glass Artists Bloom
Since 1972



Advertisers' Index

Advertiser	Page
Armour Products (973) 427-8787 www.ArmourProducts.com	31
Bullseye Glass www.BullseyeGlass.com	11
Coatings By Sandberg, Inc. (714) 538-0888 www.CBS-Dichroic.com	13
Corning Museum of Glass www.CMOG.org	11
Covington Engineering Corp. (877) 793-6636 www.Covington-Engineering.com	11
Cress Manufacturing (800) 423-4584 www.Cressmfg.com	47
Delphi Glass (800) 248-2048 www.DelphiGlass.com	46
Euclid's Elements (800) 296-5456 www.Euclids.com	29
Float Your Art www.FloatYourArt.com	13
Flow®, The (502) 222-5631 www.TheFlowmagazine.com	31
Franklin Art Glass (614) 221-2972 www.FranklinArtGlass.com	25
Gemini Saw Company, Inc. (310) 891-0288 www.GeminiSaw.com	7
Glashaus www.GlassHouse.de	45
Glass Accessories International www.GlassAccessories.com	25
Glass Art Society (206) 382-1305 www.GlassArt.org	41
Hang Your Glass® (650) 353-4642 www.HangYourGlass.com	45
His Glassworks, Inc. (828) 254-2559 www.HisGlassworks.com	31
Mobile Glassblowing (229) 352-9988 www.MobileGlassblowingStudios.com	35
Nortel Manufacturing (416) 438-3325 www.NortelGlass.com	25
Paul Wissmach Glass Co., INC. (304) 337-2253 www.WissmachGlass.com	35
SilkeMat® (336) 580-7063 www.SilkeMat.com	31
Skutt Kilns (503) 774-6000 www.Skutt.com/kmt	2
Wet Dog Glass, LLC (910) 428-4111 www.WDG-US.com	35
Youghiogheny Opalescent Glass Company www.YoughioghenyGlass.com	48



Do you want to reach new customers?
Advertise in
GLASS ART®
Magazine
Digital and Print

Margaret Zinser Hunt

An Innovation to the Cress line of Glass Kilns

Our GK Series Drop Bottom Kilns



Jan Goldress

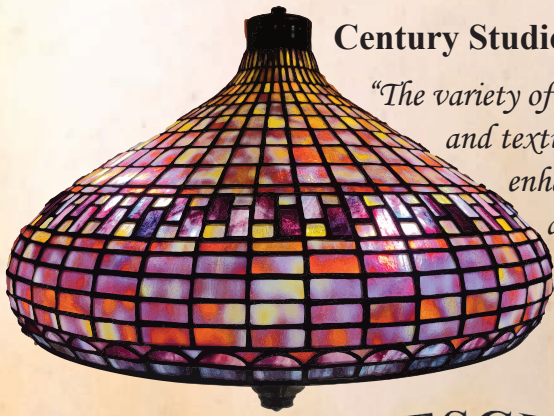
Of the nine kilns I own My GK Cress kilns are by far my most favorite. They are the most amazing kilns I own. There is no question that the GK1, GK2, and GK3 are the safest combining kilns on the market. Additionally they slump bowls perfectly! You'll never have a lopsided bowl again. These kilns are fabulous for doing jewelry or small pieces because you do not have to work around a thermal coupler and tip your tray as you're trying to load the kiln. The drop bottom makes it so easy to slide your full tray of composed pieces of glass right into the kiln, lift, close it and then fire. The size also makes it perfect for doing general fused pieces that you want to slump later, as well as pot melts. The GK1 and 2 are also excellent choice when doing vitriograph, murrinni, and twisted cane rods. I love the GK3 tall edition for doing perfect castings too!

- Designed for easy and safe manipulation of hot glass
- Minimal heat loss and fast temperature recovery for virtually any firing project
- Firebrick brick top and sides with heating elements for even heat distribution
- Comes standard with the user-friendly Bartlett 3 key digital controller
- Cress digital controller has room for 4 programs with 8 segments
- Superior rivited steel bottom with fiber floor drops down easily with four guided tracks on a silid counterbalanced base
- Long-lasting solid-state relays

Model	Volts	Amps	Max Temp	Chamber Opening	Outside Dimensions	Fuse Size	Ship Weight
G K1	120	15	2000°	8"x8"x6.75" H	15.5"x14.5"x17.5" H	20	70
GK2	240/208	18/16	2000°	12"x12"x9" H	25"x25"x39" H	20	180



Cress Mfg. Co., Inc. 4736 Convair Dr. Carson City, NV 89706
 Phone (775) 884-2777 Fax (775) 884-2991 Website www.cressmfg.com
 Email info@cressmfg.com



Century Studios

"The variety of styles, colors and textures of Youghiogheny Glass enhance any stained glass project and make stunning results possible,"

28" Peony Floral Bouquet Tiffany Reproduction Lamp features Youghiogheny Water Glass in the background and a variety of Oceana Glass is used in the flowers and leaves.



Gale Obler



Recently Completed 28" Trumpet Vine Cone using all Youghiogheny Glass. Jenny has been working with Youghiogheny Glass for over 40 years. "I Love It,"



Jenny Hanley-Palmer

With over 400 different color combinations, 9 styles, and many textures, Youghiogheny Glass is quickly growing into the one stop source for Traditional Stained Glass and 96 Fusible Glass.

Visit our website, WWW.YOUGHIOGHENYGLASS.COM to view our digital catalog and find a distributor or retailer near you.



Joanne Leary

"Your shade is only as good as the glass you use, so Youghiogheny is the only glass I know!" Youghiogheny Stipple Glass was used in this 16" Reproduction Koi shade.



Scott Riggs

"Youghiogheny Glass is now the Finest place in the World, making the absolute premium glass for making shades"