



Designer Profile

ERIC FULLER

INTERVIEW

This summer the TheMetagrobologist was excited to finally interview the master craftsmen and puzzle box maker, Eric Fuller. We hope you enjoy what he had to say!

If you are unaware Eric Fuller is a prominent and popular mechanical puzzle and puzzle box designer, who produces highly prized and collectable puzzles of his own and other design. Many of his puzzles can be found on his great website CubicDissection.com and he continues to produce handcrafted puzzles from his workshop.

Eric graciously took the time to complete an interview for us earlier month regarding his own puzzles, website and his collaboration with some of the most elite and acclaimed puzzle designers across the world.

TheMetagrobologist: Eric it's an honour to finally get a chance to discuss your puzzle craft. Can we ask what tools and equipment you use to produce your beautiful puzzles?

Eric: I use the usual variety of woodworking tools. Crosscut saw, jointer and planer to accurately dimension the raw stock, then a table saw, milling machine and routers to mill the stock into complex pieces.

The real art is in the jigs you have to create for each puzzle. Interpreting the joinery of the design and then making the jigs to accurately produce the pieces is the tricky part.

Everything else is really just pushing wood through a saw...admittedly with a lot of attention to detail.

TheMetagrobologist: Can you tell us when you first decided to start making puzzles?

Eric: I started off as a collector, very randomly. It was fall 2002, I was up late at night and I saw a Japanese puzzle box on Ebay. It was 27 moves and a very basic design. I thought it sounded interesting, so I bought it. I solved it quickly but was absolutely fascinated with it so started looking for other designs and became a collector.

Back then there were very few puzzles commonly available. I snapped those up and of course, the next step was starting to collect bespoke puzzles from the likes Wayne Daniels and Tom Lensch. Well, I couldn't afford many of those and besides they were always sold out!

I can't remember when it happened, but I came across a website where someone mentioned making burr puzzles from square home depot sticks and a mitre box saw. I didn't know what that was, but I figured the guys at Home Depot would, so off I went! I bought some poplar sticks and a mitre saw, however, what I really wanted was a full 42-piece notchable set.

I figured out how to cut the long sticks into smaller sticks and then how to cut the front and back of the notches, but I couldn't figure out how to get the wood out of the middle. I went back to Home Depot and the guy told me I needed a chistle, so I purchased one and that went well!

Anyway, I finally got the first puzzle finished, and after putting it together something clicked in my head. I MADE THAT! It was so cool. I'd never made anything before. This seemed much more satisfying than my job in IT.

That year I took off the entire week between Christmas and New Year and sat there sawing away on my kitchen table for the week. I made bunches of puzzles over the Christmas period and they weren't bad! Well, they were, but I thought they were pretty good. After that, I

started trading puzzles with a few collectors and before you know it people were offering me money for them.

By spring 2003 I started Cubicdissection.com at first to show off my collection, and then later to sell puzzles so I could afford to buy more tools (and of course puzzles from other makers). I made and sold puzzles part-time for about a year, then relocated from San Diego to Raleigh.

Of course chasing a girl I'd met. I ended up marrying her, we didn't work out, but she encouraged me to pursue my passion making puzzles instead of finding another job in tech, and I'll always be grateful to her for that. Thanks, Sharon.

TheMetagrobologist: Where did the name Cubic Dissection and Raleigh puzzles originate?

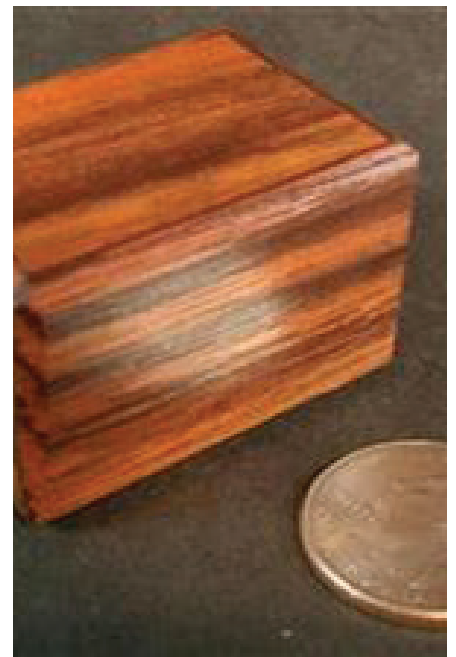
Eric: When I first started making puzzles I was very into basic six piece burrs and cube puzzles. Probably because they're so simple to make. It occurred to me that all such puzzles could be expressed by dissecting a bunch of cubes, and I guess that's how the website came about. Not very inspired, but I guess it's done its job well since I'm on my 12th year.

Raleigh Puzzles came about because I was always sold out of my normal bespoke work, and I wanted to have a line of puzzles that were simple to make, affordable, and available. I did want to distinguish them from my higher end puzzles, so I came up with the Raleigh puzzles line.

Honestly, it probably wasn't necessary. I'm not great at the marketing part of this stuff.

TheMetagrobologist: Can you briefly talk us





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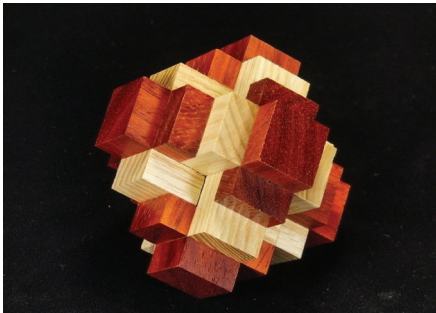
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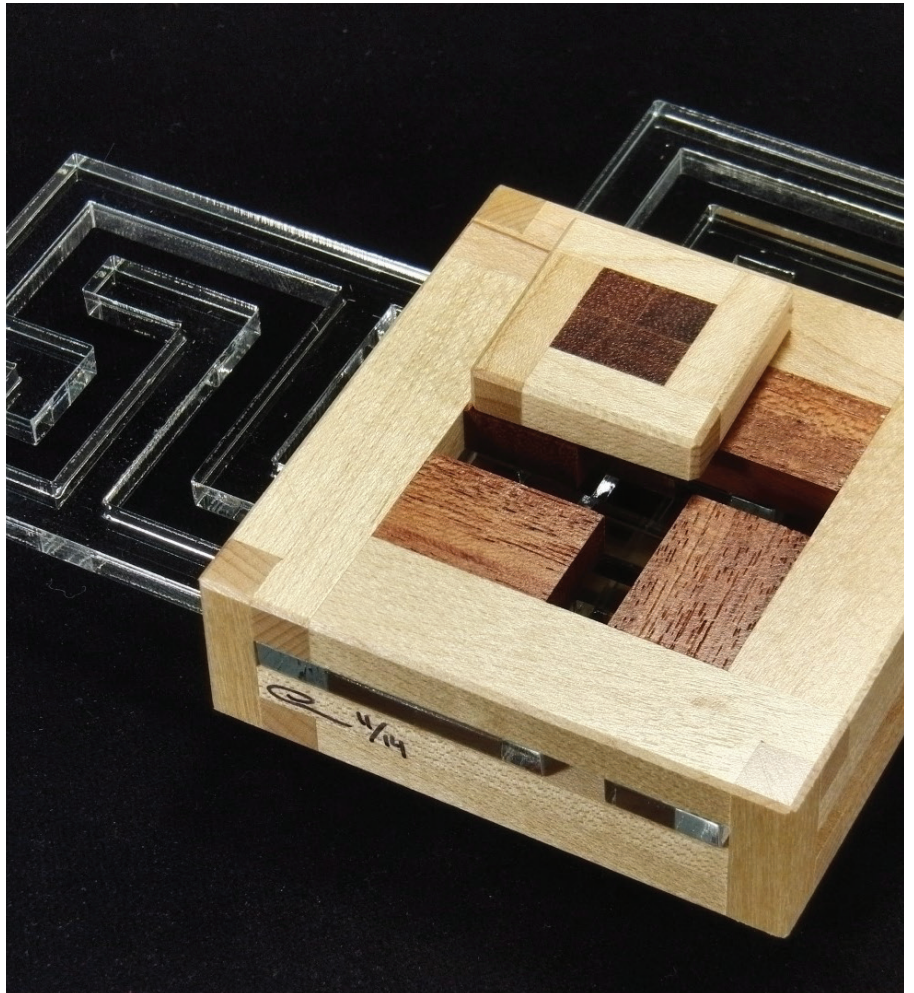


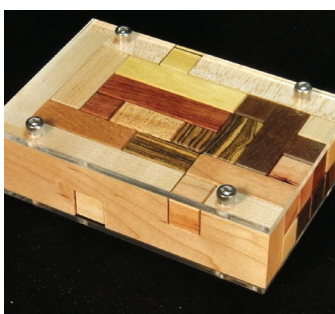
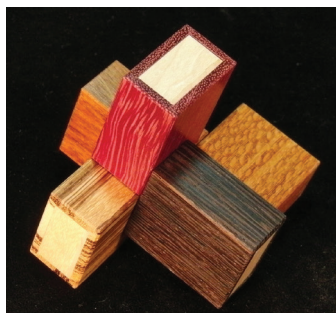
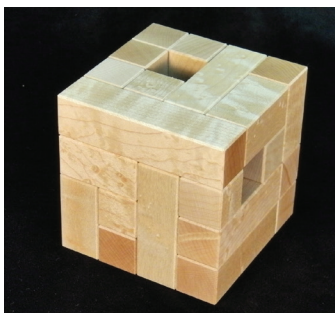
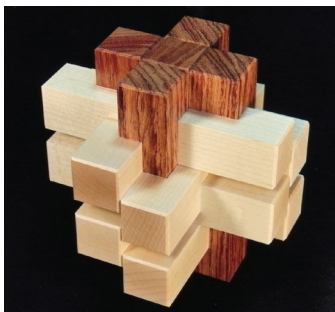
Disjointed Cube
Mineyuki Uyematsu & Ken Irvine | Designers

Crystalburr
Stephan Baumegger | Designer

Chicken Puzzle
Olexandre Kapkan | Designer

Dual Maze
Tamás Vanyó | Designer





through the first puzzles you designed and when did you start to make puzzle boxes and why? What keeps bringing you back to puzzle boxes?

Eric: The first puzzles I designed were boxes, and I've always loved making boxes. I guess it all goes back to that 27 move box. It seemed like magic to me. To be honest, I'm not great at interlocking puzzle design, probably because if I'm sitting down making a new puzzle I'd much rather explore one of the many box ideas I have. I like boxes because you can twist people's assumptions and use them against them. Also, if you do something clever with a box, anyone can recognise it.

Many times it takes a knowledgeable solver to see when something clever is done with a burr or packing puzzle. So I guess I find boxes more universally accessible.

Havana's #4 Eric Fuller | Designer

Helix the Burr Bill Cutler | Designer

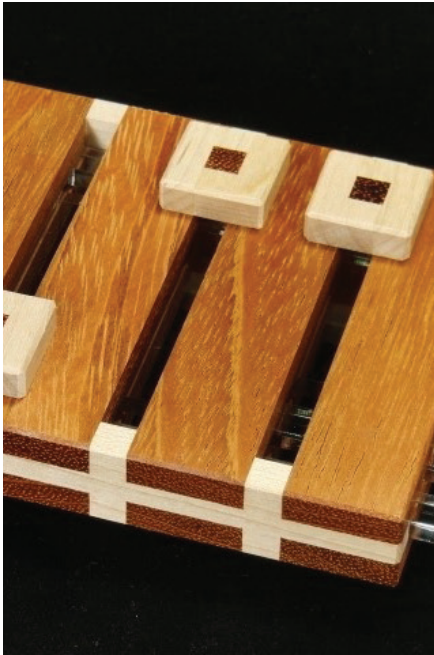
Hinged Box Eric Fuller | Designer

Inner Cube, Tom Jolly | Designer

Matchbox Play Six, Olexandre Kapkan | Designer

Pocket Pento, Jerry Loo | Designer

Rupture, Dan Fast | Designer



TheMetagrologist: Robert Yarger told us in a previous interview that he considered you, Mark McCallum, Scott Peterson, Stephen Chin, John Devost and others in a sort of Puzzle Guild.

When did you first come to meet each of these incredible designer/craftsmen and how did the relationship develop?

Eric: I've known Robert for a really long time, I saw his boxes on Ebay and contacted him and we got along really well. I offered to sell his boxes on my website and the customers loved it. Mark, Scott, John and other part time puzzle makers started selling their work on my site as well and for a while it was a kind of puzzle collective.

TheMetagrologist: What do you consider is your overall favourite mechanical puzzle design and why?

Eric: I really like Kamei's Box with Key. To me, the best puzzles take advantage of your assumptions, and I feel like Box with Key embodies that concept very purely. The solution is clever and humorous in my opinion.

TheMetagrologist: I think I can say without trepidation that many collectors are thankful you continue to produce puzzles. You have now been producing wooden interlocking puzzles and puzzle boxes for over a decade.

What puzzle have you found to be trickiest to solve and trickiest to disassemble?

Eric: Thanks! I feel privileged to be able to do this for a living, and am indebted to my customers (whom I look at as patrons). It's tough to peg which is trickiest to solve, possibly the original Coffin three piece pyramid because



the angles are so non-intuitive. Disassembly wise, probably one of the Cutler designs I've done lately like Cube or Helix the burr.

TheMetagrologist: We read in an interview with Saul Symonds on his website Seekingariadnethread.com that you prefer designing puzzle boxes as it comes much more naturally to you.

Can you tell us what you enjoy about designing and making puzzle boxes?

Eric: I think I like puzzle boxes because the joinery lends itself to hiding surprises and mechanisms. I can take advantage of assumptions and do unexpected things that surprise delight and frustrate. Also, my first puzzle was a Japanese puzzle box, so maybe I just imprinted on boxes like a small child. Probably that, in retrospect

TheMetagrologist: Can you tell what you have found to be the most difficult puzzle box you have made?

What processes do you use to make the most difficult puzzles?

Eric: The ultimate triple locked box was definitely very difficult in terms of being able to solve it using clues given as opposed to a trick or something sneaky. As far as processes, I don't think there's any in particular... it's more the concept and how well I execute the concealment and or sneakiness.

TheMetagrologist: You have now produced a number of highly collectable puzzle boxes. Do you make prototypes when coming up with original designs?



Simultaneous Maze William Hu | Designer

Splined Box #3 Eric Fuller | Designer

Splined Box #2 Eric Fuller | Designer

Eric: I don't actually, I just go straight to production once I have the concept finalised in my mind. The reason is that so much goes into setting up the individual cuts and processes that prototyping is very expensive in terms of time. Surprisingly that's only bitten me in the ass a couple of times, and as a whole it's worked out for me.

TheMetagrologist: In 2004 you produced a limited edition of 45 boxes in a variety of foreign exotic and premium domestic wood types inspired by the traditional Japanese sliding panel puzzle boxes known as the 16 Move Puzzle.

Please explain the origins of these boxes and their mechanisms?

Eric: Geez that's going way back! I wanted to make a sliding panel box, but I didn't have the skill yet to make keys and such. So I figured out a way to make it confusing using the interaction of the panels alone and it really worked out well. Since then I've used the lessons learned in other boxes to great success.

TheMetagrologist: According to your website 'The Hinged Box', a puzzle box that you produced in a limited edition of 40 copies in 2004 was inspired by antique Japanese hinged puzzle boxes?

How did this puzzle come about?

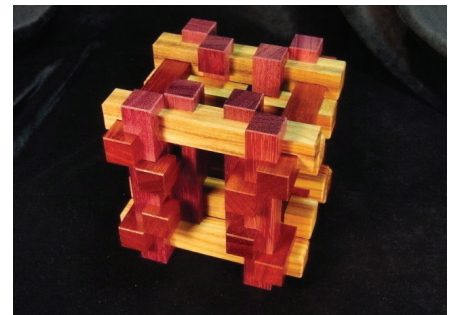
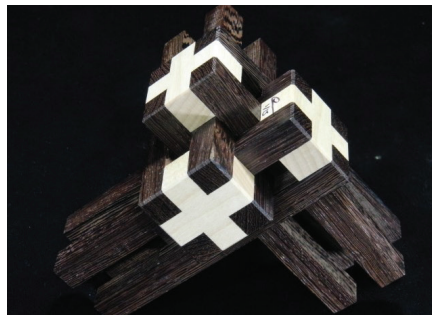


Think Outside the Box Tom Jolly | Designer

Uri Three Bars Dario Uri | Designer

Visible Burr Bill Cutler | Designer

Welded Burr William Hu | Designer



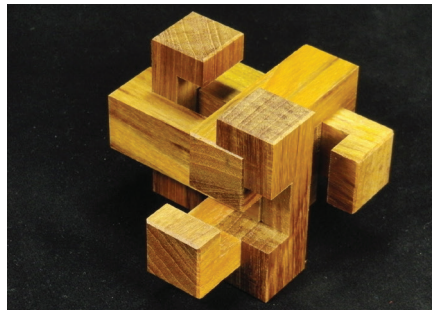
Eric: A friend sent me an original Japanese hinged box which was pretty trivial to solve. I liked the design and immediately thought of a couple ways it could be trickier, and decided to make it. I actually quite liked that design and I'm glad to still have a nice copy of it in my collection.

TheMetagrobologist: In 2005 you produced a series of 30 moves 'Mame' Puzzle boxes limited to 40 copies beautifully made from Honduras Mahogany and Indonesian Rosewood.

What can you tell us about these little puzzle boxes and their production?

Eric: I thought the Japanese Mame boxes had a lot more potential than they were made with. I mean, the highest level one was like 14 moves and they only had a couple steps with so much wasted space! I thought I could do better so I went for 30 moves, which required steps of 25 thousandths each. I remember they didn't sell well at all, and I think it took me a couple months before they were all gone. Which I didn't understand, because it was a hell of a lot of work to make them and they turned out really well.

TheMetagrobologist: We have read some great reviews about another of your popular puzzle boxes known as the Splined Puzzle Box set.



What can you tell about the design process and mechanism of the Splined Box #1 and #2, which you produced in a limited edition of 25 in 2005?

Eric: The design process was pretty much that I thought I could hide some tricky stuff using the splines and it turned out I could! The mechanisms were fun and not super difficult but definitely tricky and fun.

I combined the concepts of the first and second in the third which created a new and cooler whole. The fourth is still in my brain and had turned out to be really tricky to realize technically. I think I have it figured out, though, and will make it once I settle back down from my travels in the Fall.

TheMetagrobologist: The Cam Box or 'The Shut Case Box' is another of your puzzle box designs utilising sliding panels that you produced in 2005 in a limited series of 34 copies from various exotic hardwoods to compliment your previously released "Splined Box" series.

How did this box originate?

Eric: That box actually came out of a collaboration with some random guy who's name I don't even remember. He contacted me and said he needed an original puzzle box to hide a clue in for a high-end scavenger hunt. I quoted him a price and was surprised when he agreed. I made a run for him and if I recall correctly he never paid. So I put them on the site and my customers loved them.

TheMetagrobologist: In 2007 you produced another series of puzzle boxes known as the Triple Locked Box limited to 34 copies made from various Exotic Hardwoods and aluminum and steel.

How did this puzzle come about? You state on your website that this is a phenomenally difficult puzzle box to open and was by far the most difficult box you have produced for the public. What can you tell us about it?



Eric: I started off with one concept and made a mistake with the design. I didn't realise the mistake until WELL into the production phase and was pretty bummed when I realised the box would be trivially easy to solve. I called Robert Yarger to whine and he encouraged me to modify the design on the fly (turns out that's pretty much how he designs most of his puzzles). I did and it turned into a much better box than the original design would have been.

TheMetagrobologist: In 2009 you introduced the 'Tier Box', that you produced in a limited edition of 34 copies. They were made from Quartersawn Bubinga, Quartersawn Paduak and also presented at the 2009 International Puzzle Party. On your website, you state that it requires 14 moves and is anything but straightforward and are at times downright devious.

How did this puzzle come about and why is it downright devious?

Eric: It came about because I was at the time a bit fixated with dual layers of panels, hiding movements in them and getting interesting interactions out of the whole affair. It's devious because you have to backtrack at a couple points which is odd for puzzles with panels and no keys.

TheMetagrobologist: 'The Topless Box' is a very special, challenging puzzle box produced for the incredible Apothecary Puzzle Box project.

Can you tell about the design process of the Topless Box, its unique mechanism and your participation in the wonderful collaboration?

Eric: Honestly the Topless Box is one of my favorite designs. It also came about super easily... I had the idea for the basic mechanism, prototyped it in one afternoon with some scraps, it worked and I designed the box around it.

Participation-wise, that's a funny story. I had thrown around the idea of a box with drawers where each drawer was a different box. Robert wanted to do it but I kind of thought it would turn into a logistical nightmare, so I stayed out of it.

A bunch of designers piled on board and they had a one-year timeline. I chuckled and sure enough a couple years later they still weren't done. Finally, they were mostly done, but one designer dropped out at the last minute.

Dave Cooper called me and basically wouldn't let me off the phone until I agreed to take the last space. I'm glad I did; it turned into a cool project I'm proud to have been a part of.

TheMetagrobologist: One of your most popular and highly collectable limited edition puzzle boxes are those known as your Havana's Cigar Box series.

Can you tell about the design process of the boxes #1Chris, #2 Heather, #3 Mike and #4 Bruce? Where do you get the names? How do their mechanisms differ?

Eric: Heh I got the names from the bartenders of my favorite cigar lounge at home, which is called Havana Deluxe. The mechanisms are completely different for each and I can't go into much detail other than to say that they get progressively more difficult and the third is my favorite.

TheMetagrobologist: In 2008 you produced a wonderful puzzle box that we would love and hope to one day own: 'The Irmo Puzzle Box' limited to 45 copies beautifully made from Paduak, Quilted Maple, Aluminum, Brass, Steel and Acrylic.

Can you tell us about this stunning looking puzzle box? On your website, you state that you feel it is the best box you have ever made. Why?

Eric: The IRMO came about because I was playing around with the Kamei Gift box. It had a wooden bow that rotated freely and somehow I thought it would be fun to make a box which incorporated rotation. I knew about all the stale centrifugal mechanisms and decided to make a box that required Inertia. Since the mechanism is unidirectional, I realized that it used inertia in one direction and momentum in another. Took a while but I figured it out and I feel the execution is some of my best work.

TheMetagrobologist: In 2008 you also produced the 51 Pound Puzzle Box that was six months in making. Made from Purpleheart or Walnut, Maple or Aluminum and limited to 38 copies.

What can you tell us about this puzzle and the inspiration in its creation?

Eric: That one was inspired by standing on a mechanical bathroom scale...enough said. I don't want to give out hints. The metal latches I made are a point of pride; they were a lot of work. I was worried the box wouldn't sell because I had to price it so high, but they did.

Lately, I've been focusing on lower price points on boxes, trying to keep them affordable, but at the same time I have a lot of ideas I can't execute because of that. Perhaps it's time to switch back and forth between affordable and indulgent.

TheMetagrobologist: In 2009 you produced the Beaulid Puzzle Box co-designed with Joel Freedman, made from Peruvian Walnut, Carolina White Ash, Quilted Maple, Steel, Acrylic and limited to 40 copies. What can you tell us about this unusual puzzle box and what made it unique?

Eric: I think I saw the original at IPP and I really liked the design. Joel didn't have the wherewithal to produce them himself and I thought it was a real shame that the concept would go to waste. So I asked permission and he gave it. I thought the mechanism was a bit too easy as is, so I redesigned it and made it more difficult.

In retrospect, that may have been a mistake, since I think maybe it was a bit too tricky. I still think it's one of the coolest designs around, and felt it was underappreciated. The mechanism was complex and beautiful.

TheMetagrobologist: A puzzle TheMetagrobologist has been waiting to pop up on an auction site for some time is the Cartesian Wallet by Akio Yamamoto that you manufactured several years ago along with the Trickster Puzzle Pouch. How did the collaboration come across with Akio Yamamoto seeing as both are produced from leather and not wood which is your usual medium?

Eric: I was having beers with Akio and he pulled it from his pocket and showed it to me. It's a stupidly cool design and I was grateful when he gave me permission to make it.

I have a laser cutter and found that it cuts leather very well, so I went from there. I really like this design and will probably make more of them sometime this winter, so be patient!

TheMetagrobologist: The Tern Key puzzle by Goh Pit Khiam is a very popular puzzle manufactured from acrylic that you produced in 2009.

Can you tell us how this collaboration came about and how did you find the process of manufacturing this puzzle? Were you happy with the final production?

Eric: Goh sent me the original design and I liked it a lot but wasn't quite happy with the design as is. The functionality stayed the same, but I redesigned the mechanism to be more streamlined for production. I thought making it was pretty fun, I don't make a ton of puzzles from straight acrylic, but the final product looked really cool. I was very happy with it.

TheMetagrobologist: You have produced a number of great puzzles designed by Tom

Jolly?

What was your favourite of his puzzles you produced? Was any puzzle particularly challenging?

Eric: Tom's just a great designer and a really cool guy, and when he sends me a design I sit up and take note. I think my favorite was probably the Square Dance, it was just a lot of fun and turned out super cool looking after I found a nice clean piece of holly for the internals.

TheMetagrobologist: What next for us? What designs can we look forward to designed by yourself and others?

Eric: Well, I recently turned 40 and have been taking a semi-break and traveling a lot... which means I'm making more interlocking puzzles since it takes me so much uninterrupted time to finish box designs.

However, I'd really like to make more boxes and feel ready to focus more on them after things settle down this winter. In the meantime, I feel like the designs I've been making have been excellent choices covering broad spectrums of interest. My major focus isn't to make the best puzzle in the world, but to make the best puzzle in the world for the money. While you can find cheaper puzzles, and you can find nicer puzzles, I really believe that for the money I make the best puzzles in the world.

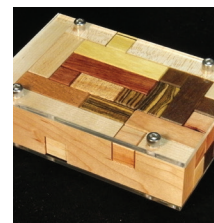
Keeping my work affordable has always been very important to me and I'm quite satisfied to be able to provide puzzles for about the same price as I did a decade ago. As far as new work, I have a couple wicked six piece burr designs from Benedetti on the list. Another crazy Goh rotational packing puzzle, Cutler's S/M 24, and a really cool meta-pentominoes packing puzzle.

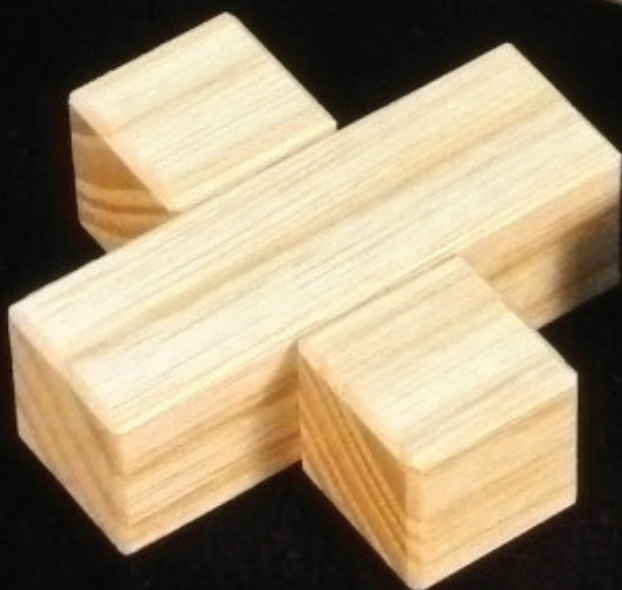
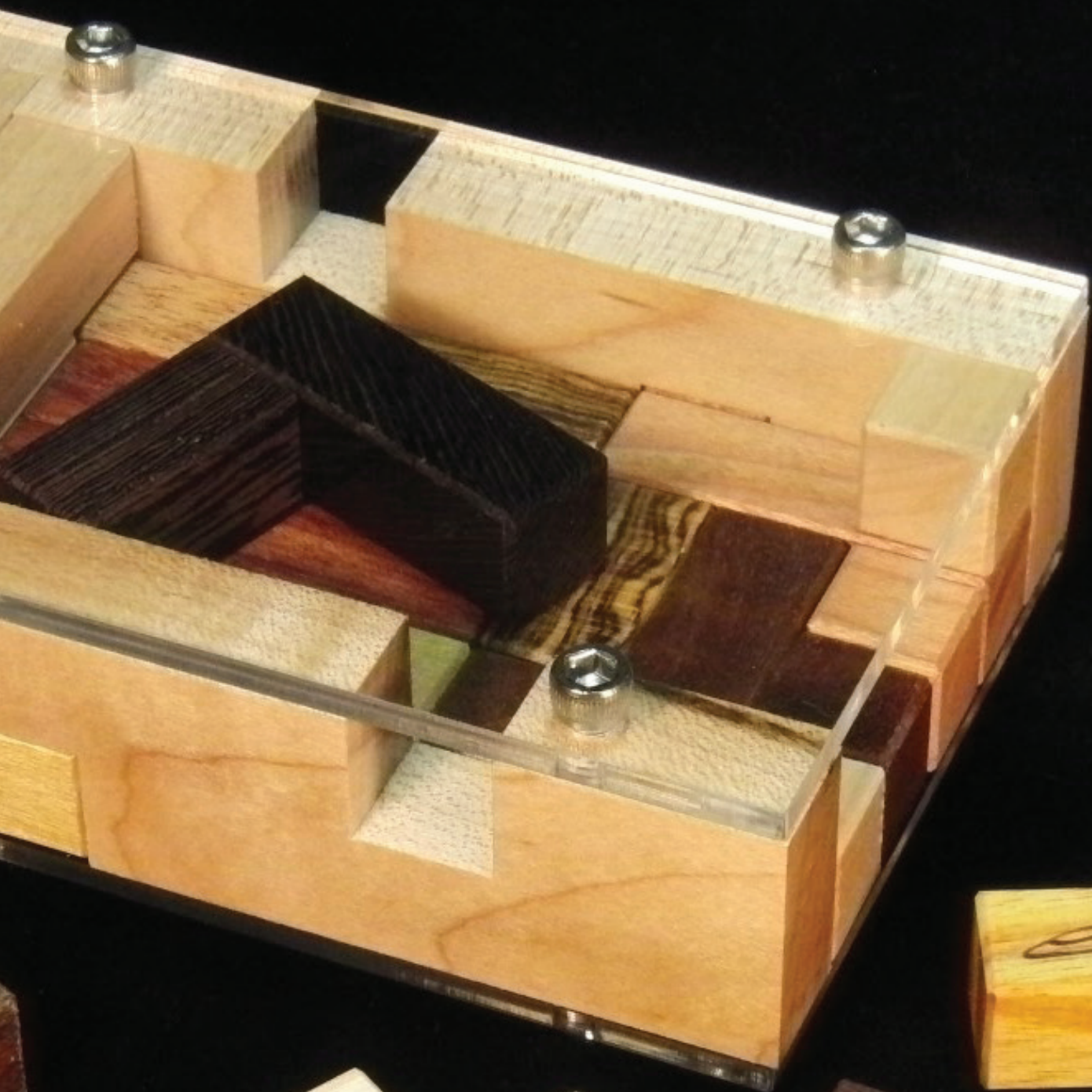
Keep your eyes peeled! And thank you for the opportunity for the interview.

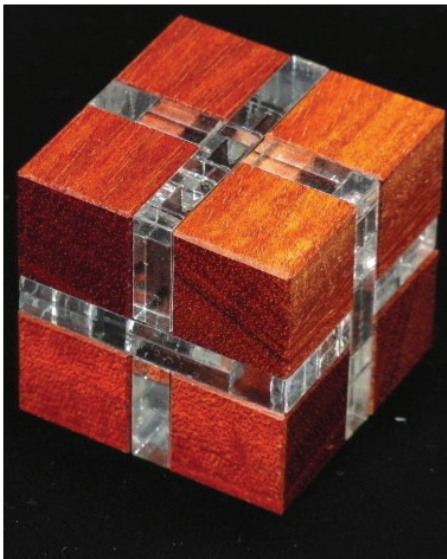
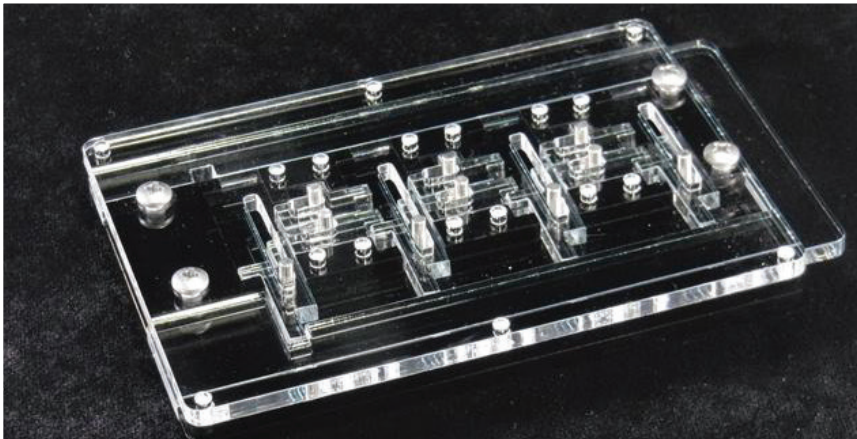
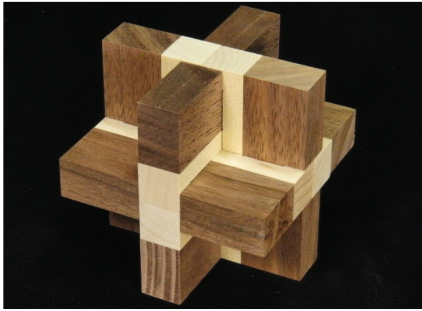
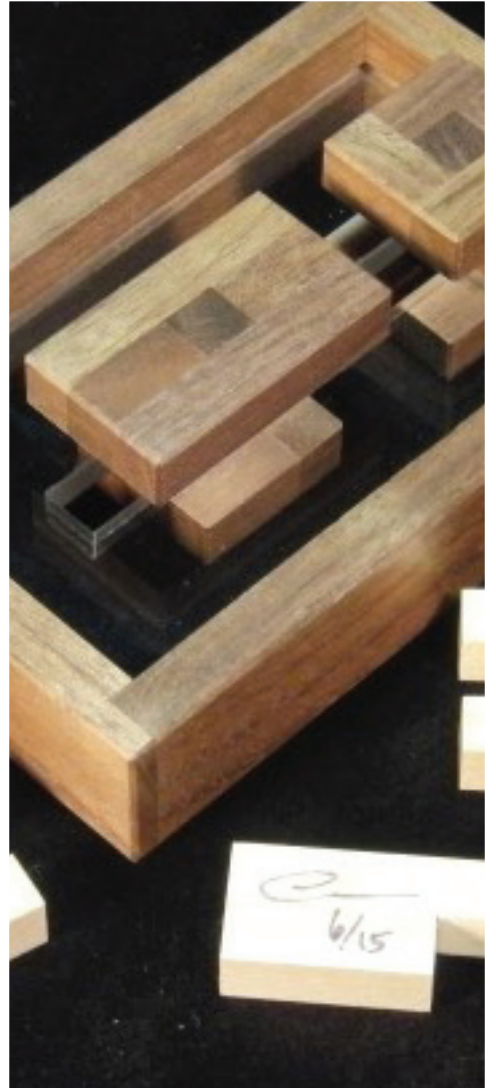
Eric's puzzle designs and those he produces for designers worldwide can be found at his website below.

<https://www.cubicdissection.com/>

Pocket Pento, Jerry Loo
| Designer







Irmo Puzzle Eric Fuller | Designer, **Boron** Donald Osselaer | Designer, **PACK 6** Eric Fuller | Designer, **Tern Key** Goh Pit Khiam | Designer

A-Pack Terry Smart | Designer, **Band Cube** William Hu | Designer, **Three Open Windows** Tom Jolly | Designer, **Framework II** Markus Götz | Designer

Begonia Yavuz Demirhan | Designer