2021 E-portfolio

A weaver's journey through time.

Elizabeth Tritthart of Historic Weaving

Contact Info:

Elizabeth Tritthart

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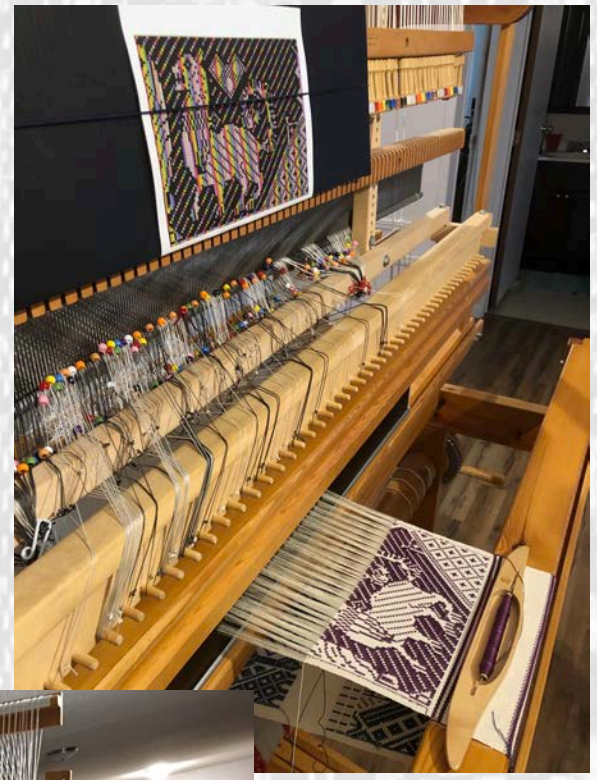
Introduction:

Elizabeth Tritthart holds degrees in Electronics Engineering and in Fine Arts - Studio Arts, as well as being certified in Computer Aided Weaving Design for Jacquard Looms. She equally enjoys the processes of research, design, weaving and teaching using modern technology and historic methods. Elizabeth has been researching weaving history and sharing her love of technology and handweaving with students and social media followers since moving to Montana in 1991



Artist Statement

Elizabeth Tritthart is the historic weaver behind Historic Weaving's, "Weave with me" educational outreach program. She collects and shares stories to increase public awareness of the connection between weaving and modern technology development.

Elizabeth researches weaving history, following the arc of weavers, inventors, and pattern development. Her design work involves transporting ageless motifs into a contemporary artist's conversation.

Ms. Tritthart's looms are in her Montana home, in this way she follows the traditions weavers of history. Before the Industrial Age most weavers wove on looms in homes, barns, sheds, lofts or attics.

Elizabeth weaves on both simple looms and complex looms, from inkle to Jacquard looms. Her large mechanical drawloom which requires no electricity is her primary loom. She also has been using computer interfaced looms since 1996.

As an artist, Elizabeth is interested in keeping information about hand weaving accessible to the public. She does this by focusing on public instruction as part of in adult continuing education programs in her area, and producing a mobile weaving studio in local Fiber Festivals and Art Fairs.

Elizabeth shares her research gleanings in the following locations:

Website: https://historicweaving.com

Business page: https://www.facebook.com/historicweaving

Studio Process blog with frequent updates: https://www.facebook.com/3heartart/

Historic Patterns

Title:Replica of 1856 Coverlet
Size: 108” x 84”
Structure:Overshot
Material: Cotton
Private Collection

Title:Hearts and Stars
Size: 36” x 6”
Structure:2 Tie Unit Weave
Material: Cotton

Title: Six Block Scarf
Size: 10” x 72”
Structure: Doubleweave
Material: Cotton
Private Collection

Contemporary Designs

Title: House of Encouragement
Size: 11” x 10”
Structure:Opphamta
Material: Silk

Title: Snowballs and Roses Band
Size: 108” x 11”
Structure: 2 Unit Block Weave
Material: Cotton

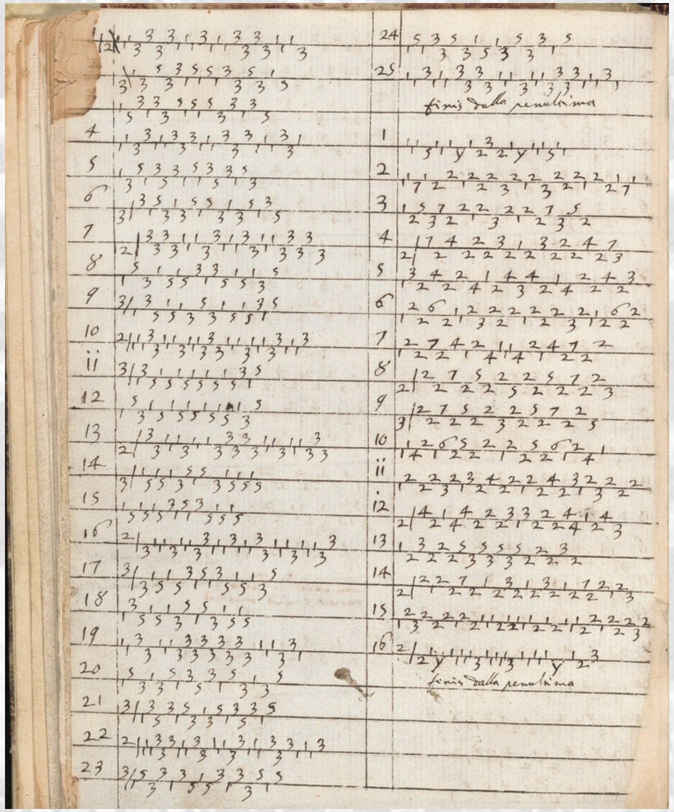
Title: Plum Blossom Throw
Size: 84” x 50”
Structure:24 Shaft Point Twill
Material: Cotton Printed on handwoven
Private Collection

Early Needlework Research

Name:		Pattern 1						
ROW 1	UP		3		3			
	Down	2		4				
ROW 2	UP		1		1		3	
	Down	1		3		2		1
ROW 3	UP	4		4				
	Down		2		2			
ROW 4	UP		3		1		1	
	Down	2		2		3		
ROW 5	UP		3		3			
	Down	3		2		1		

Exploration of the historical connections between embroidery and hand weaving patterns lead to the discovery of an unusual weaving draft notation identified as fractional notation in a needlework book published in 1529. Sampling using that notation resulted in my weaving of the snowball pattern to the left. Other weavers described the notation as being used for drawlooms. I found the notations a simple way to denote blocks for Opphamta weaving.

https://archive.org/details/Schnsperger15291529EinNewMET/page/n47/mode/2up



Historic Weaving

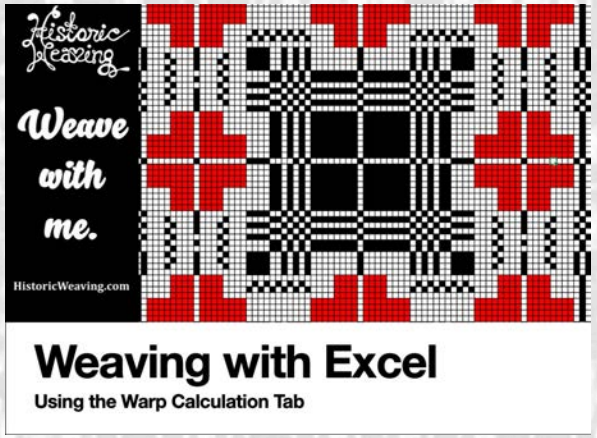
Opphamta

Title: 100 Horizontal Rows
Size: 8 ” x 11”
Structure: Opphamta
Material: Cotton

Title: Purple Hearts Square I
Size: 8” x 8”
Structure: Opphamta
Material: Cotton

Title: Irish Shamrock I
Size: 5” x7”
Structure: Opphamta
Material: Cotton

Weaving with Excel

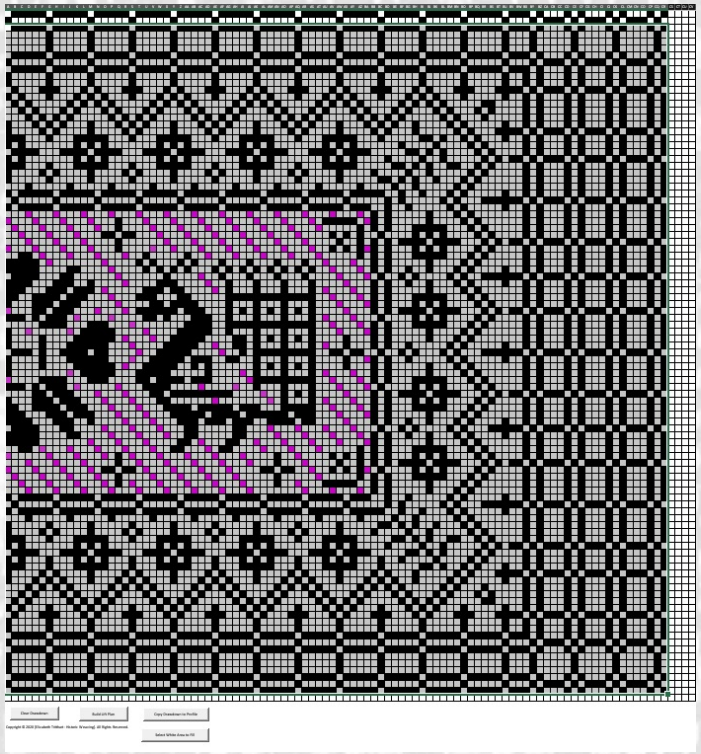


Spreadsheets for Warp Calculation that incorporate reed charts, common material combinations sett tables , table for standard project sizes by item types, material catalog for costs, and weaving overhead calculations guide a user to setting wholesale and retail pricing of handwoven goods produced. Users can use either Imperial or metric systems to perform calculations.

There are two types of spreadsheets, a Simplified calculator and a detail calculator permitting users to enter values they obtain after wet finishing to calculate shrinkage and waste.

Selected Warp									
20/2 Cotton									
3. My Weft Choice is :	55	<-------- Enter Key #							
Suggestions	Type Structure	Sett	Key						
20/2 Cotton	Plain Weave	30	54						
20/2 Cotton	Plain Weave	28	55						
20/2 Cotton	Twill	32	56						
4. Qty or Units to be woven:	3								
Sett Range	100% - Maximum - Plain Weave	41							
	90% - Firm - Upolstry - Plain Weave	37							
	80% - Production - Plain Weave	33							
	70% - Clothing - Plain Weave	29							
	65% - Woolens - Plain Weave	27							
	60% - Clothing - Plain Weave	25							
	50% - Delicate - Plain Weave	21							
	Twill	55							
	Satin	59							
5. Choose Sleying Density/Sett :									
Threads/Ends Per Inch (EPI)	24								
6. My Reed Choice									
Possible Reed Sizes	24 ,16 ,12 ,8 ,6 ,5								
Selected Reed	12			Calculate Sley Order		SLEY ORDER			
						2	2	2	2
Ends Without Waste	240	threads/ends							
Additional Ends for Waste	24	threads/ends							
Total Ends Required	264	threads/ends							
Width in Reed	11	inches							
7. Sample and Waste									
Planned Sample Length	12	inches							
Loom Waste	18	inches							
Take-up/Shrinakge as Percent	10%	Percent							
Length on Loom for Single Project	52.8	inches							
Calculated Warp Length	176.4	inches							
	4.90	yards							
Adjusted Warp Length	180	inches							
	5.00	yards							

Work in Progress:
Weaving with Excel – Design Tab



A purely mathematical approach to weaving design.

User can start with a profile draft and manipulate it using multiple structures to create a full threading draft. Symmetry can be controlled visually, there is no "tie-up", threading or treadling specified or assumed, the user is working directly with the drawdown to create the final design.
The software is capable of calculating the threading, treadling and tie-up needed to produce the pattern in the drawdown. It can output a .WIF file for looms that can support up to 100 shafts. It can also generate the lift plan needed for a drawloom.

This software was being created to allow me to emulate the drafting techniques used in early pattern books and weaving journals where many of the images in the documents are profile drafts.

Work in Progress:
Weaving with Excel – Design Tab cont'd

I have made use of Visual Basic for the macros so that the code would be open and visible to all. Current status of project - This is the software I have been using in the last year for designing my drafts for the drawloom and the 100 Shafts Project. I believe that it establishes a proof of concept for the type of software desired, and the logic that can be used to build it.

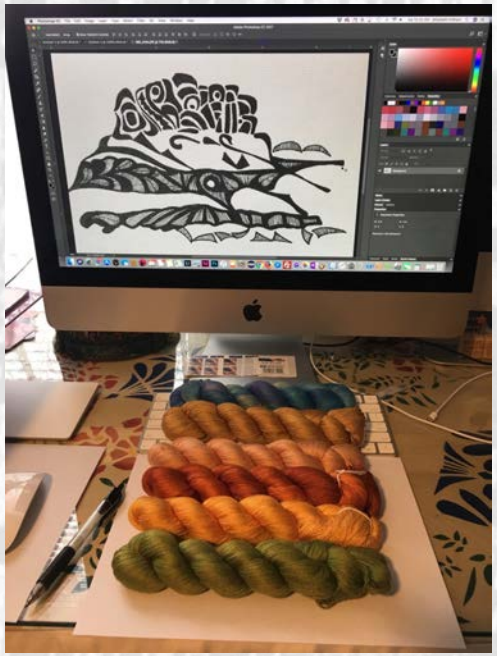
I have completed three courses in Excel and Visual Basic through University of Colorado Boulder in 2020 to work towards pursuing a Data Science certification which have given me better insight into how to build this code. I have also completed several online courses through Coursera.org for Data Science: Foundations using R Specialization offered through John Hopkins University also via Coursera.org

My design plans include the ability to import a .WIF file, or a BMP file and have the drawdown matrix auto populate in to an Excel worksheet for further manipulation.

Technical resume available here:
https://www.linkedin.com/in/etritthart/

Indeed.com profile:
https://my.indeed.com/p/elizabetht-heyaan4

Structural Imagery

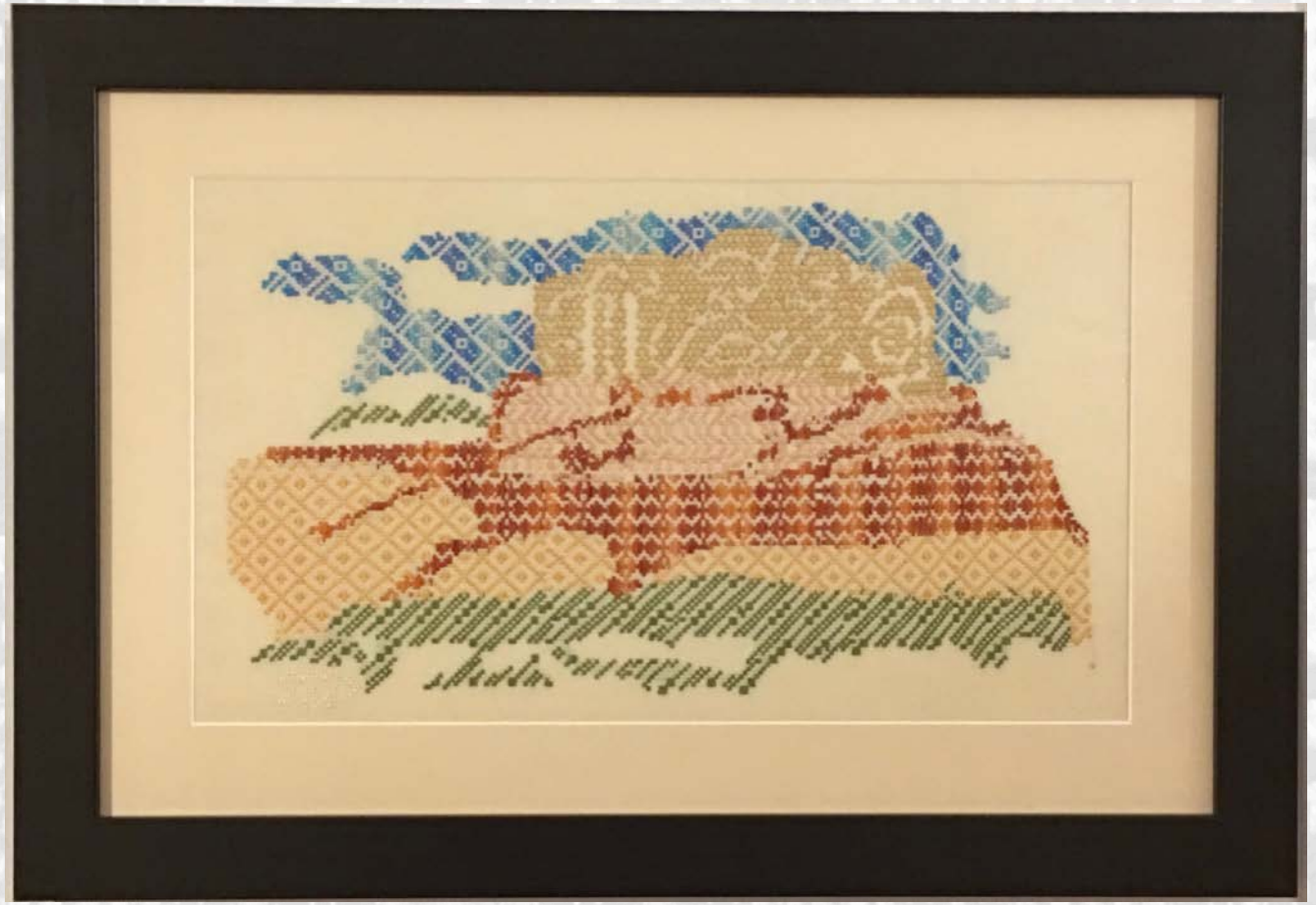


A project begins with a 4” x 6” pen and ink sketch. The image is digitized, and scaled for weaving. Colors are chosen for the image.

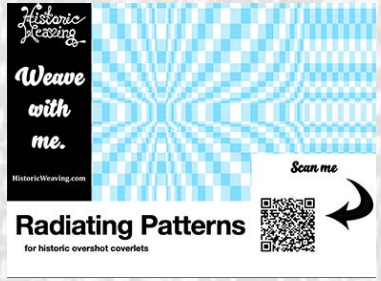
The image is woven on a drawloom by hand. Every change of color and structure is completed one row or block at a time.

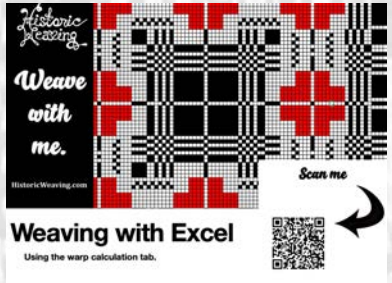
The weaving is completed with the front of the image facing down, the weaver can not see it unless using a mirror or camera. There are many color changes, bobbins or small shuttles are used for these.

The Mesa



Available Publications





Sample Presentations

Mary Meigs Atwater, A Montana Legend
Context rich picture of Montana and Mary's business exploits in the early 1900's. The story of how she helped to tame the Wild West, and preserved Handweaving for generations to come while supporting her children as a widow of a miner.

Weaving is Computing
There have been many suggestions of how weaving and computing are tied together, get the real scoop with this presentation. Learn where the binary terms 1 and 0 originated and see the original processor and its storage unit.

The Impact of the Gutenberg Press on Weaving
What was the first weaving book printed? Who was it written for? Where did the book travel to and how was it used after it got there? Who was influenced by it?

Sample Presentations cont'd

Luther Hooper and His Drawloom

Disturbed by the number of drawlooms that were being destroyed in favor of the Jacquard Loom. Luther set out to preserve knowledge of the drawloom before it was gone. He found a way to document the construction of the loom for a home weaver and provided a series of lessons on learning to design with it. Learn about his life and times, and the weavers who followed in his footsteps.

Weavers of the early 1900's

The Progressive Era, was a formative time for weavers in the United States. Learn who these weavers were and how they contributed to advances modern hand weaving and technology. See how they faced discrimination in education, war, and economic adversity to open doors for others.

ELIZABETH TRITTHART

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eliz@historicweaving.com

Artistic Career Overview

I have always counted myself as an artist and a musician long after I had earned my engineering degree because my love of art came first. I have been proficient in most fiber arts since my early years thanks to having a parent and four designing women of my grandmother's generation as early life examples of what magic could be accomplished with a needles (crochet and knitting), scissors and a sewing machine. My secret passion was to start my day with Art, courtesy of a kind Art teacher who opened the studio early for me each day to come in and play.

After a serious car accident and a move to Montana for long term recovery, I took up the art of weaving in 1991. I have been attending classes, reading and performing my own experiments in my studio as well. I have learned that I am truly a damask weaver as complex twill structures are in my bones as much as the desire to create a beautiful scene. I completed my masters certification in Jacquard weaving in Lisio in Florence, Italy. In my studio I have a large drawloom and a computer dobby loom as my main looms.

Qualifications

Expert in Computer Aided Drafting using, Weavepoint, Fiberworks, PointCarre, Weavemaker, and Photoshop

Expert in Photoshop and Illustrator.

Avid researcher of weaving history, able to search via the Internet or the card catalogue

Skilled in relief, intaglio and pochoir printmaking

Accomplishments

Completed an independent international study of Art History in Florence, Italy in 2006. During this time I studied fabrics that were in famous paintings to determine if they were current fabrics of the time or things that were made up as the artist painted the portrait. I used my free time to investigate as many museums and historic buildings as I could to locate samples for my research. My findings, most of the fabrics in these paintings where of current manufacture. As a weaver I also sought to locate examples of the drafts that would have been used to create these fabrics.

After completing a reproduction of a 1830's king size overshot coverlet. I used the remained of the warp to create several "blank" coverlet bases that I would later use for pochoir printing, as I found in my college studies, that printing as a medium also spoke to my passions.

Current accomplishments involve structural imagery using a drawloom. I am leveraging my illustration skills, my computer software knowledge for graphic manipulation and producing new drafts that can be woven by hand to create recognizable images.

Education and Training

Bachelor of Science: Electronics Engineering Technology Minor in Industrial Engineering
1979
The College of New Jersey
GPA: 3.0
Electronics Engineering Technology

Bachelor of Fine Arts - Studio Arts
2006
Montana State University
GPA: 3.92

Certification in Jacquard Weaving and Computer Aided Design,
Foundazione Arte della Seta Lisio
Florence, Italy
2006

Biography

Elizabeth Tritthart is a multi-certified professional capable of high achievement in both the technical and artistic spheres. She began her college career earning a Bachelor of Science degree from The College of New Jersey for Electronics Engineering Technology, and in 2006 completed a Bachelor of Fine Arts - Studio Arts from Montana State University. She also earned a certification in Jacquard Weaving and Computer Aided Design from Foundazione Arte della Seta Lisio in Florence, Italy that same year.

Elizabeth Tritthart has been a leader in the software industry for 40 years in providing customer facing technical support for research and development software development teams. At present, she is working on a career transition to a full time artist after completing her Montana Artreprenuer Program certification.

Elizabeth weaves on both a drawloom and a computerized dobby loom in her Bozeman, Montana studio. She is proficient in a large range of software applications that are used in creating both art and software development. As an artist, she is researching the capabilities of the drawloom to create structural imagery.

Biography cont'd

Elizabeth began weaving in 1991 shortly after moving to Montana, she began her weaving studies using an 8 shaft table loom and progressed quickly to a 24 shaft computer dobby loom and ultimately to the artistic freedom offered by a 100 shaft loom. Her long term goal has been to paint with fiber using complex structures as a base for her pictures. She has completed several experimental pieces, the latest being the Mesa project in which she began the project with a hand drawn realistic sketch, abstracted the image, digitized it with a computer, Photoshop to create draft image that contained seven different structures and colors and wove the final image on a drawloom that has no computer interface.

In 2016, Elizabeth began a speaking program in which she is bringing stories about weavers , looms and weaving history to the public to increase awareness of the unique history that weaving and weavers have. Elizabeth is concerned about keeping weaving history alive and to preserve the connection between weavers, looms and finished pieces.

Elizabeth does in-depth research of weavers and their historical context. For example, in telling the story of Mary Meigs Atwater, it is necessary to paint a picture of Montana and the United States in the era from World War I through World War II. She attempts to provide an understanding of the motivation and the character of the weaver as well as their technical achievements.

Biography cont'd

Elizabeth Tritthart has been weaving and researching weaving history since moving to Montana in 1991. Her online store and research gleanings can be found at https://historicweaving.com and her weaving progress blog is https://www.facebook.com/historicweaving.