This class is an introduction to traditional Japanese woodblock printing for contemporary artists. Each person will cut and print an edition of color prints to learn about this non-toxic technique. *Mokuhanga* provides precise registration and great control over color and a connection to an important chapter in the history of printmaking. We will cut blocks during the first half of class and print during the second half. Each class will begin with a discussion of a different aspect of Japanese woodblock.

**Historical Background:** 18th century Ukiyo-e (“pictures of the floating world”) prints by masters like Hokusai, Hiroshige, and Utamaro, were created using the technique of *mokuhanga*. *Hanga* means printing, and *moku* specifies wood. The development of this refined color printing is tied to the rise of popular culture in Edo Japan, where prints were made by groups of skilled craftsmen for popular consumption.

**Overview of Materials:** types of wood, handmade paper, cutting tools, sharpening stones, application brushes, baren, color. We will review a list of suppliers offering various Japanese tools, papers and other supplies.

**Planning a Color Print:** conception, color separation, methods for transferring a drawing and registration information to the block, including the ukiyo-e method of hanshita/kyogo (preliminary prints on thin paper glued to the block) and other transfer methods using carbon paper and solvents.

**Kento Registration:** planning and cutting, use of the kentonomi chisel, kagi and hikitsuke registration cuts.

**Cutting Tools:** the hangi-to knife, the small aisuki and large soainomi rounded chisels, and the V and U-gouges. We will review traditional Japanese cutting sequence, outlining with the hangi-toh, clearing with the U gouge, smoothing with the soainomi, and finishing with the aisuki, including a demonstration of sharpening these tools using Japanese water stones.

**Block Cutting:** the difference between cutting blocks for oilbase printing and waterbase printing; registering color blocks for multi-block printing, reduction and double reduction block printing.

**Washi:** traditional Japanese paper has its own craft tradition and history. Made from kozo, mitsumata or gampi this long-fibered paper withstands repeated printing while damp. The quality of paper is an important part of a finished print, and each paper shows its character distinctly in printing.

**Printing with the Baren:** the varieties of this hand printing tool and how they are made is another Japanese craft tradition. Posture and balance, placement of tools and equipment for maximum efficiency in printing.

**Color:** use of watercolor, gouache and sumi ink; making color from pigment, binder, and additives. Paste (rice starch paste) helps with the smooth printing of flat areas of color.

**Application brushes:** various types and sizes of deer and horse hair brushes for printing different size color areas.

**Special Printing Techniques:** color overprinting, textural *goma* printing and color gradation *bokashi* printing.

**Closing Discussion:** the relation of eastern and western approaches to woodcut, the elements of art and craft that make a good print, the meaning of original in the context of printmaking, and the place of hand made prints in the age of computer reproduction.
April Vollmer

**SOURCES FOR MATERIALS:**

**McClain’s,**
P.O. Box 40163
Portland, Oregon
97240-0163

Call 800-832-4264 to request their informative catalogue (also online); materials specifically for hanga woodcut, Japanese tools, brushes, paper, shina plywood. Recommended: 6 mm hangi-to (left or right handed Japanese knife); 6 mm aisuki (fan-beveled chisel), and medium and large u-gouges (various sizes and prices); kentonomi or 15 mm chisel for cutting registration, [www.imcclains.com](http://www.imcclains.com)

**Hida Tool & Hardware, Berkeley**

[www.hidatool.com](http://www.hidatool.com)
800-443-5512

Carry the Power Grip knife set, also individual tools (6 mm skew and 7.5 mm u-gouge most useful); Murasaki baren.

**Lee Valley Tools**
1-800-871-8158

Also carried Power Grip Japanese Carving Tools (recommended 5-tool set #44D10.05) and sharpening stones

**Japan Woodworker**
800-537-7820

Power Grip 5-tool set, other Japanese tools and good selection of sharpening stones; a1200/8000 (medium/fine) waterstone is useful

**Guerra Paint & Pigments**
[www.guerrapaint.com](http://www.guerrapaint.com)
212-529-0628
510 East 13th Street (bet A & B)
NYC 10009

Pigment dispersions in water for making watercolor and gouache. Useful: cobalt blue, quinacridone gold, hansa yellow, chromium green, quinacridone red, earth pigments. (Sumi ink preferred for black); Gum arabic or nikawa animal hide glue can be added to pigment dispersion as binder

**Talas:**
[www.talasonline.com](http://www.talasonline.com)
Brushes for dampening paper, acid free tape, bookbinding and library supplies.

**New York Central Art Supplies**
62 Third Ave.
NYC 10003
(212) 473-7705
Excellent paper supplier, look for sized Japanese kozo paper (washi), they carry many of Hiromi’s papers

**Hiromi Paper International**
310-998-0098
2525 Michigan Ave.
Bergamot Station G9,
Santa Monica, CA 90404

Japanese paper importer, informative catalogue. www.hiromipaper.com

**The Japanese Paper Place**
www.japonesepaperplace.com

In Toronto, very knowledgeable, they are wholesalers, dealing in quantity paper; ask about sized papers for woodcut.

**Paper Connection International**
www.paperconnection.com

Providence, RI. Carries a wide variety of Japanese paper.
April Vollmer
Useful Vocabulary: Japanese Woodblock Printmaking

MOKUHANGA
Moku means wood, and hanga can be translated as printing, mokuhanga was the default printing technique of Japan during the Edo period. Ukiyo-e is generally translated as “pictures of the floating world.” The sophisticated multi-color prints made by groups of master craftsmen during the Edo Period (1603 to 1867) were printed using the mokuhanga technique.

BAREN the traditional Japanese printing tool
The shin is the inner coil of the baren, made from thin strips of bamboo sheath twisted together in strands, which are again twisted into a long cord. The cord is coiled and tacked together with fine string and placed in the ategawa, a 5” round, shallow backing disk made from layers of washi. The two parts are wrapped with a bamboo sheath called the takenokawa, which holds them together. Baren varieties include the Kurosaki disk baren (all plastic, white), the Yoshida baren (plastic shin, wood ategawa), Murasaki Baren (synthetic cord shin), the ball bearing baren, and the hon baren (true baren), with a washi ategawa and bamboo sheath shin.

KENTO registration marks cut into the block at the depth of a sheet of paper line up the paper on successive color blocks. Kagi kento is the right angle cut in the lower right hand corner of the block, the Hikitsuke kento is the straight line cut on the long side of the block. Kento marks are always cut on the long side of the block so paper is held more easily for placement.

TECHNIQUES:
Tsubushi, uniform printing. The larger the area, the more difficult it is to print evenly
Bokashi, gradation printing. A thin strip of color is brushed out into an adjacent moistened area, o-bokashi is a large, wide gradation, requiring several steps and some skill, baren bokashi is gradation created by applying more baren pressure in some areas, ita bokashi is graduation created by cutting a soft beveled edge in the wood block.
Kara Zuri, blind embossing, means printing with more pressure and no color.
Kira Zuri, adding mica to wet color or areas of glue stenciled on the print.
Baren-suji, marks from the baren, swirling strokes (an error)
Goma Zuri, sesame seed printing, more water in proportion to paste makes this texture

CUTTING TOOLS
Toh or skew knife, for cutting all edges of color areas at a bevel, the tool comes in right and left-handed versions
Aisuki, a small fan-beveled chisel, a Japanese tool, similar to the western bull nose chisel, but with the cutting edge fanned out, useful for clearing waste from the hangi-to line
Soai Nomi, long handled version of aisuki for smoothing gouge marks, can be used with a mallet
Kentonomi, 15 mm chisel, used for cutting the kento marks and beveling block edges
Komasuki, a U-gouge, similar to the western tools, useful in many sizes
Sankaku To is a V-gouge, same as western, not in the traditional Japanese toolbox

MORE
Hanshita the initial drawing on thin gampi paper, glued face down on the block for cutting
Kyogo copies of key block, printed with registration marks, glued face down on color blocks
Sumi ink black Asian calligraphy ink, made from soot with animal glue as binder
Tokibo carrying brush, in Japan these can be made from scraps of takenokawa
Mizu-Bake wide water brush for dampening paper
Dosa-Bake paper sizing brush,
Dosa is a solution of alum (myoban) and animal glue (nikawa) for sizing paper
Suri-dai printing table, tilted slightly away from the printer
Nori rice starch paste is used for even printing (tsubushi)
Washi means Japanese handmade paper, wa for Japanese and shi meaning paper. Washi for Japanese woodblock printing is generally lightly sized so color does not bleed, and paper will not stick to the block. It is traditionally surface sized by brushing on a thin mixture of animal hide glue and alum on both sides. Western paper is usually sized in the vat.

Washi is made from kozo, gampi and mitsumata fibers. Kozo fiber is the inner bark of the paper mulberry, broussentia papyrifera, and is preferred for mokuhanga. Gampi (wikstroemia) and Mitsumata (edgeworthia chrysantha) are also used in papermaking, they are bitter, insect resistant, crisp in texture. (These thin, strong papers are often used for chine colle in the west.) After harvesting, branches are steamed to soften the bark so it can be stripped off, separating the dark outer layer of the bark from the white inner fiber. The white fiber mass is cooked in lye and then mixed with a forming agent made from the roots of the tororo-aoi, a species of hibiscus. This is added to increase the viscosity of the slurry, so the fiber mix flows more slowly through the screen. Tororo-aoi root (which had to be used fresh) has now been replaced by a synthetic substitute. The fiber mixture is scooped up in a su, a screen with a detachable bottom, made of finely split bamboo. It is lifted from the paper vat twice, and shaken east-west, then north-south to line up the fibers. Couching does not require blankets between sheets because the fibers are long and adhere sideways, they do not stick to the sheet above. After water has been pressed from the stack, individual sheets are separated and left to dry on boards in the sun. Finally, the paper is carefully sized with a special dosa brush so that it will not be overly absorbent during printing.

Washi was made all over Japan for every purpose until WWII. Now, like hanga woodcut itself, it is a dying craft because it is so labor intensive. Formerly integrated with everyday life, it was made by farmers in winter, while they were not busy with crops. Taxes in the form of paper were paid to the central government. After the tax paper was made, the remaining dirty fibers (Chiri) were put into the vat to make paper for the farmer’s own use.

Dimensional stability is essential to mokuhanga. Hand beating the paper fiber leaves a greater number of whole fibers, so the paper absorbs less water and does not stretch when wet. Washi retains its strength when damp, which is important as considerable pressure is exerted by the baren during printing. Although washi has less grain than western papers, for best registration the grain of the wood and the grain of the paper should both run parallel to the LONG dimension of the print.

Early ukiyo-e prints were printed with fugitive dyes, later ones with brighter and longer lasting imported coal tar dyes. Lightfast pigment dispersions can be used. Dyes soak into the fiber, pigments adhere to the outside of the fiber. Generally dyes can give richer color, but pigments will be more stable and long lasting. The distinction is not absolute, for example pthalo pigments act like a dye, penetrating into the fiber, but are quite permanent.

The deckle edge (called ‘ears’) is usually cut off in Japan, and is not considered part of the finished paper product. The deckle interferes with the kento registration. Because paper was expensive, the size of a print was determined by the size of the whole sheet of paper, cut into halves, quarters or thirds.

Kozo fiber is also grown in Thailand. Because of the tropical climate plants grow more quickly, and the fiber is coarser, giving the paper made from Thai kozo (in Thailand or Japan) has a different character. Timothy Barrett, a US expert on paper, has grown paper mulberry and made paper on the Japanese model in the US. Although there are fewer papermakers in Japan now than ever before, it is easier to locate suppliers.
purchase washi, be sure to let the seller know it is for Japanese woodcut printing, which is best done on lightly sized paper. Generally, the higher the kozo content and the higher the price of the paper, the more satisfactory it will be for printing.
April Vollmer
Hanga Woodcut BIBLIOGRAPHY


Lane, Richard. *Images from the Floating World*, Putnam.


And [http://www.uhpress.hawaii.edu](http://www.uhpress.hawaii.edu) (McClain’s carries this book)


Yoshida, Hiroshi, *Japanese Wood-block Printing* can be purchased at:
http://mokuhankan.com/catalogue/0008.shtml

[http://www.barenforum.org/](http://www.barenforum.org/) David Bull’s site with information about sources, techniques and out of copyright books to download
[http://learningobjects_devel.wesleyan.edu/blockprinting/](http://learningobjects_devel.wesleyan.edu/blockprinting/) Keji Shinohara’s web printing demo
http://www.handprint.com/HP/WCL/pigmt1.html#pigments information about pigments
BLADE MARKS ON BLOCK

CROSS SECTION OF BLADES

1. Tō (hangi-tō).
2. Aisuki (narrow).
3. Aisuki (bread).
4. Sōainomi.
5. Marunomi.
6. Komasuki
7. Sankakutō
8. Kentōnomi.

Arrangement of the printing stand and equipment.

1. Maebako.
3. Mizubake.
4. Yoko-ita.
5. Paste container.
6. Block cushion.
7. Paper before printing.
8. Paper after printing.
10. Yokobako.
12. Pigment container.
13. Tokibō.
14. Žokin (rag).
15. Oil container.
18. Cushion.