Sustainable Floral Design:

CURRICULUM AND PROJECTS

MISSISSIPPI STATE UNIVERSITY™
EXTENSION

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Table of Contents

Introduction, Opportunities, and Approaches

Flowers are used to communicate thoughts and emotions that are difficult to put into words. Before the days of commercial floriculture production, flowers and ornamental foliage were harvested from the wild, gathered, and formed into bouquets, wreaths, and garlands. Today, consumers think of flowers as a natural gift and a way of bringing the outdoors inside. Flowers bring color and life to rooms, frame special occasions such as weddings and graduation exercises, and console people in difficult times.

As the world becomes more eco-conscious, consumers will demand floral products that are earth-friendly. This demand can enable florists to market an aspect aof flowers that is not often discussed. Part of flowers' value is their ability to fade, leaving minimal physical impacts. In a material world, giving and receiving a gift that commemorates occasions, then disappears over time, should be seen as a great benefit.

Many of the practices associated with commercial floral design involve products that increase floral longevity and decrease labor. Worldwide, florists and floral consumers are concerned about the effects of commercial floristry, including its products and practices, on the environment. Modern floristry relies on a variety of plastic products to wrap, contain, and arrange flowers. Increased use of plastics has led to an enormous amount of plastic litter in the oceans. Phenolic resin floral foam is not biodegradable and can be ingested by aquatic animals.

The Royal Horticultural Society (RHS) banned phenolic floral foams at both the RHS Chelsea Flower Show and the RHS Hampton Court Palace Flower Festival, announced in January 2020 and put into effect for the 2021 show. This rule opened the eyes of many floral design enthusiasts worldwide.

Floral foams and floristry plastics are important to the production, longevity, and sales of floral products. They will continue to be used, but it is possible to use less floral foam.

This curriculum uses the three Rs (reduce, reuse, and recycle) as an approach for teaching and learning floral design. The most efficient ways to save natural resources, protect the environment, and save money are found in reducing and reusing products. Recycling involves collecting and processing materials that would be discarded and composing them into new products. Making a new product requires extracting raw products from the earth. It also requires energy to manufacture and transport it. Reducing the number of products used and reusing them saves natural resources, protects the environment, and saves money.

Opportunities for Teaching and Learning

Opposition to sustainable floral design practices is expected. Industry members have habits built from many years of best practices. The challenge of sustainable floristry should not be seen as a burden; rather, it should be viewed as a great opportunity for refreshed teaching and learning.

Teaching can be organized around the three Rs, giving instructors the opportunity to vary the ways they design with flowers. New methods can bring about innovations in techniques and products. Instead of using products that have remained unchanged for decades, teachers and students can develop new ideas for products, methods, and techniques.

Making the choice to delve into sustainable floristry involves keeping an open mind to doing things differently and fixing the flaws along the way. Initial attempts at mechanics or plant material choices can always be improved upon in the floral design studio or classroom—places of trial-and-error practice. This is part of the beauty of floral design education versus on-the-job training, where there is little room for error.

A key component of any sustainable floristry curriculum is to help learners see the benefits of change and weigh the potential for positive outcomes. Sustainable floristry education helps learners understand why the environment is important, how they can help to care for it, and that they are essential to its existence.

Sustainable practices provide the floral industry with opportunities to highlight the fresh floral side of floral design and its earth-friendliness. Much of sustainable floristry is being developed now by florists who have identified that the new generation of students will want to pursue a cleaner direction. We invite our teaching colleagues to be a part of this future.

Approaches in the Classroom

Floristry sustainability can be measured on a sliding scale. Many schools are already doing this and do not realize it. For example, rather than eradicating floral foam from the curriculum, just use less. Teaching students to create a fresh arrangement in a reusable glass vase is sustainable, while a single-use plastic bowl with fresh floral foam is not. Another simple idea is to require students to bring their "studio container" back to class every week. In this way, what might have been a single-use plastic now has a longer lifespan.

As teachers, it will be challenging for our studios to be consistently highly sustainable, but it is possible to be greener in the floral design classroom—and to train our students to pursue new methods and invent new products that save time and money, and suppress plastic pollution.

Here are some approaches to sustainability to consider:

- Teach students to buy and/or sell flowers. They are natural and compostable. Retailers may make more money selling flowers than gifts and accessories that have a lower markup. Often, cut flowers are marked up three times their cost, while gift items have a 2:1 markup. When floral customers shop, they intend to express their sentiments with flowers rather than hard goods. Encourage students to steer customers toward flowers.
- Think about floral design construction in the days before plastics. Many of the materials our predecessors used were fully compostable and sourced nearby out of necessity. They included moss, wood, sawdust, foliage, and other, locally produced materials.
- Help students identify supply products used in floristry, from those that are fully compostable to plastics. An important part of their learning is that they can observe the floral designs they create after the design activity. How did each flower perform during display? Did any of the materials remain beautiful and useable over longer periods of time?
- Make the time to compost floral green waste. Your floral design studio creates loads of valuable green waste consisting of foliage, stems, and petals. Learn the ins and outs of composting and use it to your advantage.
- Grow some of your own floral materials. Often, there is space near the floral studio or your home to grow plant materials for cutting. It may not be feasible to grow cut flowers, which can be difficult considering irrigation needs, pest infestations, and disease. But you might consider growing foliage that can be cut and used in your designs. Plant materials vary according to your U.S. Department of Agriculture (USDA) plant-hardiness zone, so dig into your state's Extension website for information. Also consider growing your own floral design mechanics (flexible stems, vines) rather than purchasing imports. You may want to begin with evergreens, corkscrew willow, grapevine, birch, holly, and simple-to-grow cut flowers such as zinnias, marigolds, sunflowers, and lilies. Consider growing deciduous materials such as quince, cherry, pussy willow, and forsythia if your climate allows. Invest in woody plants and perennials as early in your teaching career as possible because it can take 3–5 years for a plant to mature to a size that will yield cut material.
- Select containers that will be used many times by the student. For example, workshop participants are more likely to reuse a good-quality glass cube vase than an inexpensive, outdated plastic bowl. Teach students to encourage their floral consumers to return their containers to their shops in exchange for a stem of flowers or a percentage discount on an immediate purchase.

- Make conscious decisions about using less plastic wrap. Recycle plastic sleeves when possible—use them as packing material and to protect flowers to wear/carry designs during refrigeration and transport.

If you use all or part of this curriculum, we value hearing from you. Please email j.delprince@msstate.edu and let us know your thoughts.

Our Sustainable Floral Design Projects Curriculum

This curriculum arose from the August 2022 Celebrate/Elevate/Educate Floral Design Teaching: Sustainability short course sponsored by Mississippi State University Extension. Presentations were made by James DelPrince, PhD, CFD, AIFD; Elizabeth Englebretson, MA; Cole Etheredge, PhD, CFD; and Hitomi Gilliam, CFD, AIFD.

The purpose of this short course was to expand participant knowledge and practices in sustainable floristry. In a blended academic and industry program, floristry teachers gained knowledge in pre-plastics floristry history, consumer perceptions of floral products, green floristry practices including composting, excessive plastic use, sustainable floral design systems classification, plastic product alternatives, sustainable floristry practice theory, and green burial practices. We coordinated these approaches based on our expertise and what we felt were floristry teachers' educational needs.

Previous Celebrate/Elevate/Educate Floral Design Teaching short courses were held in 2019 and 2020. During those programs, the need for sustainability education arose. In our 2022 short course, faculty and student discussions revealed a need for academic content with practical project ideas appropriate for adult learners in colleges, universities, and floral design studios.

This curriculum provides an overview of the topics covered in our short course and a list of suggested floral design projects and objectives to help others teach and learn sustainable floral design theory and practice. We hope to expand upon this curriculum in the future, introducing sustainable floral design theory and practical applications to shops and studios through a variety of methods—from single workshops to multilevel certificate and degree programs.

Several short course students agreed to help with design ideas and manuscript editing, and their names are listed as authors. We are grateful for their work and support. We encourage you to adapt the projects to suit your learners' needs.

About Sustainable Floral Design

Sustainable floral design is a new approach to the process of sourcing and designing with flowers. The floral industry is in the early stages of defining, developing, marketing, and selling sustainable products. First, let's review some definitions to aid in understanding. The USDA provides this broad definition of sustainable agriculture.

LEGAL DEFINITION OF SUSTAINABLE AGRICULTURE

The term "sustainable agriculture" (*U.S. Code Title 7, Section 3103*) is an integrated system of plant and animal production practices having a site-specific application that will over the long-term:

- Satisfy human food and fiber needs.
- Enhance environmental quality and the natural resource based upon which the agriculture economy depends.
- Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
- Sustain the economic viability of farm operations.
- Enhance the quality of life for farmers and society as a whole.

In the larger realm of sustainability, the *U.S. Environmental Protection Agency provides insight*:

> *Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. To pursue sustainability*

is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations.

We developed this definition based on our research, learning, and discussions:

Sustainable floral design exists on a continuum from 100 percent non-compostable to 100 percent compostable products.

What makes a floral design sustainable? Students should be ready to analyze design components, mechanics, techniques, and design use/display. We feel that the best approach to teaching sustainability is to invite students to inquire about the topic. This involves—

- defining and understanding sustainability—for the planet, nation, community, business, and home.
- learning about microplastics—their manufacturing, proliferation, and effects on the environment.
- accepting present changes in floral design materials and methods.
- creating new changes in materials and methods.
- developing marketing approaches and messages.
- unleashing creativity.

Let's think about some characteristics of sustainable floral design. Our teacher participants characterized sustainable floral design with these words/phrases. This is a good exercise for you to do with your students, too.

- *beautiful*
- *compostable*
- *desirable*
- *earth-friendly*
- *fair treatment of farm workers*
- *generates new products for production and value-added products*
- *green*
- *meets consumer needs*
- *minimal plastics*
- *natural*
- *practical*
- *profitable*
- *recyclable*
- *reduced material inputs*
- *reusable*
- *suited for micro to small businesses*

There are many terms associated with sustainable floral design. For more information, see the Sustainability Terms at the end of this curriculum.

Mechanics Before Plastics

James M. DelPrince

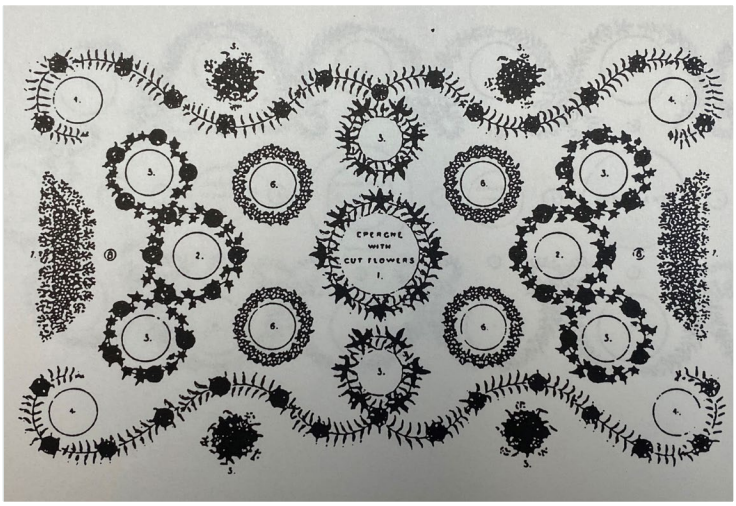
Floral design practice existed long before the development of plastics technology in the mid-20th century. By examining the products and practices used before plastics, today's floral design teachers and students can gain a historical perspective and learn concepts to create current floral arrangements.

The mid-19th century European upper class's transition from the French to the Russian method of banqueting created newfound space in the center of the dining room table. This space was a stage for decoration and began the proliferation of table centerpieces. Where meat platters and vegetable dishes took up space on the table before, the à la russe service required a servant to hold the platter while guests used utensils to serve themselves. The serving platters were then removed to the kitchen or a sideboard, freeing up the middle space of the dining room table. Decoration was an integral part of the 19th century aesthetic and its multiple design movements; therefore, dining tables were kept fashionable with the use of ornamentation, including flowers. The ability to combine entertainment and flowers during the early days of conspicuous consumption led to the modern florist industry.

In 1861, the Royal Horticultural Society sponsored a floral design competition with the objective of finding the most beautiful table decoration. Thomas March and his sisters won the competition. They designed a three-part stand consisting of two plates connected by a glass rod. The mechanics of the design involved a fist-sized ball of clay and sand. March went on to publish Fruit and Flower Decoration in 1862, a good way of promoting his product among the elite. It included a comprehensive list of plant materials suited to clay and sand mechanics.

Pre-plastic floral design and floristry heavily relied upon whole-plant decoration. The vegetative design in this example used two pans connected by a metal rod. The centerpiece was kept in the conservatory for production, then moved to the dining room and accented with cut flowers for events.

Seated dining events sometimes also relied on intricate relief patterns such as this example, using variegated Ligustrum japonicum 'Variegatum', along with potted plants and an epergne with cut flowers. Fresh fruit, the most prized of the estate, also lent color and pattern to the pre-plastic table. Estate staff would arrange the plant materials on the tabletop in order from largest and most durable all the way down to the most delicate. About 1 hour before seating, the final touches of leaves, stems, and vines were placed on the cloth-covered table to ensure freshness for the initial reveal.



Some authors noted the use of fruit not only as decoration, but also as containers. Novelty floral designs used melon as the mechanic, container, and moisture source. In this example, we found a halved *Citrullus lanatus* (watermelon) kept an acceptable appearance for 48 hours. Horticulturists also noted that plant parts could be used as a moisture source during transportation—flowers and branches found on a countryside trip could be kept fresh and turgid by impaling the stems into a potato.

Cleveland, Ohio, retailer Ella Grant Campbell was a pioneer in U.S. floral design education. In her 1888 publication, she instructed retailers on floral design styles and materials necessary to complete them. Mechanics in early professional floral designs used clumps of dampened moss fastened with string or wire to wooden laths. Importantly, they relied on materials that were in abundance in their immediate vicinity. Sawdust from sawmills, pine needles from nearby evergreen forests, and straw from farms supplied them with the media for design.

IN THE CLASSROOM

A pathway for our students to adopt sustainable practices can be found in enabling them to study the floral industry before plastics. Teaching and learning with early floral industry materials fosters creativity and can lead to helpful practices. Teachers can easily integrate early design mechanics into project plans and encourage students to create contemporary projects.

Assessing Floral Products: What Do We Use?

Hitomi Gilliam

RETAIL

Selling sustainably grown flowers and value-added products begins with identifying the products sold by *retailers*. Cut flower stems and bouquets, arrangements, plants, and other florist products may or may not fully compost due to the addition of metals and plastics in containers, wrappings, and accessories. It's also important to consider the distance between floral production and consumption to assess the carbon footprint scale. Many materials are reusable (floral containers) or recyclable (unwaxed paper products). Florists can limit or eliminate single-use plastics (such as containers, zip ties, glitter, styrene, and phenolic floral foam) that ultimately reach landfills. Florists can make efforts to transition from plastic floral products that are often selected for their low cost, convenience, and shorter design labor time toward other means and products. Let your clients know you're taking these steps—it shows you care for the environment and creates greater value to consumers. Because sustainable floristry is a new topic in the industry, it must include inter-industry discussions and definitions.

IN THE CLASSROOM

You can present commercial floral products such as a sleeved market bouquet, a table centerpiece, and a casket spray to the class. These can be images with content lists rather than actual products. Ask students to separate compostable and non-compostable products for each design. Compostable components include cut flowers, potted plants, paper, raffia, and compostable containers. Ask students to identify the following:

- Which components are compostable?
- Which components are reusable?
- Which materials can be reduced?
- Which items will make their way to the landfill?

Additional lessons and assignments can focus on design and product development and increasing compostable components with the goal of creating *greener* arrangements. Taking the assignment further, how can each greener arrangement's mechanics and construction be further refined to decrease design labor and build multiple reuses of the design system?

Creating sustainable floral designs involves investing time in observing floral displays' durations. Retail florists may overestimate the required display duration of flowers, such as for weddings and events. It may not be necessary to invest in premade floral foam cages and bars that extend floral displays for days because many events are measured in hours, half-days, or single days.

It is possible for many flowers and cut decorative greenery to appear fresh for several hours out of a water source. The term *freestem* relates to the technique of securing cut flowers into a design with no water source. You can experiment with this technique to develop lists of cut plant materials that remain fresh in appearance for extended periods out of water.

Some cut flowers have an optimal display time with just a small amount of water. A plastic or glass water tube can be used for these, but a greener alternative is to add a water-filled equisetum stem segment to the bottom of the cut flower stem. This eliminates the need for plastic mechanics, increasing the compost-ability of the design, and saves time and money. Table 1 provides a list of plant materials matched with their display duration and water source, including equisetum stem segments used as water tubes. Results may vary.

Table 1. Plant materials, display duration, and recommended water sources.

Scientific name	Common name	Display duration (hours)	Water source*
Amaranthus caudatus	Hanging amaranthus	12–36	F
Anthurium andraeanum	Anthurium	48–96	F
Arachnis x *Renanthera*	Aranthera orchid	6–12	E
Chrysanthemum morifolium	Chrysanthemum	8–12	F
Cymbidium hybridum	Cymbidium (blooms)	12–18	E
Dianthus barbatus 'Green Trick', 'Green Ball'	Green trick, Green ball	72+	F
Dianthus caryophyllus	Carnations	12–36	F
Gerbera jamesonii	Gerbera	6–12; 12+	F; W
Gloriosa superba	Gloriosa lily	12; 12+	E; W
Heliconia sp.	Heliconia	24–28	F
Leucospermum cordifolium	Pincushion protea	8–12	F
Limonium sinuatum	Limonium	72–120	F
Paeonia lactiflora	Peony	6–12	W
Panicum capillarum	Explosion grass	6–12	E
Protea cynaroides	Protea	72+	F
Pycnosorus globosus	Craspedia	168+	F
Ranunculus asiaticus	Ranunculus	6–12	W
Rosa sp.	Rose, South American	8; 8+	F; W
Rosa sp.	Rose, garden	8–24	W
Scabiosa caucasica	Scabiosa	8–24	W
Scabiosa stellata	Scabiosa stellata pods	168	F
Zantedeschia rehmannii	mini calla	24+	E

***Water source key: F = freestem, E = equisetum, W = water tube**

Rating Materials Used in Floral Design

Hitomi Gilliam

IN THE CLASSROOM

Helping students to understand the wide variety of cut flowers, foliage, and floral supplies will help them make informed choices and design with sustainability in mind. A two-part system places objective ratings on cut flowers in terms of their origins and their display duration.

The first system asks students to self-rate the sustainability of a floral crop item or a floral supply item based upon its attributes. Was it locally grown, domestically grown, or imported? Is the flower from a certified organic farm? Was it locally foraged? Is the plant material invasive? While reliable, scientific evidence on whether organically grown flowers are better for the environment or locally foraged materials are more sustainable is not available, this rating system helps to spark discussions and reveal questions that need to be answered.

1. poor
2. fair
3. average
4. good
5. excellent

These ratings may vary from student to student and are somewhat arbitrary, yet they provide a system to open a class discussion about what makes one flower more sustainable than another.

A second evaluation scale analyzes the display longevity of plant materials. This aspect is of great importance to most floral consumers because people want their floral arrangements to last a long time. Does the fresh cut flower air-dry with an aesthetically pleasing result? Is it compostable? What is the likelihood of the item being reused? Is this a single-use product destined for the landfill?

C compostable

D will dry in the design and remain decorative

L landfill

RU reusable

SI single use, landfill

The same scale can be applied to hard goods used in floral design.

PACKAGING PRODUCTS

- bubble wrap
- burlap
- cellophane
- excelsior
- newspaper
- paper
- waxed paper
- woven fiber synthetic wrap

TIES/FASTENERS

- aluminum wire
- bindwire
- fabric ribbon
- jute string
- raffia
- staples
- tape
- waterproof tape
- waxed string
- zip ties

Organic is a labeling term that indicates flowers have been produced according to USDA organic standards. These methods integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used.

BUILDING SUPPLIES

- floral adhesive
- hot glue
- pan glue
- spray adhesive
- Uglu
- wood glue

CELLULOSE CONTAINERS

- carved bowls
- crates
- planters
- trays
- trugs
- turned bowls
- woven baskets

GLASS

- blown
- etched
- molded
- ornaments
- production (blown)
- water tubes

CLAY PRODUCTS

- pottery
- terra cotta

METAL

- aluminum (forged, welded, poured)
- chenille
- chicken wire
- copper
- decorative wire
- easels
- pins
- steel
- wire
- wire frames
- zinc

FIBER

- Agra wool
- bamboo
- cane yarn
- coconut
- cotton
- FibreFloral
- jute
- rattan
- rope
- silk
- sisal
- string
- Terra Brick
- tulle
- wool

WAX

- beeswax
- candles
- paraffin
- soy wax
- stem wrap
- waxed paper
- waxed string

ANIMAL PRODUCTS

- feathers
- fur
- leather

PLASTICS

- bars
- cages
- Christmas trees
- containers
- floral foam
- ornaments
- permanent flowers and plants
- pillows and eggs
- Styrofoam
- trimer foam
- urethane foam
- water tubes

RUBBER PRODUCTS

- bands
- gloves
- tube caps

PAINT

- brush-applied
- spray-applied

For the use of dried flowers and foliage, another evaluation list can be used. Was the material preserved in its natural state? Is it painted, bleached, or lacquered?

a. natural
b. painted
c. bleached
d. glycerin
e. lacquered

Each of these scales can become an interactive lesson. Using a variety of samples, students can arrange the materials into sections labeled "packaging and wrapping," "mechanics," "containers," and more. Teachers can use these systems in class participation activities with live poll apps or handouts. Small groups can organize the materials from least to most sustainable, then the class can peer review the results.

Excessive Plastic Use: How It Started, How It's Going

Elizabeth Englebretson

Plastic begins affecting our economy, ecology, and human health as soon as petroleum or natural gas comes out of the ground. Plastic continues to affect us long after we have thrown away our water bottles, opened our packages, or eaten our takeout. Plastic, as we are familiar with it today, is a post-World War II product that was created by chemists from a byproduct of the petroleum industry. During World War II, newly developed plastic resins were used to replace glass windscreens on fighter planes, and natural rubber was replaced with synthetic rubber for longer and better-wearing truck tires.

After the war, plastic revolutionized the design and consumer goods world as a durable, light, inexpensive, and clean material that keeps food fresh longer and makes our lives more convenient. Between 1950 and 2015, 8.3 billion metric tons of plastic were produced; 6.3 billion metric tons has become plastic waste, with only 9 percent recycled, 12 percent incinerated, and the additional 79 percent in landfills or the natural environment. According to the 2019 Plastic Atlas, more than half of all plastics have been made since the year 2000. The increase in production and the variety of resins being produced has overwhelmed the waste management infrastructure globally and has made plastic the scientific marker of the Anthropocene era, our current geological age.

Recycling has always been touted as the way to consume without impunity. Within the last decade, this has proven to be false. For years, low-grade, unrecyclable plastic waste was shipped to countries in southeast Asia, including China, until 2017, when China stopped taking waste because it was becoming a major pollution problem for them.

Even though most single-use consumer plastic goods have the recycling symbol on them, there is no assurance that the proper recycling facility exists to reclaim the plastic. Only 9 percent of recyclable plastic is recycled, and most can be recycled or downcycled only once.

The impacts of plastic on our economy, ecology, and human health begin with the extraction of fossil fuels from the earth and continue through the full life cycle of the plastic product. Petrochemical companies require a built infrastructure, including roads, pipelines, storage facilities, and processing complexes, to produce plastic. The emissions from petrochemical plants are creating generations of communities with increased cancer rates, respiratory problems, and reproductive issues.

Plastics leach chemicals into our food, water, air, and skin. They also break down into smaller and smaller pieces called microplastics. Microplastics are being found everywhere on the planet, including in Gulf Coast oysters, and their toxic effects on humans and ecology are just beginning to be studied.

More than 504 million tons of plastic waste is produced annually, and more than half of that plastic is single-use. In the Mississippi Gulf Coast region, residents are especially concerned because the Mississippi River drains 40 percent of the continental U.S. Samples collected at sites along the river show 74 percent of the litter in the river is plastic.

Plastic Alternatives and Building a Customer Base

Hitomi Gilliam

RETAIL

Understanding that retail florists may want to incorporate sustainable floral designs into their product lines, teachers and students can maximize studio time in the development of helpful, creative ideas. More than ever, consumers are open to purchasing sustainable floral products.

One sales approach could center around a 100 percent compostable bouquet. Loose cut flower sales are highly sustainable because most of the product is compostable. Florists can differentiate in the marketplace by identifying the farms and regions from which cut flower varieties originate.

Local farmers can be featured in posters using their images and quotes. Information about international farms' ethical farming practices and social sustainability could be posted on displays or shared on social media.

Florists should consider taking paid deposits on floral containers at the point of sale, then offering cash back or a credit on their next purchase when they return the container. This new way of selling flowers could be termed "community supported sustainable floristry" (CSSF).

Another approach is to prepare containers using sustainable mechanics ahead of time and ready them when orders arrive.

IN THE CLASSROOM

Challenge floral students to develop products and marketing plans for them. Have a product-development exercise where students create armatures and containers. They will see the benefits of a sustainable product that can swiftly be made into a finished floral design for daily orders, weddings, or events.

Students should think about how to promote sustainable floral designs. One approach is to research and discuss the pros and cons of organically grown flowers and food. Consider the fees and expenses of organic farming in your area and nation. What are the costs associated with the promotion of an organically grown, hand-tied bouquet?

Composting Floral Waste

Cole Etheredge

Over the past several years, more products have been developed to allow florists to construct floral designs in a more environmentally friendly manner. However, little research has focused on what can be done with the waste produced from floral design. While the USDA has stringent guidelines to prevent the importation of pests and plant diseases, there are no regulations regarding contamination with residual pesticides and other harmful chemicals on imported floral crops. This can lead to some cut flowers being sprayed with the maximum recommended dosage of pesticide until the time of harvest and then being shipped directly to market. Many pesticides are made to be water soluble and persistent, and they can migrate into the environmental at large.

Mississippi State University researchers conducted two studies investigating different composting techniques for floral waste. Floral waste was used in both vermicompost (worm composting) stacking bin systems and aerobic compost mounds. In both composting techniques, the compost mixture was analyzed for residual pesticides both before and after composting. Researchers found that residual pesticide concentration for all tested pesticides was well below acceptable concentration levels. The finished compost in both studies was found to meet industry quality standards. This indicates that floral waste can become a suitable compost for the horticultural industry.

Researchers also investigated U.S. retail florists' perceptions of environmental health and their willingness to compost fresh cut flower waste. Of the 300 retail florists who took part in the study, 63.33 percent indicated having a high concern for environmental health, while 82.33 percent agreed or strongly agreed that they would be willing to collaborate with an institution such as a university, Master Gardener group, or community garden group to turn their floral waste into compost. This suggests that a portion of florists who did not have a high concern for the environment were still interested in composting their floral waste.

Composting is one alternative waste management method to traditional landfill dumping and can produce a valuable commodity for agricultural, horticultural, and related industries. It helps reduce waste transportation, treatment costs, and landfill volume, and is an innovative way to involve waste generators in their own waste treatment, raising community environmental awareness.

Green Burials

James M. DelPrince

U.S. burial practices rely on chemical preservation techniques and materials. Our accepted funeral

practices center on the temporary display of a deceased loved one, giving them what we believe to be their best appearance, and surrounding them with the best material goods to support their post-death "existence."

Preservation chemicals and techniques were advanced to preserve U.S. Civil War soldiers' bodies so that they could be transported home via railway for local burial. One hundred years later, journalist Jessica Mitford gave a behind-the-scenes view of what had become the American funeral industry. It was not in a good light. A quarter-century later, Swiss-American researcher Elizabeth Kubler Ross developed insightful theories on how Americans view death, how previous generations dealt with death, and how those views became commercialized by the developing funeral industry.

In 2005, a green burial was televised in the HBO series *Six Feet Under*. Green burials, though an ancient practice, became obsolete and have only recently gained newfound interest. This new movement looks at death as a natural part of life and helps its followers prepare for it rather than ignore it.

Green funeral directors encourage natural floral designs. Gravesites are adorned with fresh foliage rather than artificial turf, and caskets with flowers and compostable mechanics (G. Stansbury, personal communication, August 16, 2022). Green burials offer floral design product and service opportunities that are beautiful and meaningful for clients. Retail florists should embrace sustainable sympathy floral design work rather than fear it, and develop products and services to fill the needs of future clients.

Floral Design Projects

Participants in the 2022 Celebrate/Elevate/Educate: Sustainability short course were invited to develop hands-on projects as part of this curriculum in sustainable floral design. When teachers implement these or any other floral design projects, invite students to evaluate the design concept or finished arrangement according to Hitomi Gilliam's sustainability rating systems in this publication.

- Green attributes: poor, fair, average, good, excellent
- Longevity: C, D, L, RU, SI
- Does the design project exhibit materials with potential for reuse, reduction, and recycling?
- For professional florist groups, how can the design's attributes improve its marketability?

The following section provides high school, collegiate, and professional florist teachers with sustainable floristry project ideas. We invite you to make them appropriate for lab budgets, learner needs, and class duration. Importantly, incorporate the theory presented in this publication and emphasize your projects' locations on the sustainability scale, from single-use to fully compostable components.

ARRANGEMENTS

Table Wreath with Compostable Container

Althea Wiles

Using a base of palm leaf plates, chicken wire, and moss, we'll create a tabletop wreath with a candle in its center. The wreath consists of mixed evergreen foliage, making a long-lasting table display. Flowers can be added and replaced as desired. Everything except the chicken wire can be composted.

Tools and Materials

- #24-gauge florist wire
- Assorted cut evergreen foliage
- Beeswax candle in glass
- Chicken wire, 18 inches wide by 6 inches long
- Floral knife
- Log cross section
- Moss or similar plant material filler
- Pruners
- Wire cutters

Create a roll using the cut-to-size chicken wire. Stuff the roll with dampened moss, then wire the end together, making a doughnut. Since our palm leaf plate is square, we formed our mechanic into a square.

Fill the form with assorted evergreen cuttings. We added some defoliated Savannah holly branches as the last placements for contrasting color. A beeswax votive candle was elevated in the center using log cross sections. Keep the mechanics damp and the design cool for a longer lasting display. Never leave a burning candle unattended.

Fresh Arrangement with Vegetable Container

Althea Wiles

Fresh fruits and vegetables (in botanical terms, both fruits and vegetables are termed *fruits*) can be used as floral containers. With some materials, such as melons or cucurbits, the flesh can be used as a mechanic to stabilize stem placements and provide a moisture source. Consider the types of fruits and vegetables available in your area during each season, then plan the project to coincide. The sustainability of these designs is increased if they are locally grown.

Tools and Materials

- Assorted cut flowers
- Miniature magnolia leaves or similar foliage
- Floral knife
- Glass vase liner, upcycled
- Kitchen knife
- Lemon juice
- Rubber bands
- Seasonal fruits or vegetables

Fit an upcycled container to a fruit or vegetable. In this example, we cleaned and cut a sweet pepper to accommodate a glass yogurt container. To disguise the container, we rubber-banded miniature magnolia leaves to the jar, then wedged the jar into the pepper. Next, we added fresh floral components. This design can be scaled up using a pumpkin. Students can also create multiple pepper designs, contained in a single bowl or dish.

Here are some examples using other plant material containers (left to right): cucumber, zucchini, and orange.

Some fruits and vegetables do not remain stationary while on display. To account for this, remove approximately 20 percent of the fruit's base. Slice off about 30 percent of its top to expose the vegetable's flesh for arranging. Coat the surface with lemon juice to prevent oxidation.

Encourage students to consider the focal point of the design, which can be symmetrical or asymmetrical. Impale flower stems directly into the vegetable or fruit. Select lignified, stiffer stems for this technique. Only a few flowers are needed; otherwise, the fruit's flesh will be disguised.

Compostable Centerpiece

Cole Etheredge

This project teaches students to create a fully compostable table arrangement, a critical design category for a basic design class or course. This design is also important for professional-level students as an introduction to sustainable methods and value-added products.

We feel it is more important for learners to gain practice in building the mechanic and manipulating the floral placements than the overall beauty of the finished design. For beginners, sound mechanics construction is more important than adhering to design principles.

Tools and Materials

- Cut flowers with stiff, lignified stems
- Cut foliage
- Floral knife
- Hole punch
- Moss (Spanish, sheet)
- Palm leaf bowl
- Scissors
- String (beeswax-covered or plain twine)
- Twigs, bark
- Underplate

Punch holes just below the bowl's rim on all four sides, and thread string though the holes.

Layer dampened mosses and twigs in the bowl. We added Spanish moss in a fist-sized mound first because it was more abundant and inexpensive. Continue layering the materials until you have created a rounded mound. Bring the ends of the string together and tie them to secure the mound of wet moss and twigs.

Add fresh flowers and foliage to the mechanic. Students may have more success by cutting flower stems short and forming the design into a mound, replicating the form of the mechanic. Angling the stem placements while impaling them into the moss and twigs may be easier than vertical placements. Another valuable learning aspect of this design is that the mechanics do not have to be concealed; students can practice restraint and economy.

The display duration of this design depends on the storage and presentation environment, but it can last a few days. Keep the mechanic moist, but don't fill the bowl with water. The design will decompose more slowly if it is kept moist but not soggy. Finding the right balance between moisture level and desired display duration is part of the learning process and an opportunity for deeper observations.

Compostable containers transfer moisture to surfaces where they are displayed, so this design may require a glass or ceramic underplate to protect fine finishes. Stress this aspect during the demonstration and as students practice.

Design Using Chambered Pith Tubes and Beeswax

Cole Etheredge

Adult and supervised youth learners can create unusual floral designs in numerous configurations with this mechanic technique. It uses dried plant stems with chambered piths as the water reservoir, all mounted in melted beeswax.

Tools and Materials

- Beeswax, bulk
- Cooking spray or leaf shine
- Cut flowers, foliage
- Dried bamboo tubes or other dried, chambered pith stems (we used *Piper auritum*, Mexican pepperleaf)
- Extra dried twigs, stems
- Flexible container to be used as a mold
- Floral knife
- Leaf shine or cooking spray
- Long-necked, squeeze water bottle
- Pruners
- Rags
- Saucepan and hot plate
- Small, natural fiber brush
- Tongs

Fresh materials will shrink and become loose in the beeswax over a period of days, so it is best to begin with dried stems. Melt bulk beeswax pellets and pour the wax into the bottom of the container you are using as a mold. The mold must be free of holes and have a mouth wider than the bottom of the container so that the beeswax unit will release easily. We used a black plastic floral container, but round, 4-inch, clear-plastic drip saucers are also good for this purpose because the solid wax is easy to remove from them. We recommend spraying the mold container with cooking spray or leaf shine before filling it with liquid wax and dried plant material.

We inserted a series of twigs into the container, wedged in place to make a natural-appearing gridwork to temporarily hold the water tubes in place. Add the melted beeswax and allow the unit to cool to room temperature. To make sure they are watertight, brush extra beeswax on the tubes if they are split or cracked. Our design example cooled to a solid form in less than 1 hour. If refrigerated, it will be ready in about 20 minutes.

Remove the beeswax tube unit from the mold container. Fill the tubes with water. A squeeze bottle with a long neck makes filling tubes quick and easy. Add flowers and foliage.

Natural Epergne

Cole Etheredge

Just a few cut plant materials can help this humble container become a study in the marriage of floral design and horticulture. In the 18th and 19th centuries, fruits and flowers were displayed on dining tables as fine decorations in containers called epergnes, manufactured by jewelers and companies specializing in silver, crystal, and glass manufacture. In this project, students will construct the container. Be sure to go over safety techniques and issues when working with power tools.

Tools and Materials

- Cut flowers
- Dowels, skewers
- Electric drill and bits
- Floral knife
- Log cross section
- Long-necked, squeeze water bottle
- Palm leaves, dried
- Pruners
- Rubber bands
- Twigs
- Water tubes
- Wire cutters

Drill holes into the log cross section matching the diameter of the dowels and/or skewers. Next, add water tubes to the rods, using rubber bands to hold them in place. We covered the rods with dried palm leaf segments, but other materials can be used. Consider wrapping them in yarn or raffia. Place the covered rods into the pre-drilled holes, add water to the tubes, then create the floral arrangement. It is also possible to drill holes large enough to accommodate the water tubes.

Horizontal Line Table Arrangement

Kay Wolff

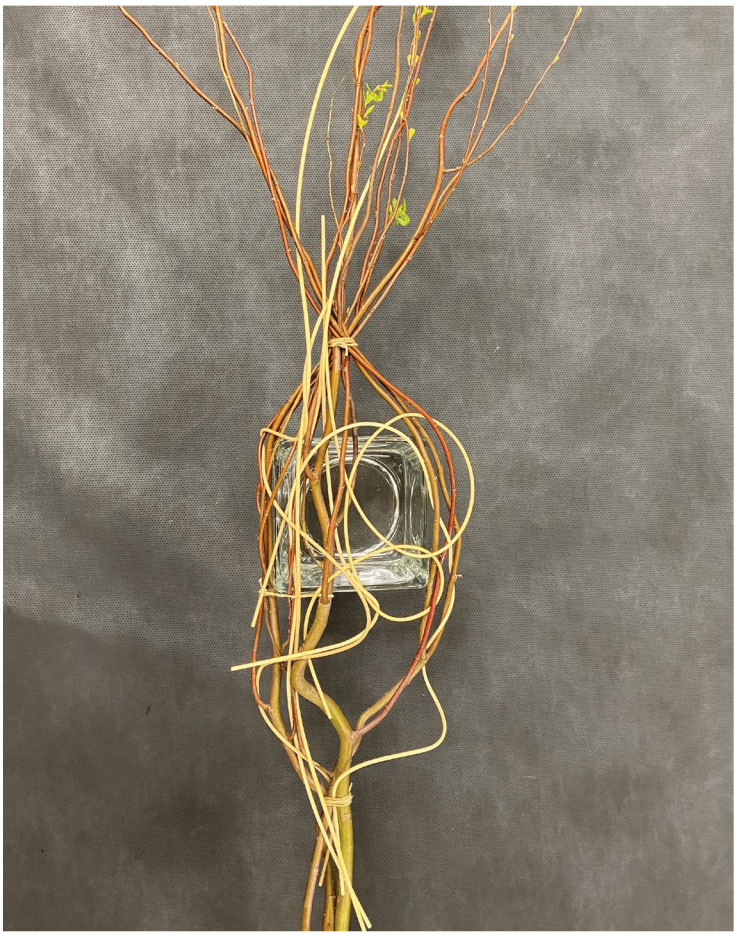
Having many names (diamond centerpiece, the long and low, a horizontal design), this arrangement ranks high as a class project because it is versatile. The horizontal arrangement is used as a table centerpiece for seated dining events, can be perched at the edge of a head table, and often adorns a fireplace mantel as a natural decoration.

Many designers are challenged as to how they can make this arrangement without floral foam. By using long, flexible branches and long, flexible floral materials, it is easy to obtain pleasing results. Floristry teachers, students, and professionals will want to keep these techniques in their toolboxes because they are such an easy fix for a common design problem: keeping flowers long and low!

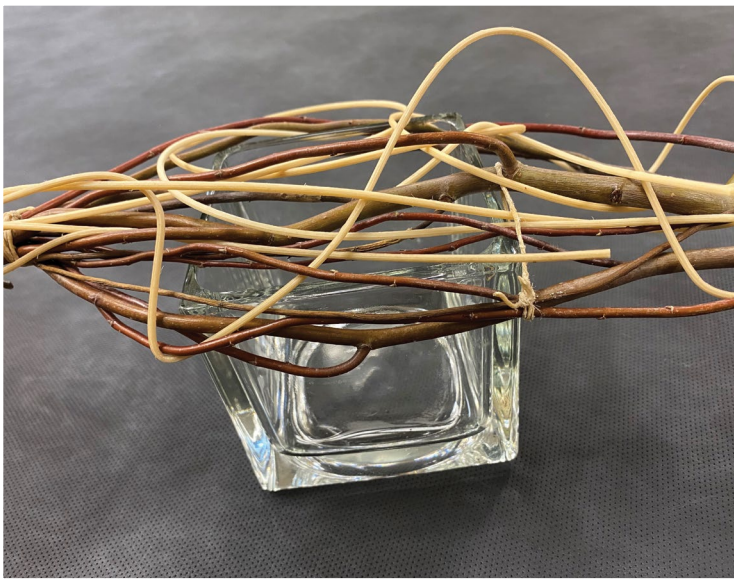
This arrangement can be made in many types of vases, from cylinders to cubes and glass to ceramic. The mechanic, a twig armature, extends the visual beauty of the design by itself. The arrangement can hold many flowers or just a few stems, saving studio budgets.

Tools and Materials

- Corkscrew willow, fresh
- Cut flowers (We used daffodils and larkspur.)
- Cut foliage (We used plumosa vine and ivy stems.)
- Floral knife
- Midollino, soaked
- Pruners
- Rubber bands, raffia, beeswax string, or paper-covered wire



Begin by arranging the flexible willow into a bunch. Bind it, then lay it over the top of the floral container. Be sure that some stems cross over the top of the container while others hug the container's sides. Bind the opposite side of the willow bunch.



Once the willow armature is secured, you can used soaked midollino sticks to create a more extensive gridwork over the top of the container. You can substitute more willow or flat cane for this secondary framework.

Add line placements of vining foliage and flexible cut flowers first. Place mass materials toward the heart of the design. Allow more space between materials as the lines travel to the outer portions of the design. This project can capitalize on foraged and garden materials available in each season. Components such as fresh wisteria lengths, lunaria, miscanthus, sea oats, strawflowers, and eucalyptus bark provide creative options.

A key feature to keep in mind when replicating this technique is to extend design elements (color, pattern, texture) to the outer edges of the design. This can be accomplished with vining floral materials, vining foliage, or elements such as colorful paper, ribbon, or durable flower petals. After some practice, this arrangement can be made very quickly, or, if needed, can be drawn out for a longer class period using more mechanical and floral details.

Cornucopia

Melinda Lynch

Many of the designs in this publication use containers made from easily attainable materials found locally. This project is inexpensive and sustainable because the burlap is donated from a coffee company and the chicken wire is repurposed from garden fences. The form can be reused each year.

This project involves the construction of a cornucopia (or horn of plenty) using chicken wire covered in burlap and decorated. The design is perfect for Thanksgiving but does not need to be limited to the fall semester. Use the same concept in the spring to celebrate floral abundance, knowing that students have acquired a container-manufacturing skill to last a lifetime.

Tools and Materials

- #24-gauge florist wire
- Bagasse food container
- Burlap fabric
- Chicken wire, 18 inches square
- Dried orange slices
- Floral knife
- Fresh cut foliage
- Fresh floral foam
- Fresh flowers
- Hot glue gun
- Plier stapler
- Pruners
- Raffia
- Wired wood picks

The first step in creating this design is to make the cornucopia. Fold the chicken wire to form a waffle cone shape with a lip. The lip becomes a platform for the container.

Cut the burlap into a square to cover the chicken wire form. Fold the burlap over the form and tuck it inside. Glue the loose ends and sides so the fabric is attached to the chicken wire.

Another method is to cut the burlap so it completely envelopes the chicken wire square. Fold the burlap margins over the edge of the wire square and staple them in place. Fold the covered square into a funnel and wire it in place with florist wire.

Decorate the form with items such as ribbon, bark, and moss. We used some dried orange slices to conceal the binding point and within the arrangement, then placed the arrangement on a stand to protect the tabletop surface from moisture. The container can be attached to the cornucopia with wire when commercial floristry is emphasized, or it can merely rest on the container's lip.

We suggest using fresh flower foam for this project, but instead of an entire brick or half-brick, use one-third or less of one brick. Students need to know how to use floral foam—free-float soaking, trimming, binding, creating secure placements, and concealment.

Pumpkin with Succulents

Melinda Lynch

Succulent-laden pumpkins are becoming a decorator staple in fall seasonal displays. Students can propagate hundreds of "legacy succulent plants" that are, in turn, used by future students. These designs can be made in pairs or trios, using some for fundraisers. Non-credit floral courses with larger budgets can use a variety of unique pumpkins and interesting color combinations.

Tools and Materials

- Pan melt glue or tacky craft glue
- Pumpkin
- Spanish moss or sheet moss
- Succulents

We used pan melt glue at the lowest temperature possible to adhere Spanish moss to the pumpkin. After this, cut succulent plants were dipped into the glue, then nestled into the moss, making some contact with the pumpkin skin below. You can use tacky craft glue, which may be easier to source and include in a participant kit, for adhering both the moss and the plants. It may also be safer for participants' use.

Open the moss a little to ensure that the succulent stems are well-anchored. Twist the plants about one-quarter turn to spread the glue. If the plants are not secure, they will dislodge. Remove all glue strings before placing each plant into the moss circle. These designs look their best when the circle is full and most of the moss is covered.

The pumpkin seeds can be planted in the garden, yielding new plants the next season. The succulents will root and become larger if planted in environments conducive to overwintering. You can also pot the succulents and bring them indoors.

Simple Topiary with Alstroemeria or Roses

Melinda Lynch

This is a great design for reusing containers that you may have. Once the flowers and foliage expire then you will have a container ready to reuse for the next event. The foliage can be obtained from your yard or landscape. This will help with trimming the bushes and with the expense of the design.

Tools and Materials (Alstroemeria Topiary)

- Alstroemeria, one bunch
- Floral knife
- Fresh flower food solution
- Glass vase
- Raffia

Remove all foliage from the stems of one bunch of alstroemeria. Arrange the flower heads using the spiral technique and bind with raffia. If some of the flowers face outward, use that bent stem to your advantage so the flowers will be full throughout the design. Cut the stems with a sharp floral knife so that they remain one and a half to two times the height of the container.

Additional materials can be added to this design, but it is best to use restraint; otherwise, the topiary form is lost. A beautiful design can be made from five stems (half of a bunch of alstroemeria). A touch of compostable ribbon can be added once the design is in its permanent display site. One approach to this project is to line up each student's design on a tabletop, arranging the vases into a pleasing composition.

Tools and Materials (Rose Topiary)

- Chicken wire
- Floral knife
- Fresh flower food solution
- Pottery container
- Raffia
- Roses, six stems

Cut a piece of chicken wire that extends about an inch beyond the lip of the container. Then form the chicken wire into a half-circle and place it into the top of the container. Tape the sides of the chicken wire to the container. You can loop the tape around the chicken wire and then attach it to the container. To secure the tape, add a ring of tape around the lip of the container.

Arrange the roses in a spiral pattern and tie with raffia. Insert the unit into the chicken wire mechanic and cover it with foliage. We used pothos leaves and stems, but you can use foliage such as pittosporum, podocarpus, tree fern, ming fern, or gunni eucalyptus.

EVENT DESIGNS

Centerpiece Using Locally Sourced Flowers and Rental Containers

Althea Wiles

This design concept allows class participants to explore and appreciate the impact of locally grown flowers, whether from a flower farm or foraged. Our design was guided by the availability of daffodils and tulips, two flowers that are beautiful together but do not mix because of the daffodil exudate's effect on other cut flowers' longevity.

Tools and Materials

- Ceramic tray
- Floral knife
- Glass containers
- Locally grown flowers

We placed the flowers in separate jars and arranged them on a tray to create a pleasing design. The elongated tulip stems provide rhythm. No specialized mechanics are used in this design—just the interlaced stems.

After the event, the floral designer can collect the glassware and trays, sanitize them, and reuse them for rentals or sales.

Paper Flowers for Special Event Backdrops

Cole Etheredge

Teach students how to create large-scale paper flowers for a low-cost, high-impact design. Each student can create a few types of flowers in a 60- to 120-minute time frame. Take the project a step further by attaching the flowers to a stable surface to create a spectacular prop—a paper flower wall.

Consider this project for high school and collegiate events such as proms and awards presentations. Build prop dismantling activity into the project grade to ensure the prop is removed. Students can keep their flowers, or they can disintegrate them for composting. A project such as this helps to build a sense of community and group accomplishment, especially when viewed and praised by people outside of the project.

Tools and Materials

- Card stock
- Glue guns, glue sticks
- Scissors
- Templates

Numerous paper flower examples and templates are available online. Here are two sources:

https://colorspapers.blogspot.com/2019/06/giant-paper-flower-aurora-paper-flowers.html

https://www.youtube.com/watch?v=rBw3VcAWzq0

Event Backdrop/Buffet Design

Cole Etheredge

Designing flowers on vertical planes can be a challenge when it comes to their mechanics and mountings. This design concept uses three manufactured garden trellises wired together to form an accordion armature, making it suitable for a tabletop display. It would be a standout arrangement for a buffet service, taking up very little tabletop space. It could also be used on sofa tables or buffets in event spaces when a commanding arrangement is needed. It can be organized as a group project, or it can be completed by a single learner.

Tools and Materials

- Chicken wire
- Cut flowers
- Cut foliage (aspidistra, dried palm, evergreens)
- Dried branches (We used lichen-covered *Lagerstroemia*, crape myrtle.)
- Floral knife
- Long-necked, squeeze water bottle
- Paper-covered wire
- Three garden trellises
- Water tubes
- Wire cutters

We wired the trellis frames together at numerous points to keep the unit stable, then added three chicken wire panels to help stabilize small foliage and floral placements. We free-stemmed dried and fresh foliage through both the trellises' gridwork and the chicken wire. Choose foliage that will last out of water for several hours, selecting foraged materials as well as commercial cut foliage like eucalyptus, salal, and grevillea.

Weave water tubes into the chicken wire, following a zigzag pattern for even distribution. Use additional foliage to disguise them, if desired. The design framework can be refrigerated at this point, if necessary, or transported to the event site.

Add water to the water tubes using a long-necked water bottle, then fill the tubes with delicate, wilt-sensitive flowers. Flowers that can survive outside of water for 10–12 hours can be free-stemmed (eryngium, protea, Limonium, pampas grass).

DOOR/WALL DECORATIONS

Wreath with Dried Floral Accent

Melinda Lynch

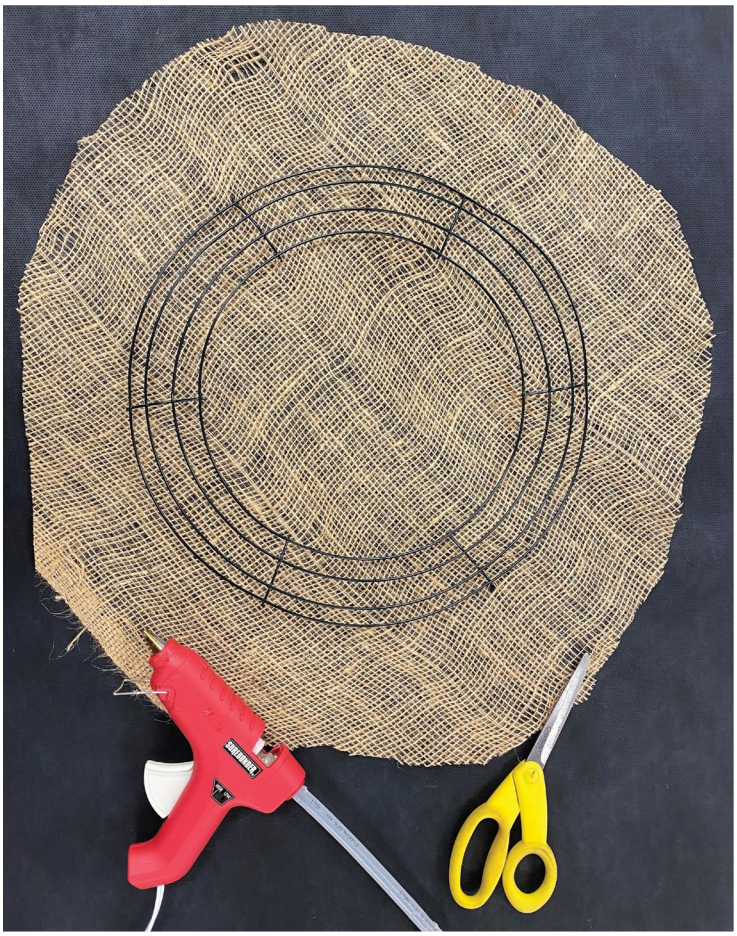
Tools and Materials

- #24-gauge florist wire
- Burlap fabric
- Dried floral materials
- Glue gun
- Pruners

- Raffia
- Scissors
- Wire wreath form

Students should learn a wide variety of ways flowers can be displayed, helping them to be more informed consumers or manufacturers of floral products. In this design, a simple dollar store wreath ring forms the basis of the design. We covered the form with burlap and decorated it with just a small cluster of dried materials. An alternative covering method is to wrap the wreath frame with cotton or jute ribbon.

Another design option is to fill the entire wreath shape with plant material. This will increase the time and complexity of the project.



Cut the burlap into a circle, leaving at least 3 to 4 inches extending beyond the outside of the wreath form. Cut the center of the burlap into rays like a sun (leaving it attached to the whole piece). Fold the rays (triangle shapes) into the wreath ring and glue. This will give you a smooth burlap look to the top of your wreath.

The next phase of the design involves gathering plant material from shrubs or grasses in the harvestable landscape. Some good choices include lavender, palm fronds, Leucadendron, bird of paradise leaves, and grasses. These humble materials, which at first appear to be trash to some students, transform the concept into true harmony, where the finished product is greater than the sum of its parts.

In this example, we gathered commercially harvested and dried materials together with a glycerin preserved branch of inkberry. We tied the bunch with raffia, then wired it to the frame.

This project can make a good fundraiser if the designs are made and marketed in late summer to early fall—just when people begin to think about autumnal door decorations. At that time, be sure to advertise any Christmas holiday sales to your shoppers, who will undoubtedly want to purchase sustainable evergreen wreaths, swags, and arrangements.

Raffia Garland

James M. DelPrince

Tools and Materials

- Dried flowers
- Glue gun or adhesive
- Raffia
- Scissors

Taking about six strands of raffia, tie one end into a slip knot. This is the hanging mechanism for the design. The remaining strands of raffia in the bunch become the backbone of the garland.

Create 12 raffia bows, each tied with a segment of raffia. You can keep the loops in place or cut them for an aster-flower effect. Tie them to the backbone, keeping the spacing closer toward the top, then gradually increasing the spacing between them toward the bottom. This becomes an example of building rhythm in a design.

Glue small pieces of dried flowers and/or foliage to the center of the bows. These can be odds and ends. This garland would look great on a dorm room door or on a headboard. Wind it around a plain vase for a decorative effect.

PERSONAL FLOWERS

Foliage Nosegay and Boutonniere

Melinda Lynch

Tools and Materials

- Aspidistra
- Camellia
- Cedar
- Glacier ivy
- Miniature magnolia
- Plumosa
- Sisal string
- Stem wrap

Floral design students can benefit from a project where they create a nosegay and a simple boutonniere…with no flowers! This exercise provides practice for advanced personal flowers projects with durable greenery, at a fraction of the cost of traditional floral options. If the foliage is locally grown, the project becomes even more powerful. It encourages students to seek multiple patterns, values, and textures of greenery, and

teaches them that exceptional personal flowers can be made at home, quickly, encouraging them to replicate similar projects in the future. One of our goals as floristry teachers should be to encourage people to live with flowers!

We made the nosegay bouquet using the spiral technique and bound it with string. All plant materials for our example were collected at the MSU South Branch Experiment Station in Poplarville. This same design would be enhanced with fragrant foliage varieties and herbs. The bouquet can be placed in water and refrigerated.

The boutonniere can be made from the small leaf and stem pieces left over from the nosegay construction, so no additional plant material needs to be purchased! For our boutonniere, no materials were wired. We simply used a stem with two camellia leaves as the backing, then layered plumosa fern atop and added two glacier ivy leaves at the binding point. These are held in place with a bit of stem wrap, but beeswaxed string would also work. All plant materials should be harvested and conditioned to ensure a longer lasting display. Wrap the boutonniere in a beeswaxed cloth, or seal it in a reusable container and refrigerate until use. Remember to include a pin with each boutonniere.

Combined with one to three other projects in this curriculum, this project can be part of a brief wedding design course. Consider the learners, whether in school or out, and tailor the program to their needs.

Succulent Boutonniere

Melinda Lynch

Boutonnieres are small, and they need to be in the correct shape and form so they can be easily worn. Flowers to wear are an art form all their own. Indeed, students should practice at least one miniature project to help them understand scale, the design application of measure.

Tools and Materials

- #24-gauge wire
- Boutonniere pin
- Camellia
- Cedar
- Glacier ivy
- Miniature magnolia
- Plumosa
- Stem wrap
- Succulent, cut

In this project, the succulent is pierce-wired and taped to give it support within the design. It is also possible to glue to attach the succulent. As part of this project, students can practice pinning the boutonniere onto the lapel of a jacket.

GARLAND

James M. DelPrince

Tools and Materials

- Cut plant material
- Rope, sisal, or twisted paper
- Twine

Garlands are some of the oldest, most versatile floral designs ever created. Let's continue this tradition by sharing garland-making with our students.

Using abundant plant material, whether greenery, floral, or both, create a garland using a sisal or twisted paper rope for the core backbone. Add a cluster of miniature magnolia leaves to the back and one to the front, then overwrap the stems tightly with twine. Repeat this process until the garland is a suitable length. Tie off the end with a snug knot to keep the plant material in place.

A design such as this can be festooned from a railing or arranged in a serpentine form on a tabletop. Garlands are appropriate in any season. Select mature foliage or, if using flowers, choose those that maintain a fresh appearance for several hours out of water.

LEAFWORK

There are probably hundreds of manipulations that can be accomplished with aspidistra leaves alone! It is worthwhile to grow this plant if your climate allows. If not, it is a reasonable purchase considering the many ways students can make creative presentations with this long-lasting leaf. We encourage floral design teachers at all levels to develop a lesson on aspidistra leaf manipulation using five to 15 different styles.

View leafwork tutorials here:

5 Techniques Using an Aspidistra Leaf

Aspidistra Techniques: Framing Floral Techniques Companion Video

Design Time with Leaf Manipulation

VEGETABLE GLYCERIN PRESERVATION

Once you take the time to preserve cut foliage using the glycerin technique, you will want to include it in your teaching repertoire every summer. Note: Summer to late summer is the best time to preserve landscape foliage. It will remain on the stem, and you will use this wonderful resource for the entire fall season. To learn how to use this preservation method, see MSU Extension Publication 3039 *Glycerin-Preserved Foliage*.

Conclusion

Taking small steps toward including sustainable floral design theory and projects in any floristry education program helps increase learner eco-consciousness. After taking the initial steps of teaching horticulture students, future work can include programs for retailers, wholesalers, manufacturers, growers, and extra-industry groups. Your sustainable practices can help everyone move toward a more sustainable floral industry.

Sustainable floral design practices can invigorate an existing course or aid in the creation of a new one. Many students would be attracted to such a program. Use its uniqueness to market your sustainable floral design courses. In the classroom, emphasize sustainability and craftsmanship, especially in lower-level courses or with learner groups that do not intend to become professional florists.

Often, sustainable floral design techniques are inexpensive, helping to stretch budgets. In commercial floristry, these techniques can lower the cost of goods sold and increase profit margins.

Perhaps the greatest challenge to this work is perseverance. Plastics abound, and it is easy to fall back on familiar ways of creating centerpieces, wedding, and sympathy designs. Use the creativity that brought you to floral design teaching—and spread the potential to your students.

Sustainability Terms

3 Rs	Reduce, reuse, recycle hierarchy.
Biodegradable	Something capable of decaying into its basic components.
Biophilia	A love of life and living, and an affinity for living things.
Byproduct	Excess material produced.
Carbon emission	Pollution released into the atmosphere from carbon dioxide and carbon monoxide, often from motor vehicles.
Carbon footprint	The amount of carbon dioxide produced by your lifestyle.
Circular economy	A system dedicated to eliminating waste by reusing, sharing, repairing, and recycling resources.
Closed loop	A system where everything is recycled and reused.
Composting	Controlled decomposition of organic material. Reduces food and yard waste back to the earth.
Conservation	Protection from harm.
Degradable	Capable of being decomposed chemically.
Eco-conscious	The mentality to focus on reducing harm to the environment wherever possible.
Eco-friendly	Environmentally minded actions that cause minimal harm to the earth.
Ecological footprint	Measurement based on the amount of nature it takes to support something.
Environmental impact	The effect something has on the environment.
Environmental sustainability	Avoidance of depletion of natural resources to maintain an ecological balance.
Fair trade	Principles of fair treatment, living wages, and safe working conditions for workers.
Forage	The gathering of plant matter.
Freecycle	Exchanging goods to extend their life cycle and keep reusable items out of the landfill.
Gray water	Domestic wastewater including water from the bathroom, kitchen, and laundry.
Green	Term used to describe behaviors, products, policies, people, etc., that minimize environmental damage.
Greenhouse effect	When excessive heat is trapped and built up in the troposphere by a blanket of gasses.
Greenhouse gas	Gas in the atmosphere such as methane, water vapor, and carbon dioxide.
Greenwashing	A marketing tactic that inaccurately portrays a “green” or “eco-friendly” product or service to increase sales; misrepresenting something as being green when it is not environmentally sound.

Invasive plants	Harmful, non-native trees, shrubs, and herbaceous plants that are spread by global trade, human and animal transport, and gardening. They invade and have negative impacts on ecosystem function, native vegetation, and wildlife.
Localvore	Someone who consumes only food that has been cultivated locally.
Naked packaging	Products that are sold without packaging.
Natural resources	Raw materials supplied by nature.
Net zero	Achieving a balance between emissions produced and emissions removed from the atmosphere, also known as carbon neutrality.
Organic	1) Anything that was once a living organism. 2) Grown product that follows the guidelines of a USDA-accredited certifier. No chemical pesticides or fertilizer used. No genetically modified ingredients (GMOs) used.
Reclaimed	Waste materials refurbished into new products.
Recycle	Collecting and reprocessing a material to be used again (e.g., aluminum cans).
Reduce	To cut back on harmful habits that produce waste.
Reforestation	Planting forests on lands that were depleted.
Remineralize	To restore mineral content to an environment.
Renewable energy	Electricity from replenishable sources such as geothermal, hydropower, solar, and wind.
Single use	Items used one time and then discarded.
Sustainability	1) Environmental practices that protect natural resources needed by future generations for a positive quality of life. 2) The ability of a system to be maintained at a certain rate or level so that people, planet, and profit can exist without compromising one another.
Vegan	A diet and lifestyle that avoids all animal-derived products.
Wishcycling	An aspirational approach to recycling items without knowing if they are recyclable but expecting them to be properly dealt with.
Zero waste	1) Avoiding products that create waste to avoid contributing to landfills, incinerators, and waste discarded in nature. “Minimal waste” is a more realistic goal. 2) Approach that eliminates waste, does not consume new resources, recovers resources, and does not manage waste with incinerators or landfills.

Single-Use Plastics

Polyethylene bags are made from non-renewable resources. They are harmful to the marine environment as they never biodegrade and continue to damage natural ecosystems.

Biodegradable plastics are made from petroleum-based material, and they break down to produce microplastics. When they are sent to a landfill, they break down without oxygen to produce methane, a greenhouse gas with warming capacity 21 times more powerful than carbon dioxide.

Degradable plastic bags require chemical additives to break down into microplastics more quickly. They enter the food chain.

Compostable plastic bags are made from plant-based material like corn or wheat rather than petroleum. They biodegrade but require industrial composting down to their base organic components.

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Additional Resources

MSU Extension Publication 1782 *Composting for the Mississippi Gardener*

MSU Extension Publication M1194 *Mississippi's 10 Worst Invasive Weeds*

MSU Extension Publication 3121 *Using a Knife to Cut Fresh Flowers*

Flowers to Power Compost Making Process (YouTube video)

Most Consumers Want Sustainable Products and Packaging (Business News Daily)

Mayesh Design Star: Sustainable Mechanics and Flower Pillar (YouTube video)

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U.S. Composting Council

USDA National Institute of Food and Agriculture College Partners Directory

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