

GCA/ RHS Interchange Fellowship

Full Report 2016-17

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Introduction

The aim of the Interchange Fellowship is to

- *Foster British-American relations*
- *Promote horticultural studies*
- *Exchange information in this field*
- *To develop the horticultural and educational leaders of the future*

The Royal Horticultural Society is a membership based charity and part of their vision is '*To enrich everyone's life through plants and make the UK a greener, more beautiful place.*' (RHS 2017)

The Garden Club of America is also a membership based organisation, comprising of 200 member clubs and approximately 18,000 club members throughout the country. Their aim is '*To promote a greater understanding of the interdependence of horticulture, environmental protection and community improvement through educational programs and action in the fields of conservation and civic improvement.*' (GCA 2017)

It is geared towards somebody who has already undertaken horticultural training, or for recent college graduates in Horticulture, Landscape Architecture or a related field. I had previously trained at Great Dixter House & Gardens and did the Wisley Diploma and have worked in many other gardens like Tresco Abbey Gardens on the Isles of Scilly and Kerdalo in Brittany.

My fellowship entails doing a year long paid internship at Longwood Gardens and to take part in weekly learning opportunities, including trips to regional gardens, museums, nurseries and horticultural industries. I also have a \$5000 bursary to do some travelling with a focus on my own personal professional interests and to attend the American Public Gardens Association annual conference which this year takes place in Hamilton, Ontario, Canada. My

role also involves interacting with GCA clubs and members where possible and being prepared to give presentations and talks when required.

A large part of the experience at Longwood involves living and being part of the Red Lion Row community of Professional Gardener's students (a two year programme), interns and other international students/ gardeners including the Triad Fellows. I started in August 29th 2016 alongside other new intakes of one year interns and 9 month International Students. The Interchange Fellowship has been running for over 60 years formerly as the McLaren Trust. Longwood Gardens has hosted 5 British fellows overall including me. The three main focus of Longwood Gardens are *Horticulture*, *Education* and the *Performing Arts*.

There were many reasons I wanted to do the Fellowship and come to the USA, some of these were to:

- To have the opportunity to work abroad in a well resourced garden of high standards.
- Experience and learn about American horticulture. To learn about new plants and pick up new techniques and broaden my knowledge and skills.
- Explore the influences of British Landscape Architects Nigel Dunnett and James Hitchmough, and to look at examples like green roofs, rain gardens, bioswales and sustainable landscape design and approaches, many of which are compulsory infrastructures in many US cities, especially in the light of a growing demographic of people moving to urban environments.
- Understand better the influence of American plants and natural landscapes on historic and modern gardening styles in the UK and in Europe, especially prairie inspired plantings pioneered by designers like Piet Oudolf and Hermannhof garden in Germany.
- See as much natural landscapes and plants in the wild as possible in this large and ecologically diverse country. I am strongly interested in the relationship between nature and human culture, and how to work as closely as possible with nature as well being able to fulfil the human need to create, and how to maintain this vital connection. This in line with the strong growing native plants movement that has been occurring here and North America having an exceptional array of flora.
- Research the innovative community projects here as an extension of how a connection can be made between humans, nature and plants.
- Nurture existing professional and social contacts and to establish new international ones.
- Gain a better understanding of American culture

Rotations at Longwood

Production 1 (September 2016)

This was a great place to start and get an insight of what goes on behind the scenes, all the preparations that take place in terms of the growing of the plants before they are used for epic displays, and for the gardens general and everyday plant needs. I was there during the time of when they were preparing for their Chrysanthemum Festival and Christmas, so there was a lot of handling of 'mums' and Poinsettias, including tying pinching and staking.

I had the fortune to work with Japanese master Yoko Arakawa and got an induction into the art of Chrysanthemum growing, grafting and training, including getting a go myself at grafting. One of the main display features she works on is the Thousand Bloom Mum - a chrysanthemum with 1500+ blooms growing from one plant and trained onto a giant metal dome. Two are started two years in advance, one for display and one for back-up.

I was mainly based in the 'G33' Production Houses, that were situated on site of the garden but out of sight to the public except for tours. Here they generally concentrate on growing & nursing the tropical plants for the Conservatory. I learnt about the extent of how an environment can be meticulously controlled with light, water, nutrients and training, where even EC - Electrical Conductivity of the water and feed was measured and soils constantly tested, and how far plants can be manipulated. I experienced here a more computerised system and methods that are closer to commercial practices, with a similarity between meeting demands for a saleable flowering product and meeting demands for a high quality display.

They grow a lot of tropical plants indoors and outdoors, taking advantage of that hot and humid window in summer. With a taste for the rare and unusual, many are not commercially available or else have been acquired on Longwood's own plant-hunting expeditions.



A *Begonia* in mid change of a flower to a leaf. Begonias are short day flowering plants and you can change their biological nature even if they have started to flower or produce leaves by adjusting their light conditions.

Natural Lands (October 2016)

The Natural Lands department looks after an 86 acres meadow, peripheral and surrounding 'non-gardened' areas that includes riparian buffer zones, ponds and woodlands. They moved an entire road to make the meadows more ecologically complete. October was a great time of year to be in this department as it was still warm but not too hot, lots were still flowering and there was plenty to do. Although there is the threat of ticks and poison ivy, it is relatively low compared to the height of the summer, so it also makes for a more comfortable time to work out there. Here I got to learn more about land management, native and invasive plants species and wildlife. During my time here I planted out many plug plants to keep the meadows topped up with flowers, planting trees to develop the woodland edge areas around the meadow, and as part of water/ flood control, dealing with invasives including taking off invasive vines from young trees and chased deer away. The US has a lot of natural diversity, invasive plants behave here differently than they do in the UK - a lot of plants we use and have no problems with can easily become out of hand here. I had many discussions of why this was the case and it helped me to read different landscapes here better.



Natural lands in October - a sea of *Solidago canadensis*

I also took part in other activities like Rindai - the process of training and tying Chrysanthemum flowers around a giant metal dome structure so that the flowers are displayed at their optimum, and took part in helping to plant 115,000 bulbs of tulips, Hyacinths and Fritillarias outdoors on the Flower Garden Walk.

Indoors 1 (November 2016)

My first rotation in Indoors involved working on Longwood's epic Christmas Display. I got to experience first hand what it was like to set up their biggest display of the year and it was intense. Longwood's in house design team pre-determines what the theme and main planting design in the conservatory will be. Preparations like creating decorations or what to buy in are already thought about and worked on a year in advance. I strung up more christmas lights on different types of trees over two weeks than I had in my entire life. There were actually 2 - 3 'black out' days where the conservatory closed and staff members from all departments worked long hours to take down the Chrysanthemum display and install the Christmas Display - I helped to deconstruct the Thousand Bloom Mum which felt epic in itself. There was also the installation of the largest composite christmas tree they had created yet - compiled of white *Phalaenopsis* and different Euphorbias. Prior to learning

about the growing of different Euphorbias in Production like Poinsettia (*Euphorbia pulcherrima*) I was now seeing them utilised.



The composite Christmas tree of different Euphorbias and *Phalaenopsis*.

The Conservatory display houses spans 4.5 acres. For the rest of my time there I worked in the Mediterranean Garden and the Main and East Conservatory areas doing pruning to keep the perpetual growth of plants there in check. This included *Bougainvillea*, *Calliandra haematophala*, *Stigmaphyllon bonariense*, *Arbutus unedo*, *Tecomaria capensis*, *Pittosporum brevicalyx*, *Araucaria araucana*, and the untwining and retwining of *Hardenbergia violacea* from and on its' frame after cutting out the dead.

The conservatory was built from the offset in 1921 as a space to hold events and exhibitions in mind, as well as being an exemplary showcase of horticulture. So it includes a ballroom with the one of the largest Aeolian pipe organs in the world and an Exhibition Hall that has a reflecting pool that can be filled or drained according to the needs of its uses. Pierre S. Dupont was an inventive engineer, so it was a chance to work in an unique modernist conservatory environment, where hose pipes are hidden underground and winces can be raised and lowered mechanically for hanging baskets.



Me watering one of the lowered *Chrysanthemum* hanging baskets in the reflecting pool of the Exhibition Hall.

A few of the indoor display areas like the Mediterranean are designed by outside designers but Longwood still has creative licence to change the design and planting as they wished.

Research (December 2016)

Research does a plethora of things, this is where the Curator of the garden Peter Zale with a background in plant breeding is based. To maintain its bar as a top display garden, Longwood is always on the lookout for the next new plant that would work well in their garden, this they attain either through plant collecting, breeding and hybridising their own plants (like *Camellia* and *Clivia*) or trialling and testing the latest plants for their garden. Since 1956 they have been involved in 60 plant exploration trips in every continent except Antarctica, these are done in collaboration with other institutions or organisations like the USDA and range from going to lesser travelled places in Georgia or Vietnam to specialist nurseries in Japan. Most of the plant exploration work up until now has been done outside of the US but the current curator recognises that there is plenty of new plant opportunities to explore in their own country, so there is now more of a focus on that as well as expeditions abroad. This falls nicely in line with the country's increasing interest of using native plants.

Whilst I was here I helped do tissue culture, sow seeds sourced from a plant expedition in Georgia, listened in on their frequent trial sessions with the designers and horticulturists on certain plants, do plantings of Peonies and Lilies in their outdoor research field spaces, look after glasshouses, soil testing and assisted with a soil experiment. The tissue culture work is to safeguard their *Chrysanthemum* and *Canna* collections from viruses (the latter they have been doing foliage breeding), and they also propagate certain kinds of native terrestrial orchids. Virus free propagation can be made from the meristem tissue from the tips of the plant's new shoots or roots, and from the materials derived from these, so they keep a test-tube stock, which new cuttings are continuously made from to replace old ones and to keep the stock plants small. They are grown in an agar jelly medium that is regularly replenished. The soil tests that they do are basic PH and EC (Electrical Conductivity) ones for the growers and the gardeners. The soil experiment that I helped out with was to see if a more sustainable growing medium can be attained by using different percentages of a wood based mulch with two of the commonly used soil mediums in the garden. This included photographing and recording the average height of plants, taking leaf samples and stripping them of excess fertiliser with a mild acid, then drying these out and grinding them up into a powder to be able to measure their nutrient levels.



Tissue culture stock of *Chrysanthemum* and *Canna*

Library and Archives (January 2017)

In January I spent two weeks working in the Library and Archives department re-cataloguing their special reference horticultural collection. Longwood has a great library resource for students, staff and volunteers, and it was a chance to get to know what resources there were and how to use them, and to handle some rare horticultural books many of which belonged to Pierre S. Dupont's personal library, who had eclectic and varied interests. Through those books I travelled through time and history via the journal of the Gardener's Chronicle now extant as Horticulture Week, originally founded by Joseph Paxton and John Lindley in 1841 - going from the wonders of the botanical world first being introduced to the UK to times of austerity during the WWI and WWII. Even in those times seeing plants in the wild and understanding their habitat and growth were important, and it was interesting to see how ideas recirculate. I peered also into the worlds of esteemed botanists, plant hunters, naturalists, travellers like David Fairchild, Robert Fortune, Frank Kingdon-Ward, Joseph Dalton Hooker, Charles Darwin and Alfred Russel Wallace (the man who inspired David Attenborough to pursue and make a documentary about Birds of Paradise), many of them first-hand accounts.



Image of a oil palm tree - *Elais guineensis* from a Gardener's Chronicle journal, 1878.

Production 2 (February 2017)

For my second time round in Production, I spent two weeks in the Nursery their off site growing facilities - this is where most of the plants for Outdoor displays are grown as well as where a bulk of the Chrysanthemum growing and training takes place. I got to experience the 'mums' at a different stage and here we were at the beginning again - the Thousand Bloom Mum starts with 1 plant, great cascades 3, and big basket balls 18. Yoko Arakawa showed me how at this time of year they start building and expanding the domed frame around the Thousand Bloom Mum and training it onto it, and increasing it approximately 20 inches at a time per month, and just how exacting and meticulous she cultivated the plant, including tracking every action that she does with it on a calendar every day.

Then I spent two weeks in the Glasshouse Estate Houses, these were also situated in the garden and were unique in that they also had growing houses on display, giving the public a taste of what goes on behind the scenes as well a historical peek of what it would have been like in Pierre S. Dupont time's, a showcase of the cut flowers areas, a fruit and vegetable house that was also ornamental, and a beautiful soil shed with traces of the trolley tracks that they use to use for transporting materials. Here is where also a lot of the baskets and standards are created and I had the opportunity to create a round ball basket using Longwood's insider techniques.



A round ball basket of *Acalypha hispida* - the Longwood way.

One of the growers James Rockwell grows 4200 lilies for display per year for up to 6 successions. I experienced first hand the lengths they had to go to have the lilies flowering in time for different scheduled periods. Even in a controlled environment plants are affected by what happens with the weather outside. As well as planning when to start plants off, they are moved into cooler rooms to hold them back or warmer to speed them up. They even have cool storage facilities essentially huge refrigerators to keep them in bud or to force bulbs. For Easter lilies to make sure they flower in time for Easter a date that changes yearly, they count the lily leaves including micro ones wrapped around the buds, to work out the rate that they are growing at and to help them work out what they need to do.

Plant Records (March 2017)

I had to monitor what was flowering for Phenology records every week outside and in the Conservatory. These are important in understanding how climate change are affecting plants. I familiarised myself more with database BG Base, GPS mapping and exercised my plant identification skills when we had to go out and identify plants that needed to be labelled. I had the fortune to be integral to mapping all the trees and shrubs in the Main Fountain Garden very soon due to be open after its long awaited completion of its restoration. Plant Records - a tiny department is like the nerve centre of the garden quietly grafting away sometimes even unnoticed, but if their activities stopped the garden would probably descend into chaos.

They make and print the ever changing plant labels, play a part in ensuring that plants are identified and named correctly as possible and help keep up the taxonomical standard of what is expected of a top horticultural institution, as well as provide access to information to the public and staff members via resources like their public interface [Plant Explorer](#). Whilst I was there it really helped give me an insight and overview of the different cultures of the different departments and even between gardening teams, and the complexities of all of these together. I also learnt how to really mine for information to find what I was looking for, and it gave me the opportunity to use more of the library and look at specialised plant books and floras too.



GPS mapping some *Thuja occidentalis* with a Topcon positioning system device,

During this month I also took part in the burning of the meadow as a spotter, where I helped to look out for any spot fires in places where they shouldn't be. This is a way of managing the growth of the meadow especially invasives and about a third of the 86 acres meadow was burnt. Horticulturists trained as firefighters took on this epic task. How the different areas burned was dependent on the growth and on the environment to the very moment - from the movement of the wind to the humidity of the air. An entire landscape can be transformed in 15 minutes.



Meadow burn

Outdoors Display 1 (April 2017)

This is the largest department in the garden, which is divided into three teams, one team looks after areas like the Main Fountain Garden, native plants woodland area Peirce's Woods, love temples, lakes, the Hillside Garden area where there is a chimes tower, waterfalls and other water features behind the Main Fountain and larger landscaped areas. One team looks after the prominent plant display areas like the Flower Garden Walk, the entrance area around the Visitor Centre, and spaces like the Wisteria Garden and Peony Garden. And another team looks after the Idea Garden - a semi-trials and display area intended to inspire and educate the public and home gardeners, and includes a vegetable garden and perennial beds.

Unlike the conservatory Outdoors Display has some areas where the gardeners themselves makes their own planting designs and plant choices, and I had the chance to work with some very talented and knowledgeable individuals - Roger Davis who always keeps the Visitor Centre's entrance looking impressive and immaculate - a good punctuation mark before they enter from the car park into the garden proper, Sam Hoadley tucks away many treasures and gems on the Hillside area to culminate into a plantsman's paradise, Mark Mosinki is a

container whizz and Tim Erdmann makes a wonderland of his vegetable garden with his unusual vegetables and adventurous structures.

I helped prepare the soil and beds of the vegetable garden for planting and also worked through the Perennials Border with Mark Mosinki - this was a last chance to work through the beds that Mark didn't get a chance to get to over autumn - dividing and moving plants to reduce them to a more favourable size, to move them to preferred positions or to help fill in gaps in the planting. Especially unwieldy plants that get big and bulky easily and had a tendency to collapse like *Eutrochium fistulosum* 'Gateway' (formerly *Eupatorium*), *Vernonia altissima* and *Amsonia hubrichtii*. As it can get very warm at this time of year, we made sure that the plants were well watered in. I also liked Mark's approach to mulching which was adding a thin layer of a very fine, dark and more mature pine bark mulch on the surface of the beds and gently tousling it into the soil so that it looked more natural rather than the mulch just sitting on top. He said that he felt that it still helped suppress the weeds as well as enrich the soil lightly. I also had the highlight of putting together some containers with him.



Containers I put together with gardener Mark Mosinki for a spring display. A mixture of purple brassica vegetables, *Oxalis*, *Cordyline*, *Cynara cardunculus*, *Euphorbia amygaloides*, *Heuchera*, *Doronicum* and *Digitalis purpurea*.

Indoors 2 (May 2017)

In my second rotation of the Indoors department I chose to concentrate on the specialist areas - orchids, the Tropical Houses and the Waterlily Display. I learnt more about the botany of tropical plants and helped refresh a section of the permanent display in the Palm House by removal and pruning of old plants and installation of new ones. In the orchids section I helped do potting on which is the large amount of the work that goes on here, and helped with one of the changeovers of the orchid displays which showcases 200-300 flowering ones at a given time. Orchids have an important place historically at Longwood as Pierre S. Dupont and his wife Alice had a passion for them and they were the first plant collection started there back in 1922. Greg Griffis is the very talented specialist grower of this area, and has a background in the retail and wholesale growing of orchids in Hawaii. They have approximately 6200 orchids and 2500 taxa and of these he is able to get 90% of them flowering. He is very particular in his care of them, including positioning the active buds of each plant to face the sun in the south and removing pernicious weeds with tweezers or any other tools sterilised by a blow torch between each plant, because orchids are particularly susceptible to getting viruses.

The Waterlily Display is one of the classic and traditional displays of Longwood Gardens, over 100 hardy and tropical waterlilies and lotuses are exhibited, and putting it together is quite an undertaking. A lot of work takes place behind the scenes well before the waterlilies are put out for display from Memorial weekend (late May) to mid-October. In May the scene changes dramatically within a few weeks, from the ponds being completely empty to suddenly filled and surrounding beds planted up with water plants. It is one of the privileges of the Interchange Fellow to be able to be fully involved in its installation.



The Waterlily Display

The whole display starts off very small, when the display is dismantled in October the core collection of the waterlilies are re-propagated by taking small tubers from each one, and are started off in lots of yoghurt pots in a small greenhouse. Then during the growing season they are transferred to tanks. Later as they get bigger, more tanks are set up inside to accommodate them, then eventually when the ponds are refilled again and gently heated they are transferred outside.

The stars of the show are the *Victoria* lilies and Patrick Nutt the first horticulturist to grow it at Longwood gardens used notes from early publications from 1853 - when the first *Victoria* lily was brought to and successfully grown in the US, and learnt how to hand pollinate them (in the wild they are traditionally pollinated by beetles), and hence developed *Victoria* 'Longwood Hybrid' in 1961 - a cross between *Victoria cruziana* and *Victoria amazonica*. This hand pollination technique is continued earlier in the year in March by horticulturist Tim Jennings who has been at Longwood for over 20 years. As the *Victoria* lily only opens by night, this particular task has to be executed then too.

The final transfer of the *Victoria* lilies from greenhouse to the pond takes about three people to transfer each plant. First the tops of the leaves has to be covered with brown paper, so that they are protected during the move. Then they are placed in a bespoke made sedan like structure, where the box part of the contraption comes away from the main carry frame, so it can be lowered gently into the water. In the ponds the leaf pads can grow up to 4-5ft or more

across and the flowers lasts for two nights - the first night it flowers they are creamy white, pineapple scented and are female and the next night they are pink and male.

May also saw the grand opening of the Main Fountain Garden, a series of special previews were made including a wonderful staff and volunteers evening. The fountains are choreographed to music, featuring state of the art technology jets and sprays including ones that spurts out fire.



Main Fountain Garden music and light display.

IPM - Integrated Pest Management (June 2017)

It is rare to come across a specific horticultural department dedicated to dealing with pests and diseases. Horticulturists still treat their own problems, but the department helped to advise and support, looked after the pesticide store and were aligned with the Research department. The range of work I did there included routine checking of areas for any problems with a hand lens and monitoring traps, going on impromptu call outs to look at dying trees etc. and work out what was ailing them, making 'fuzz' - a fungal growth for concocting compost tea, dyed and put out biological additives into the outdoor ponds to help prevent algae and to boost the health of the pond life, and tested orchids for viruses. We put out beneficial insects and blasted out pollen from a customized drill device to supplement their feeding. We also bred some of these like the Vedallia beetle that has a particular appetite for Japanese Cushiony Scale, and in turn tried to breed the pests themselves so that there was enough of a food source for the beetles - it is harder to breed pests than it is to keep them away. They showed me how they looked at Growing Degree Days to calculate

the optimum time for certain pests to appear, and how they treated the Emerald Ash Tree Borer by tree injection - a beetle that is devastating ash trees in the States. The pests and diseases differ between the US and the UK, but it was interesting to see their approach and methods, and it helped me hone my diagnostic skills.



Blasting out pollen to supplement the feeding of beneficial insects.

Education and a last Outdoors (Jul-Aug 2017)

Longwood is known for excellence in Education and I wanted to make the most of this and get an insight of how they approached this area, especially as I have a desire to run a school in the future or have educational elements to what I do. I primarily worked with Continuing Education. They also have their own Fellows Programme which is another very intense fully immersive residential learning experience, designed to train people who are or aspiring to be leaders in public horticulture and a School and Youth Programme. Whilst I was there I helped review new online courses they were creating including a botany one and an orchid one to run alongside their Orchid Extravaganza display, and helped put together images from their digital archive and plant records for presentations of different orchid genera. I assisted in classes that they had like their 'Floral Fun' flower arrangement, and 'Annuals, Perennials and Vines' classes, and sat in on Summer Camp sessions for 5-13 year olds from horticulture, art to science activities and on a Fellows coaching session.

I also spent a little time working in the area that I have enjoyed the most - the Outdoors department. I spent a few days with the vegetable gardener Tim Erdmann again and having helped prepare some of the beds earlier in the year, it was exciting to be harvesting many different kinds of produce from melons, okra, peaches, watermelons to table grapes that had enviously and effortlessly ripened outside because of the extra sunshine and light intensity that they have compared to the UK.

I also spent a few days working with Pandora Young in the native woodland garden Peirce's Woods, as being interested in nativity of plants this was the only area I had not managed to cover. It was great to see that she was trying to garden on the best of ecological principles and practices as possible including thinking about climate change and how to plant most resiliently for the future. She utilizes Hügelkultur which means hill mound or hill culture, and involves building mounds from packing together tightly different sized logs and branches, then covering them with compost. The idea is that they will slowly decompose and release nutrients into the soil over a long period of time, help improve the soil and sequester carbon. In this instance Pandora has been using it to help improve the drainage or control runoff of water and in some ways it mimics the natural fertilization process that the forest floor gets from leaf litter and dead wood. They in time make great microclimate zones as well for growing tricky plants like Trilliums and terrestrial orchids.



Me air spading to decompact the soil around tree roots. Photo courtesy of Pandora Young.

I tried out air spading - Pandora uses this to alleviate soil compaction around tree roots, and in the US gardens have started to use it to clear ground and remediate soil. It is a strange sensation as you are all suited up, and essentially you blast strong pressure of air into the earth, soil flies everywhere and it is like you're in a sand storm. We made many holes around the ground and filled them up with compost after. Then she leaves it for about a year before she does anything like plant in this area, and does a section each year in succession. The areas where she had air spaded and planted up were the the healthiest mass plantings that I had ever seen in that scenario, with barely any casualties.

GCA Funded Trips

Vermont

In October I went for a few days to Vermont primarily to see the renowned 'fall' colour there - something I have always dreamt of doing, especially because I am drawn to and is strongly interested in woodland gardens and autumn interest. Native woodland gardens - wild and cultivated have excited me a lot here. Little did I know that I had inadvertently aligned myself to a group of 'leaf peepers' who annually make pilgrimages to different parts of the country especially in the North East and Vermont to see the autumn colour. There are leaf colour forecasts online of when leaf colour in different areas are at their best. I was not disappointed. I went up to visit my friend Helen O' Donnell also a garden designer and horticulturist in Dummerston, Putney, South of Vermont, who with her family owns and runs Bunker Farm, where she has a small nursery and cut flowers business amongst many other things, as well as being a full time mother. The 169 acres farm is a land conservancy project with Vermont Land Trust and also does small scale production of meat from humanely pasture raised cows, pigs and chickens, and seasonal turkey, and maple syrup (they won Best In Show at the 2016 Maplerama tasting competition), and is also an agricultural training centre for local students and the community, with an iconic looking red barn at the heart of the farm, which they use for selling their products and putting on or hosting events. The farm is a very inspiring symbiosis of different elements working together, Helen and her family (her husband, her sister and her sister's husband plus children) practically have other jobs as well as running the farm, fuelled by innovative thinking, hard work and passion the business is slowly growing steadily and looks optimistic to sustain them more in the future.



The red barn of Bunker Farm.

Whilst I was there I went to see the nursery Cady's Falls further up north - purveyors of rare and unusual perennials, alpines and dwarf conifers. They are one of the very few small independent nurseries left that doesn't do mail order. It was so sad for me to learn that although their garden will stay open to the public, the nursery business side will be winding down in 2017 as they retire. Their nursery set-up is very admirable Don and Lela Avery originally from California were novices to the ornamental nursery trade when they bought the land, renovated the property and started their business here 37 years ago, but with good mentorship from some key plants enthusiasts in the area, they are a classic example of when the line of amateur and professional blurs, and definitely at the point I saw the nursery, it was a well oiled and seasoned operation - with special growing techniques and environments that they had developed themselves over the years. The organisation and work efficiency of their work place was to die for. I felt honoured to have been able to witness them at this stage before they closed down.



Cady's Falls garden

Helen also took me around some smaller private gardens that she was working at, had worked for or knew. These were in the Dummerston and Peterborough area in New Hampshire. On one of these days we were also joined by a mutual gardening friend Laurie Merrigan who I had met and lived with at Great Dixter and often works with Helen. These included:

A garden that sat on top of a hill and overlooked other rolling hills covered with trees with its pool and arbor seating area perfect for viewing the autumn colour.



One of Helen O'Donnell private client gardens



One of Helen O'Donnell private client gardens - pool covered over winter and pond overlooking surrounding hills.

Juniper Hill garden of photographer Joseph Valentine with many influences from the UK from Hidcote, Dungeness, to Highgrove and Bannermanesque designs. It was a great example of how a smaller garden can have many rooms and change with each step.



One of the garden rooms just in front of Joseph Valentine's house



Juniper Hill Garden with Bannermanesque folly house against natural backdrop of woods

Garden designer Maude Odgers has her garden as the central focus of the house, with a 180° view from her conservatory/ dining room windows. My friend Laurie Merrigan points out that this was a more traditional American way of gardening with it being more open and having flat beds.



A snapshot of Maude Odgers garden

Michael Gordon's garden, a townhouse garden utilising much of a steep bank. Michael is an optometrist by profession and has steered a lot of the public plantings in Peterborough. He hosts garden tours in the UK and frequently blogs on his site [The Gardener's Eye](#).



Michael Gordon's garden

Gordon and Mary Hayward's garden. Gordon Hayward is a garden writer and Mary is British - another garden that showed British influences. At one point I felt like I was standing in the British countryside somewhere from the Thomas Hardy era. It revolved around a 200 year old farmhouse and it is also another great example how rooms can be created in a small garden and has a story to tell through every step.



One of the rooms in the Hayward's garden.

Some of my favourite aspects there were the huge field maple shaped hedges and conifers that had the base of their legs denuded by deer during the winter, but now took on a sculptural quality.

What all these gardens shared were stunning natural backdrops. They showed some of the best examples of how to blend in with or borrow the neighbouring landscape well, and showcased the best of nature, a compliment to the natural beauty that's already around.

Florida and New Orleans Trip

In January 2017 I had the opportunity to do a trip to Miami, The Everglades and drive from Pensacola to New Orleans along the Gulf Coast and visit some key nature reserves on the way. I have been impressed by how well tropical plants grow in the mid-atlantic region despite the brevity of summer. The displays in the Conservatory of Longwood Gardens has also peaked my curiosity about tropical genera. This is an area of plants that I have the least experience of seeing in an environment where they grow naturally, so with the south having a sub-tropical to tropical climate I thought this was a great chance do this. I also wanted to learn more about the mangroves and swamp ecology that exists down there.

In Miami I visited The Kampong - the former garden of renowned US botanist David Fairchild, Montgomery Botanical Center where they specialised in palms and cycads - named after Colonel Robert H. Montgomery who was also a big supporter and friend of Fairchild, and set up Fairchild Tropical Botanic Garden which he named in honour of David and which I also paid a visit to, and last but not least Vizcaya. It was interesting to see them all and to understand them in a context of a group, because although they contributed a different element to the horticultural scene there, there was an interconnection between them which I felt I would have missed if I had only gone to one of them.

The Kampong had an amazing collection of fruit and flowering tropical trees including *Strychnos vomica* - the 'Kaffir Orange' (that's not actually a citrus but in the Loganiaceae family) and has a sweet edible pulp but strychnine (poison) in its seeds, breadfruit - *Artocarpus heterophyllus* and a fruit called *Synsepalum dulcificum* that makes bitter foods tastes sweet. That was the first place where I witnessed the hard coral rock that Fairchild had to dynamite to make holes in it to be able to plant his trees into the ground.



A recreation and interpretation of David Fairchild's study at The Kampong to help give a sense of the person and the place.

Fairchild Tropical Botanic Garden had an extraordinary Education programme with an actual High School on site teaching Botany. They have a micro-propagation bus for propagating native Floridian orchids to install in urban environments as a conservation project and contribute to serious scientific research - for example they are working with NASA

experimenting on growing in a soil that has been synthesised to be like that of the planet Mars and is feeding their data into this.

Vizcaya was an ornamental treasure - a Mediterranean influenced garden especially Italian Renaissance, it's the former decadent garden of rich businessman James Deering built in the early 20th century - a winter home that he barely stayed in, but who Paul Chalfin, a former art curator, painter, and interior designer and project director of the garden went all aboard with design and creativity. Inadvertently this indulgent project ended up preserving some precious ecosystems that are highly threatened today like mangroves - they have the largest mangroves that exists on the southeast coast and hummocks/ hammocks - islands different ecologically to the rest of its environment e.g. islands of subtropical hardwood trees above wetlands. Deering tolerated preserving these on his estate because of the business potential of the hardwood but never came to utilising them. The garden is a great example of how an ornamental garden can be so popular. It is well placed because it is just outside of Miami City and both here and The Kampong have stunning locations along the coast with mangroves surrounding them - especially for Vizcaya - it is definitely what helps make its enchantment.



Vizcaya is a very extreme environment for plants - a lot of trialing and testing were made before they found the right plants for their beds and spaces.

I also spent a day visiting a small section of The Everglades in the West and going through the Big Swamp Cypress Preserve. Here I saw *Metasequoia glyptostroboides* - the swamp cypress in a context that made me see them differently - the fact that they were designed for

swamps drove home and their quirky 'aerial knees' now look like they were potentially designed to anchor the trees. I saw Tillandsias like *T. fasciculata* with new respect when I saw them growing naturally in the trees. And mangroves that I only saw as a recreated condition in a box at Kew Gardens and an ecosystem from far away lands that I found hard to connect with, I was now enraptured by - how they were teeming with life - with crowds of small salt water crabs and birds gliding through the tunnels of growth, magical yet completely foreboding at the same time. It showed me how important it was to experience different ecosystems even if they're unfamiliar. In this more globally connected world, now more than ever local actions affect global ones and vice versa. If we don't have a better understanding of what's out there - how can we even begin understand why there is point in caring and being good stewards of our lands.



Taking a boat through the Mangrove Swamps characterised by *Rhizophora mangle* (red mangrove), *Avicennia germinans* (black mangrove) and *Laguncularia racemosa* (white mangrove).

Two nature reserves that I stopped at enroute from Pensacola to New Orleans in Alabama were:

Bon Secour National Refuge and Grand Bay National Estuarine Research Reserve (GNERR). At Bon Secour I saw the most unique ecosystem that I have personally ever come across - an unusual and usually 'incongruous' layers of white sand, fluffy soap bubble like moss, small shrub oaks (possibly *Quercus geminata* & *Q. myrtifolia*), Saw Palmettos (*Serenoa repens*) and then long needled pines. This area was the place that we start seeing some of the live oaks - *Quercus virginiana* thick with spanish moss *Tillandsia usneoides* and

the resurrection fern *Pleopeltis polypodioides* at its most glorious. The latter an epiphytic fern can lose 97% of its water, dry to a crisp and come back to life lush and green when water touches it again. GNERR do important work to conserve and educate the public about the delicate freshwater ecosystems that meet the sea especially the Mississippi basin and had different examples of habitats around these areas like wet savannas habitats where carnivorous pitcher plants *Sarracenia* will carpet in spring.



Barataria Preserve - sweeps of Spanish Moss - *Tillandsia usneoides* on the trees.

Other sites that I went to visit were Crosby Arboretum in Picayune, Mississippi - a man-made environment that looked completely natural designed to educate and demonstrate different types of natural habitats indicative of that region and bayous in the Barataria Preserve in Louisiana just outside of New Orleans. In the city itself I went to Longue Vue - one of the few gardens intact designed by Ellen Biddle Shipman (1869 - 1950 - one of the first female landscape architects in the US). She was interested in naturalistic plantings and worked with botanist Caroline Dorman to create a Wild Garden as well as formal areas. I also visited gardens of GCA members in the Garden District and the most inspiring and amazing school growing project Edible Schoolyard Project at Samuel J. Green Charter School, where children learnt how to grow and cook their own food, and have horticulture integrated into their curriculum all with a diverse and New Orleans flavour, and Grow Dat an urban farm project in the middle of a public park that pays for teenagers to work there and 'nurtures a diverse group of young leaders through the meaningful work of growing food'.

APGA Conference 2017

The American Public Garden Association conference is one of the major events of the year for public horticulture in the US. This year's theme was Celebrating Connections and it took place in Hamilton just outside of Toronto in Canada. It included tours of public spaces, small and large gardens in the area, and talks and workshops on topics widely ranging from learning about indigenous cultures, culturally diverse leadership and how to manage soils and grounds more organically, to niche information for plant record keepers or fundraisers. Some of the sessions that I went to looked at how public gardens can play a role in revitalizing communities, and Denver Botanic Gardens talking about their exciting new steppe garden. I also gave a poster presentation on sustainability and community growing.



Niagara Falls on the Canada side.

One of the highlights was seeing Niagara Falls on the Canadian side - it is still an awe-inspiring natural phenomena, but it was disturbing to me to see how built up it was around it like a theme park with casinos and hotels, like the equivalent of seeing a wild animal being caged. We learnt a bit about how the natural areas in the state park was managed and the well known Niagara Parks School of Horticulture is situated there. I also enjoyed the Royal Botanical Garden's new rock garden in Hamilton and the sustainable urban gardens and parks tour in Toronto, in particular Corktown Common a converted

brownfield site that is now maintained entirely organically, and Don Valley Brickworks Park - a former quarry and brick making facility turned into a beautiful natural quarry garden and is now an ecological education centre. Both are innovative examples of how spaces like these can become of social value.

Detroit

After the APGA conference, I went to Detroit to see the community and urban growing projects there, specifically looking at the sustainability of them. I was lucky that Matthew Ross - the Continuing Education Coordinator at Longwood who is a native from there offered to give me an introductory tour around the city for the first few days.

I had read about Detroit many years ago. I had always been curious about the news of community projects, urban farms and creativity that had sprung up from there, despite the fact that the metropolis had been left in a dystopic state after their car industry had collapsed. It was like no other city in the Western hemisphere that I had ever visited. What I hadn't realized was just the scale of how wealthy the city had been in its hey day and I have never been to a place where so many grand buildings stood derelict. It is said that the city looked like the aftermath of an apocalyptic natural disaster, but having been to New Orleans and seen the remnants of the effect of Hurricane Katrina there, Detroit looked far more in ruins. Four lanes highways that must have been built to accommodate a lot of traffic at one time stood almost empty at times. There was a phase of arson when a lot of the empty buildings were burnt down, many of these still stood like relics, on what almost looked like uninhabited run down streets, except there were still signs of people living amongst them. Greenery had already taken over empty lots and has become the perfect habitat for wild pheasants, a uncanny juxtaposition of urban decay and urban idyll.

The city was less regenerated than I thought it would be, it has just got out of the largest municipal bankruptcy in the US in 2016 and although slower than in most places, the tension of that happening still takes place. When you come to a place like this especially when you are visiting community based projects - social problems - the disparity and inequality between rich and poor, the animosity between different races and the concern of crime and violence are more pronounced. There are familiar anxieties that as the city regenerates the ones who have suffered already will be the ones who loses out, so there is a general suspicion of outsiders and I felt I had to work extra hard to come across as approachable and that I was genuinely just interested in what people were doing. But the unique thing about Detroit is that I have never seen so many community projects and green spaces in a city, there were literally hundreds, including right in the heart of downtown - the organisation Keep Growing Detroit has an urban farm there opposite an imposing MGM casino and hotel resort building, and their business supports many projects in the area. There have even been commercial enterprises aiming for Detroit to be the capital of urban farming in the country. This coupled with the lack of public transport and it being geographically flat and

bikes becoming an important asset¹, there seems to be a desire to push for a more green economy, and one wonders if there is a possibility that this city could regenerate a bit differently.

Matthew took us to many key cultural sites including Belle Isle Park - a wonderful public park with a beautiful conservatory, aquarium and nature sites next to the Detroit River, historic Cranbrook House and Gardens, one of the largest green roofs in the world at the Ford Rouge Centre and Lafayette Green - a slickly designed urban food garden created for employees of a software corporation next to their building, to encourage them to be active and as the company's expression for giving back to the city. The software company has since left, and it is now looked after by organisation The Greening of Detroit whose primary focus is to reforest the city, but has taken this on as part of their remit for repurposing land to create beautiful and productive spaces, and involving Detroiters through job training programs, community engagement and education.



Matthew Ross, gardener Molly Hop and me at Lafayette Green. Photo courtesy of Matthew Ross.

A lot of projects were very fragile and vulnerable, many of them relied on funding from the same small pool, though some did try to make their projects into businesses. Earthworks for example has tried to create a model plot prototype, which individuals can replicate and generate an income from. Some of the organisations saw turbulent changes, there were familiar cases where for example the main person/ people who led the project was the

¹ (it is not unknown that there are people in Detroit who commute miles to work by foot, including a known case of someone doing 13 miles each way per day)

driving force of its existence, and when they left for whatever reason (usually because they found it too hard to sustain themselves or the project was too much pressure), the project would lose momentum and may even disappear. It was great though to see that some projects that I had read about over 10 years ago were still going strong like The Georgia Street Collective for example started by Mark Covington an ex-environmental services worker who lost his job and wanted to make a difference to the area that he grew up and lived in, by clearing and picking up the rubbish of an empty site near his grandmother's house, and in order to not have people trash it again he started growing vegetables there. Since then it has gone from strength to strength and now there is a small community centre, a library and he is full flung into animal husbandry, because he witnessed a young girl who had grown up far too quickly for her age, become the child she was again when he accidentally inherited a small baby chicken.



Meeting Mark Covington at Georgia Street Collective Community Garden. Photo courtesy of Graeme Walker.

For Brightmoor Alliance it is a similar story - a run down neighbourhood where the people took matters into their own hands to improve where they lived for themselves and their children. This has resulted in what appears to be a positive contagion where residents have taken down fences on their properties to create a continuous green corridor that children and family can go through freely. There are many different types of projects that go on there from farming, gardening, art to dance, and there were interesting signs in the area of mini educational stations and reclamation - like a rainwater collection site and a special youth garden, an artisan shop of things made by the locals and the brightening and painting of an abandoned petrol station site.



Brightmoor Alliance community. Photo courtesy of Graeme Walker.

It helped that the site was actually located next to a really beautiful river and it was the case for another project that I saw called Hope House that had a rain garden and the backdrop of some nearby woods, places anywhere else would usually go for a premium. Religion was aligned with a lot of the projects, but a lot of churches or organizations were involved because they felt like it was part of their duty and moral responsibility to help people in need, rather than just a chance to run their dogma or propaganda. It was a surreal sight to see a Capuchin monk dressed in a traditional habit taking children to an urban farm to show them what a vegetable looked like.

Longwood Field Trips and Activities

Field trips and activities takes place on a Thursday and just a few examples of these have included the Mid-Atlantic Nursery Trade Show in Baltimore, Unionville Community Fair, New York Botanical Garden, Woodlands Cemetery Garden in Philadelphia and Phillips Mushroom Farm in Kennett Square. I also took part in the Philadelphia Flower Show the oldest and largest indoor flower show in the US as a Horticultural Passer, they had a section where amateurs can enter their plants to be displayed and judged, and my job was to check that the plants were free of pest and disease before they were allowed to be entered.

Other trips and activities in my personal time

In my own personal time I helped a community garden called Emerald Park in Philadelphia, to consult on and develop the idea of making it into a woodland garden inspired by native plants and to improve the wildlife in that area. I also did a lot of other trips like travelling to North Carolina through the Appalachian mountains and Chicago - kindly hosted by GCA member Celine Lillie and the Lake Geneva Garden Club.

Thank you

I would like to express my gratitude so far to the RHS, GCA and Longwood Gardens for this amazing opportunity. I would like to give special thanks to Celine Lillie, Betsy McCoy, Brian Trader, Janet Bagnell, Rowenna Wilson, Doug Needham, Sarah Cathcart, Matthew Ross and Glenn C. Eyck for taking me to your cabin in Moshannon State Forest Park, PA and showing me sledding, canoeing, amazing wild flowers and so much more, the numerous staff at Longwood who has patiently given me their time and enthusiasm, friends I have made here and back at home who have been incredibly supportive, gardens that have opened their doors to me and the GCA members I have met who have kindly & generously given me their hospitality, welcome and support.

More information and photos from my Interchange Fellowship and States will be posted on www.hortiventure.com once it is renovated.

All photos are taken by and copyright of Maggie Tran except where mentioned.

Cover photo: Edible Schoolyard Project New Orleans. Left to right Linda Miller the Scholarship Chair of the New Orleans Town Gardeners GCA club, Alisha Johnson - Development Manager of Edible Schoolyard New Orleans, me and Bonnie Kingdon - Development Assistant of ESYNOLA.