The Gardener's Pen

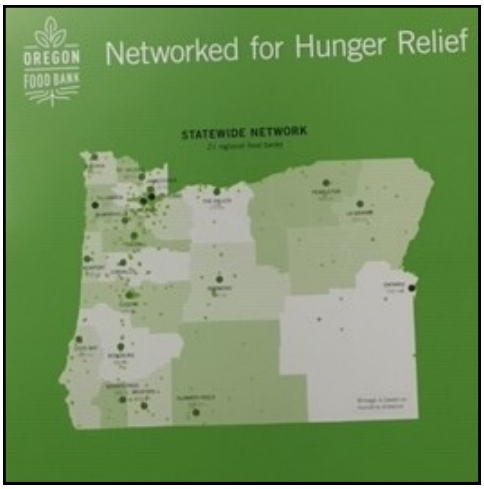
A Publication of the Oregon Master Gardeners™ Association in Cooperation with OSU Extension Service™

A Big Thank You to Katherine!

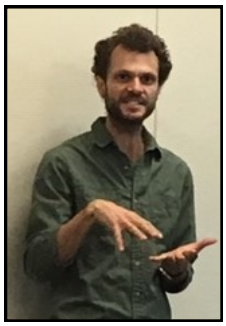
Having a little fun at the Board of Directors meeting last November

Katherine, your financial expertise and faithful service has benefitted OMGA over the years. OMGA is financially solvent and respected throughout the horticultural community because of your diligence in WATCHING EACH PENNY AND DOLLAR!

Guided Tour at the Oregon Food Bank at the 2018 November BoD meeting



Effective and efficient system in use all year for receiving and distribution of +14 million lbs. of produce annually



Derek Dinihanian, our tour guide

For more info, contact him at: Ddinihanian@ oregonfoodbank.org

Superbly organized, using a large volume of volunteers to handle vast quantities of food - crated potatoes

OREGON FOOD BANK OREGON FOOD BANK

Use of computer technology and transportation system to supply 200 hunger-relief agencies throughout the state

Serves Oregon's need through generous, continued donations because Oregonians care - vegetable gardens onsite

January 2019

Gardening Technology

OMGA™

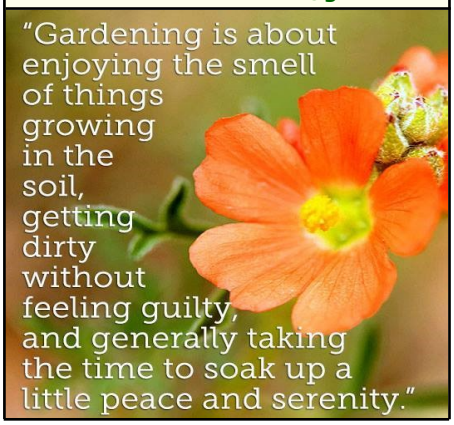
Inside this issue:

The deadline for the April 2019 issue is: March 23rd, 2019

"Gardening Solutions"

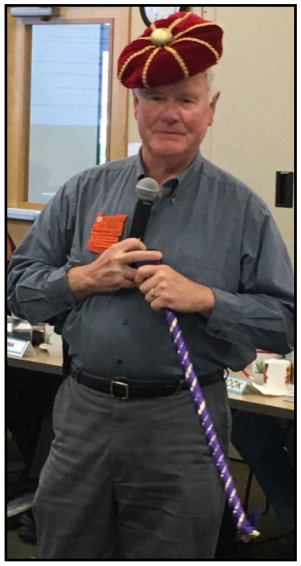
Send your articles to:

GardenersPenNewsletter@gmail.com



from the President's desk...

...by Eric Bosler, 2019 OMGA President, Central Gorge



As the photo attests there was some silliness at the OMGA 4th quarterly meeting. Forced by popular demand to wear the 'crown', a newly elected OMGA President has no choice but to submit. The acceptance speech was short with a nod to those who recruited the candidate and supported him during the run-up (2018 President Elect) year. Special recognition to Sue Nesbitt, without whose commitment to serve as Past President in 2019 this candidate would never have accepted the position. Sue is the most organized person I know and has promised to keep me on track.

A warm welcome to Chris Rusch, from Douglas County, who will be bringing her considerable organizational skills and passion for the Master Gardener program to OMGA and serve as President Elect. Not only is the position a vital function it also carries the commitment to subsequently move on to the Presidency. Chris' participation at the 2018 Retreat in December was very positive.

Sincere gratitude to Marcille Ansorge who will continue as OMGA's Secretary. She has an eye for detail and commitment to our organization has been of great value this past year and will be so again in 2019. Keeping accurate minutes at OMGA's lively meetings can be a challenge but Marcille sorts it all out and does a great job of producing the minutes which are a critical document in any organization.

OMGA's Treasurer for 2019 will be Patrice Sipos from Douglas County. Her professional expertise provides the tools needed for the job but more importantly, Patrice has a passion and commitment to the MG program and will be an outstanding addition to the OMGA team.

Personal circumstances were the primary factor in Katherine Johnson's decision not to pursue another term as Treasurer. The time and dedication that she has given to OMGA over the past 11 years is truly amazing.

Julie Huynh is joining the OMGA Exec Committee in the role of 2nd Vice President. In 2018 she served with Barbara Davidson who will be continuing in the Historian role. Julie is a dynamic and energetic supporter of the OMGA mission and is looking forward to working with the BoD.

THANK YOU!

To salute individually all those who are taking on other roles in OMGA for 2019 would push this message way past what our Gardener's Pen editor would allow. Just let me say that; "Each of you are appreciated and your commitment to the MG program is what make us so successful."

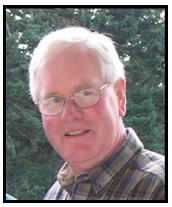
We are seeking someone to fill the position of 1st Vice President. Due to very unfortunate family health issues our 2019 candidate had to step aside. This role is critical to OMGA leadership and it plays a large part in our annual educational program, the OMGA Mini-College.

Let me close by saying how exited I am about the upcoming year. Lots to do but I have the support and encouragement of many wonderful people.

2019 OMGA Leadership

...by Eric Bosler, OMGA President-elect, Central Gorge

PRESIDENT



Eric Bosler
Central Gorge

PRESIDENT ELECT

Chris Rusch
Douglas County

SECRETARY

Marcille Ansorge
Tillamook County

TREASURER

Patrice Sipos
Douglas County

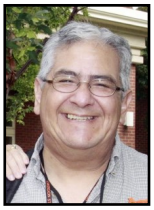
PAST PRESIDENT

Sue Nesbitt
Yamhill County

2 ND PRESIDENT

Julie Huynh
Lincoln County

DATABASE MANAGER



Seamus Ramirez
Clackamas County

NEWSLETTER EDITOR

Marcia Sherry
Yamhill County

1 ST PRESIDENT

VACANT

HISTORIAN

Barbara Davidson
Jackson County

APPOINTED POSITIONS

Web Master:
Jim Parks

Extension Educator Grant Chair:
Jeanine Johnson, Central Oregon

Send-A-Friend Chair:
Vacant

Karl Carlson Fund Chair:
Barbara Casteel, Tillamook County

Search for Excellence Chair:
Chris Rusch, Douglas County

Longevity Recognition:
Marcia Sherry, Yamhill County

Audit Committee Chair:
Vacant

Finance Committee:
Vacant

McNeiland Scholarship:
Vacant

Serving on the OMGA Board is very rewarding and interesting.

It is an opportunity to learn about the amazing things that Oregon MG's are doing and to help all of the Oregon chapters fulfill their goals.

FROM THE PAST PRESIDENT'S DESK

...by Sue Nesbitt, OMGA Past President, Yamhill County

I have truly enjoyed serving as the President of the OMGA this past year. While we experienced a few bumps during the year we also had a lot of successes due to the teamwork of everyone on the OMGA Board. **Thanks to everyone who worked so hard to make this year successful.** Below is a brief synopsis of some of the work of the OMGA Board in 2018.

Several people are rotating off the Board this year. One, Katherine Johnson, served as the OMGA Treasurer for an amazing **12 years**. Thanks to everyone for your years of service.

In January, we learned that the company hosting the OMGA website and also providing our mailing list services was going out of business. Jim Parks, our webmaster, and Seamus Ramirez, Database Manager, worked hard to successfully locate other companies that could provide the needed services. Then, in March the 1st Vice President found it necessary to resign her office. Marcia Sherry stepped in and took on the responsibilities of our annual educational event – Mini-College. All her hard work made Mini-College, aka G2 for Growing Gardeners, very successful. Many thanks to Marcia Sherry for accepting this responsibility and quickly getting the event organized.

After many months of work, the **Memorandum of Agreement** between Oregon State University and the Oregon Master Gardener Association was signed by both parties. This MOA delineates the primary responsibilities of each organization.

Many thanks to Seamus Ramirez, Marcia Sherry and Louise Sargent who worked with me on the revisions of the OMGA position descriptions. These will be presented to the OMGA BoD at the March 2019 meeting.

Eric Bosler, as President-elect, planned and managed four excellent **Leadership Forums**. The focus this year was on communications. The forums were:

March – Jim Lisky and Kelly Noack (Gray) led the attendees through many parts of the Junior Master Gardener training program.

June – A panel of MG's from Douglas and Jackson Counties discussed the challenges of managing Demo Gardens and some solutions to these challenges. It was held at the Douglas County Demonstration Garden and ended with a class on wine tasting.

September – Held in Benton County, Sam Angima, Assistant Dean for Extension, Gail Langellotto, Oregon Master Gardener State Leader and Professor of Horticulture at OSU and Brooke Edmunds, the Extension Coordinator in Linn and Benton Counties spoke about funding, future plans for the Master Gardener program, available webinars and the National Master Gardener Coordinator Conference.

November – Hosted by Multnomah County at the Oregon Food Bank the focus was on various forms of digital communications. Tom Canales, Yamhill, talked about web sites, Donn Callaham, Yamhill spoke about newsletters and Julie Huynh discussed social media.

Growing Gardeners, G2 (formerly Mini-College) was held July 13 - 14, 2018 at Linfield College in McMinnville. Two hundred thirty-eight attendees participated in 37 different classes or one of the three tour options. The conference began Thursday evening with a no host reception. The Friday evening Awards Banquet took place outside on the quad behind Melrose Hall.

Both the **Silent Auction** and the **Send-A-Friend Raffle** were held in conjunction with the Conference. Many thanks to Jan Coleman, Yamhill and her committee who had over 150 items in the auction and raised over $6,000. Huge thanks also go to Marcia Sherry and Cathy Burdett, Yamhill for their work on the Send-A-Friend Raffle which raised $700.

Many grants, awards and scholarships were presented this year. Congratulations to everyone who received one. The County Master Gardeners of the Year together with the County Behind the Scenes awards were presented at the OSU/OMGA Awards banquet.

The Statewide Master Gardener of the Year was presented to Sue Nesbitt, Yamhill County and Statewide Behind the Scenes award was presented to Polly Blum, also from Yamhill County.

Eight chapters applied for and received **Send-A-Friend** funds. These funds are used by the chapters to provide financial assistance to Master Gardeners who wished to attend the Growing Gardeners conference. The chapters receiving funds were: Central Oregon, Clatsop, Douglas, Linn, Lincoln, Multnomah, Tillamook and Yamhill.

Five counties applied for and received grants from the **Karl Carlson Memorial Fund**. These monies help OSU Master Gardener chapters with the implementation of new programs or projects related to urban horticulture. These chapters were: **Clatsop, Lincoln, Douglas, Tillamook and Yamhill**.

There was only one application for the Marge Luce **Search for Excellence** award which was the **Tillamook chapter.**

The **Extension Educator** grant provides funds to help OSU Extension Community Horticulture Agents, Program Assistants or designated OSU Extension Staff responsible for County Master Gardener programs enhance their ability to educate the public in home horticulture. Seven applications for this grant were funded this year. They were: **Columbia, Multnomah, Lane, Klamath, Curry, Tillamook and the Agricultural Research Foundation**.

The 20, 30 and 40 year Longevity Service Awards were presented to many Oregon Master Gardeners for their years of dedicated service and commitment.

Many thanks the Marcia Sherry and Cathy Burdett, Yamhill for all their work on the Gardener's Pen newsletter. To publicize the Growing Gardeners Conference they added a special June issue in addition to their normal three issues.

The possibility of using only the online versions of the **PNW Handbooks** was researched. After learning that they cannot be downloaded, are only available via the Internet and that there is not an interactive index, it was decided to continue purchasing the handbooks. They are provided to all counties with MG Chapters plus any other county requesting them.

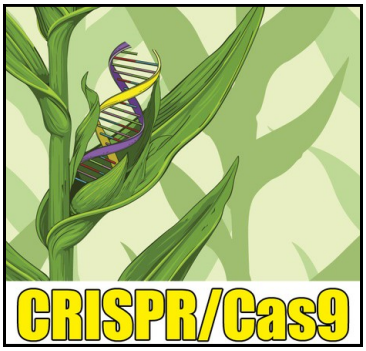
Thank you again!

for allowing me to serve as the Oregon Master Gardener Association President this past year. It was a wonderful year and a very rewarding experience.

High-Tech Horticulture

...by Gail Langellotto, PhD, Statewide OSU MG Coordinator

Even though many of us head into the garden to escape technology, advancements in genetics, robotics, and artificial intelligence are having an influence on horticulture. In no way am I an expert on technology. If you look at my own research program, you might notice that the traps that we use to collect bees are made from bowls that we purchase at the Dollar Tree. The equipment and materials in my lab are basically identical to the tools and materials that were in the labs where I worked in the early 1990s. There is something to be said for a solid commitment to basic natural history and taxonomy, as one way of advancing our understanding of the natural world. Likewise, new technologies and innovations also have their place. In this article, I'll review how technology is influencing the field of horticulture, and how they are being used to develop crop improvements, reduce pesticides, and protect bees.



- **CRISPR-Cas 9 and Plant Breeding**

CRISPR-Cas9 is a form of genetic engineering that has generated a lot of excitement in basic and applied biology, including medical research and plant breeding. CRISPR-Cas 9 is sometimes referred to as 'gene editing'. Just as word processing software allows us to easily edit text, CRISPR-Cas 9 is a tool that scientists can use to locate and rewrite parts of the DNA alphabet that make up an organism's genome.

CRISPR, which stands for **'Clustered Regularly Interspaced Palindromic Repeats'** was adapted from a natural defense system of bacteria by UC Berkeley researchers in 2012. By 2013, the technology had been adapted for use in plants. In essence (and I am grossly oversimplifying the process, here), a scientist creates a small circle of DNA (called a plasmid) that carries the genetic code for a protein produced by Cas-9 bacteria. The scientist inserts this plasmid into the cell of an organism that she wants to modify (the host), together with a second plasmid that will guide the protein to the target location of the host DNA. The Cas-9 protein then snips out the target DNA sequence from the host DNA. At this point, the scientist can inject a new strand of DNA that she wants the host cell to use, in place of the host DNA that she removed. Or, she can allow the host DNA to repair itself, such that the extent of her 'word processing' was to delete the that snip of host cell DNA.

Compared to other methods used by plant breeders, CRISPR offers greater specificity for targeting and modifying DNA regions, and fewer 'word processing mistakes'. The technology is still in its infancy. To date, CRISPR has been used to modify about 15 different crops (Ricroch et al. 2017), none of which have made it to farmers' fields, or to consumer markets. All of the CRISPR modifications, to date, have been performed as 'proof of concept': to show what scientists can do, and to study the potential impacts of CRISPR modifications on other plant traits.

Table 1: Examples of crop plants that have been modified, using CRISPR technologies (modified from information presented in Ricroch et al. 2017).

Crop	Modification
Cucumbers	Resistance to plant viruses
Rice	Resistance to fungus blast Resistance to herbicides Increased tolerance to salt stress Increased yield (grain weight, grain number) Improved grain nutrition
Tomato	Resistance to powdery mildew Resistance to herbicides
Grapefruit	Resistance to citrus canker
Corn	Increased tolerance to drought stress
Potato	Improved starch quality

One novel use of CRISPR, that may be of interest to home gardeners, is the use of the technology to reduce the amount of gibberellin in turf grasses, to produce low-growing lawns that do not need to be mowed as often (Li 2018).

Gibberellins (Gas) are plant hormones that regulate various developmental processes, including stem elongation, germination, dormancy, flowering, flower development and leaf and fruit senescence. GAs are one of the longest known classes of plant hormone. -Wikipedia

The shorter lawn grasses on the left (perennial ryegrass) need to be mowed less frequently than their conventional counterpart, shown on the right. The shorter grasses were produced using a traditional plant breeding technique. Yi Li is currently using the CRISPR technique to create grasses of other species that require less maintenance. Yi Li, CC BY-SA

Even though there is a lot of excitement in the scientific community about the applications of CRISPR, there is also concern related to how this technology will be used and regulated. In 2018, U.S. Secretary of Agriculture Sonny Perdue announced that the USDA does not regulate or plan to regulate plants that have been modified by using CRISPR technologies (USDA Press 2018). Unlike transgenic crops, which are often called GMOs, CRISPR-modified plants are not considered to carry DNA from another species, and thus do not fall under the same regulatory oversight as GMOs. Technically, this is true for annual plants that are developed using CRISPR-Cas 9. However, for perennial plants, scientists are challenged to remove the Cas-9 DNA from the plant, since they are not able to perform backcrosses to purge the foreign DNA. Some scientists have suggested that it is possible to remove the Cas-9 DNA from perennial plants (Li 2018). However, the proposed technique is largely in the 'proof of concept' stage.

- **Lasers and UAVs that Reduce Pesticides**

'Precision agriculture' is a term that is used to described more targeted and judicious use of agricultural inputs (e.g. water, pesticides, and fertilizers). In your own garden, the use of a well-designed drip irrigation system is one example of precision agriculture. You target the delivery of water to the specific site where the plant roots are located, rather than broadcasting water using an overhead sprinkler, which waters target plants *and* weeds.

In farmer's fields, un-manned aerial vehicles (also called UAVs, or drones) are being used to reduce pesticide applications. Farm fields are often very large. In the cotton fields I studied when I was at UC Davis, farmers planted fields in 1 mile-squared blocks ~ too large for a scout to hunt for pests across the entire field. Today, camera-equipped UAVs are flown over a crop.

Crops that are pest-ridden have a different look than healthy crops. A computer program analyzes the amount of blue/green/red in each photo, to develop a photographic map of plant health. A farmer can then send a pesticide applicator out to the specific part of the field where there is a pest issue, so that pesticide applications can be limited to those areas where they are needed, rather than being broadcast across the entire field. There are companies that are working to develop UAVs that can apply pesticides, but I could not verify that these are available for use in the U.S.

Another innovation in pesticide application is the development of an 'intelligent spray' system that uses lasers to measure leaf area and adjust pesticide applications, accordingly. This system is particularly useful for crops that have regular issues with plant disease. Fungicides are often applied to crops to prevent disease. Instead of broadcasting a fungicide across the entire field, where these pesticide particles might land on the ground, the intelligent sprayer precisely measures and applies fungicide to crop leaves. OSU has had a big hand in developing the intelligent sprayer, which is now available for farmers to buy and use in their own fields.

- **Radio Tags and Artificial Intelligence to Study Bee Behavior**

Master Gardeners know that healthy bees are needed for healthy ecosystems and productive agricultural systems. Today, there are many threats to bee health, including pesticides, lack of forage, and disease. Researchers are trying to untangle the influence of these threats on bee health. But, how do you study bees that nest in a hive? The traditional approach has been to subject bees to different experimental treatments, and to video tape marked bees in an observation hive. An army of undergraduate workers is hired to view the video tapes, and to note specific bee behaviors. While effective at advancing our understanding of the impact of environmental stresses on bees, this method is time-intensive and laborious.

2009 Marked Queen Bee - this large, queen Honey Bee, a Russian/Italian hybrid, is about 6 weeks old. She is sporting a green paint dot, green being the marking color for 2009, applied cautiously with a latex paint stick. *Photo by Steve Burt*

Researchers from Harvard University have figured out a way to automate this process, using 2-dimensional radio tags, robotic cameras, custom-built software and machine learning (Stockstad 2018). A robotic camera can track the movement of individual bees within the hive, who are identified by their radio tags. Software and high-throughput machine learning are used to recreate and track the simultaneous movement of hundreds of bees within the hive ~ a task that would have been impractical to do using the more traditional approach. When I first read about this innovation, I couldn't help but marvel at the scientists' ingenuity in integrating knowledge from entomology, robotics, computer science to solve a complex problem: how to study bee behavior in the hive.

As editor of the Gardener's Pen, I always appreciate your willingness to share articles such as these and also about projects and events in your local chapter. And yes, **pictures are great** to include with your article. Please keep them coming. Information on the issue themes, how and when to submit, is located on the ***OMGA webpage.***

Researchers Develop a New Houseplant that can Clean your Home's Air

From article by Sarah McQuate, University of Washington News, December 18, 2018.....edited by Marcia

We like to keep the air in our homes as clean as possible, and sometimes we use HEPA air filters to keep offending allergens and dust particles at bay.

But some hazardous compounds are too small to be trapped in these filters. Small molecules like chloroform, which is present in small amounts in chlorinated water, or benzene, which is a component of gasoline, build up in our homes when we shower or boil water, or when we store cars or lawn mowers in attached garages. Both benzene and chloroform exposure have been linked to cancer.

A team of researchers at the University of Washington have **genetically modified a common houseplant — pothos ivy — to remove chloroform and benzene from the air around it.** The modified plants express a protein, called cytochrome P450 2E1, that transforms these compounds into molecules that the plants can then use to support their own growth.

Researchers at the University of Washington have genetically modified a common houseplant — pothos ivy — to remove chloroform and benzene from the air around it. Photo by Mark Stone/University of Washington

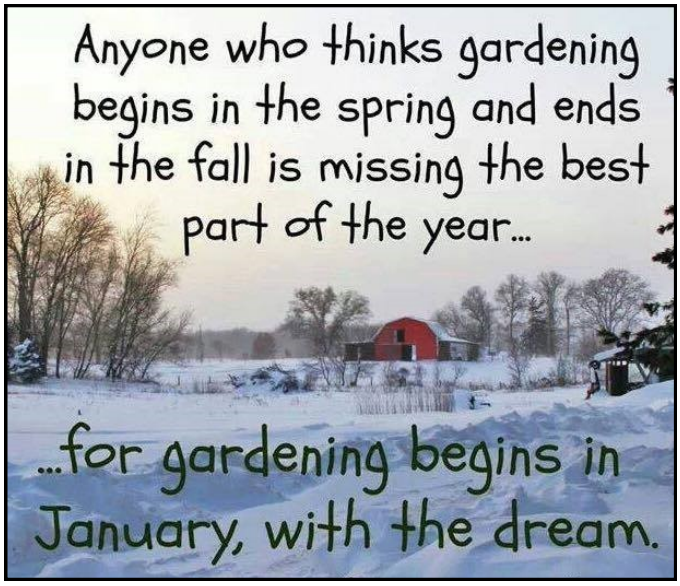
This protein is present in all mammals, including humans. It turns benzene into a chemical called phenol and chloroform into carbon dioxide and chloride ions. It is located in our livers and is turned on when we drink alcohol. So it's not available to help us process pollutants in our air.

The researchers made a synthetic version of the gene and introduced it into pothos ivy so that each cell in the plant expressed the protein. Pothos ivy doesn't flower in temperate climates so the genetically modified plants won't be able to spread via pollen. The process took more than two years. Pothos was used because it's a robust houseplant that grows well under all sort of conditions.

For the unmodified plants, the concentration of either gas didn't change over time. **But for the modified plants, the concentration of chloroform dropped by 82 percent after three days, and it was almost undetectable by day six. The concentration of benzene also decreased In the modified plant vials, but more slowly: by day eight, the benzene concentration had dropped by about 75 percent.** To be effective in the home, plants would need to have positive air flow to move air past their leaves, like a fan.

The team is currently working to increase the plants' capabilities by adding a protein that can break down another hazardous molecule found in home air: formaldehyde, which is present in some wood products, such as laminate flooring and cabinets, and tobacco smoke.

For more information, contact Stuart Strand at sstrand@uw.edu.



What is This All About Plant Apps?

...by Marcille Ansorge, OMGA Secretary, Tillamook

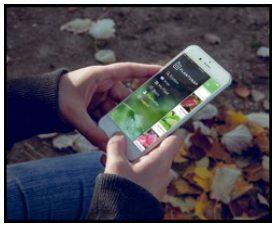
Have you ever been at a plant clinic and a client shows you a plant or a photo and says, "What is it?" We study the leaves, the blossom, ask questions and may be able to respond. Now there are tools that may make the activity simpler. Those are the plant apps for your phone. A plant app can look at a photo and instantly identify it. Well, maybe not that easily but it can be a useful tool in helping to do so.

I recently attended a presentation by Kristy Lund, four days away from becoming a certified Tillamook County MG, in which she showed us how to use plant apps and what information a MG could get.

She began first with asking the question, why use apps when we already have books that could answer many of the questions needed? The answers: books are heavy and take time to page through; because we can; and to learn quickly.

Second question: android phone or iPhone? It doesn't matter but camera quality is important for point and shoot apps and it can vary on phones.

How does one choose an app? Important question. As of November 6, 2018, there were 163 available in the Apple Store and by today there may be more. You can google **"plant ID apps"** for hours of entertainment. Reviews can be helpful but be sure to look at the negative reviews as well as the positive ones to get a good balance of what can be done with the app. And beware of imposter apps. They use the same icon but may have a slightly different spelling and may cost something or more even though the original may not. Some apps are free and some apps do cost a fee.



When choosing an app, consider what is your comfort level with technology, how familiar you are with botanical terms, and what is your area of interest. One app does not do it all.

Kristy listed four different approaches for Master Gardeners to consider when choosing an app and gave examples of each.

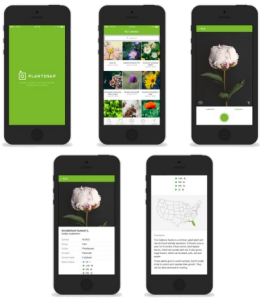
Digital guides in area and plant type. Two examples are Oregon Wildflower Search and Oregon Wildflower. The first is a free app and the second is from OSU and comes at a cost of $9.95. She noted that this helps OSU support its research and that there are no ads that come with it. With the Oregon Wildflower Search, you give information about the plant such as location, flower color, time of year it blooms and then it gives you possibilities of what the plant could be. The OSU app, Oregon Wildflower, can do the same but you can also start with a photo. And it is important to know that it is not just a means of identification; both apps give lots of information about the plants on the sites.

OregonWildflowers

Specific areas. These apps will give information in different areas of the world and are useful for travelers who are curious about flora in areas they are visiting. Again, you put in the characteristics of the plant you want to identify and the app will narrow the list with photos to confirm the plant. She demonstrated with DenaliFlora, which concentrates on plants in Denali National Park.

Share information with others. These types of apps let you become a "citizen scientist" by letting you put your experience with a plant on the site and also learn from the experience of others with the same plant. Kristy demonstrated with iNaturalist. These work well for those who are comfortable with social media.

Cover a broad area. An example of this is PlantSnap. You take a picture of the plant and it will identify it. Its database is updated constantly and it "learns" with new information. She noted that the app does require good photography and that it has a tutorial on how to take photos.



She ended with the following tips.

- Use the tutorials that come with the apps to know how to use them effectively.
- Update the apps frequently.
- Learn basics of information about plants so you know how to key in correct information.
- The better the photo, the better the ID.
- No app can ID 100% of the time, which is why it may be helpful to have more than one app.

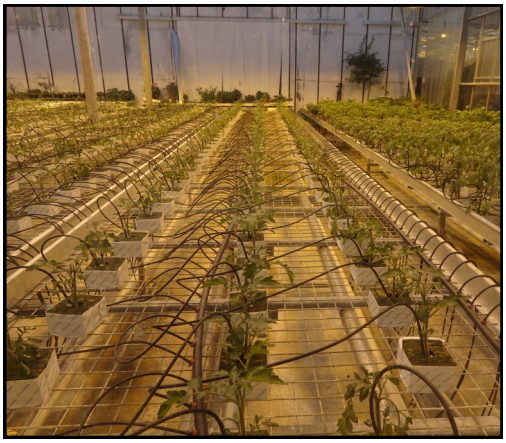
Kristy is happy to share her information with other MG Chapters and organizations. She may be reached at Kplund55@gmail.com

The Ultimate Tomato Farm

...by Sandi Rousseau, Central Gorge

Author's Note: Sandi Rousseau, Central Gorge MG, and Susan Albright, Washington County MG Association President, and their husbands recently completed a three week campervan adventure in Iceland.

If you think you have seen a lot of tomatoes growing in the past, you might want to look at this! Recently while in Iceland, we visited Fridheimar's Tomato Farm in the southern part of the country. It had been recommended to us as the 'best tomato soup anywhere', so we thought it was worth a stop. It was indeed worth a stop .... but not just for the soup.



The ultimate drip irrigation!

Fridheimars is a family business started in 1995 with Mom, Dad, and the five kids (now grown) all involved. They started growing tomatoes year round in 2002, so they installed lighting for those dark Icelandic winters when they have only four hours of daylight. They supply 17% of Iceland's tomatoes. They grow primarily four varieties plus a specialty of Piccolo cherry tomatoes.

They start all of the tomatoes from seed and as the photo shows - it is the ultimate in drip irrigation systems! The seedlings remain in the 'nursery' for six weeks and then are transplanted into the main greenhouse. They are planted into what I thought was a very small space for root development with three plants per box. When the plants are transplanted into the greenhouse they are flowering on the first truss, and seven to eight weeks later the first tomatoes blush red. They are nurtured for about three months before the first tomatoes are harvested. The vines then produce for about 9 months. A system of interplanting is used with young plants planted in between the older plants and the two grow side by side for seven to eight weeks. Just as the last tomatoes are ready to pick on the older plants, the first tomatoes on the young plants are turning red.

They use biological controls for pest control. The most effective of these is the predatory mirid bug Macrolophus pygmaeus, which devours all the main pests that afflict tomato plants. They manage temperature, humidity, carbon dioxide, and watering via computer so that the plants flourish and produce the optimum yield. The lower part of the vines are pruned by hand while workers sit on carts that roll along rails between the planted rows.

The farm has an abundant supply of geothermal water which provides heat to the greenhouses. Water flows in at about 203°F. In order to maximize sunlight in the greenhouses, the glass panes are only 4 mm thick, so a huge amount of hot water is needed – about 100,000 tons per year....for heating!

Tomatoes rely on the bumble bees for pollination/fertilization to produce fruit. One queen and hundreds of worker bees are flown in from Holland every few weeks. They arrive in a box, ready to work. Worker bees live 6-8 weeks. There are up to 600 active worker bumble bees at any one time at the greenhouse, and can be seen buzzing around while eating in the restaurant.

The results are not only tomatoes for the island but a delicious offering of tomato soup with fresh basil plants to cut at each table and served with a variety of homemade breads, butter, cucumber

salsa and sour cream. Other offerings include ravioli with tomato sauce and a lamb dish with tomato sauce. Of course there is tomato beer and three desserts all made with the tomatoes. Each dessert is served in a small clay pot....most appropriate for the setting. So, if you go to Iceland, this place is worth a stop - and the tomato soup was excellent!

Upcoming Advanced Training webinars

...by Brooke Edmunds, OSU Extension Linn & Benton County

1/29, 11am. Update on Sudden Oak Death in the PNW
Join Sarah Navarro (Forest Pathologist, Oregon Department of Forestry) and Norma Kline (OSU Extension) for an update on **Sudden Oak Death** a disease caused by *Phytophthora ramorum*. This session will help you learn how to recognize the symptoms of sudden oak death, how to report sightings, and management options (including landscape plants that are not susceptible).

Details & pre-registration info here: https://learn.extension.org/events/3581

Note: Topics planned for February and March include **'Understanding Pesticide Labels for Pollinator Safety'** and **'Grafting Tomatoes'**. We're still working to pin down the specific dates & times with our speakers. Check here for updates: https://wp.me/p7ymwn-2O

Keep the webinar series going in 2019!

We need your help to keep the OSU Master Gardener Advanced Training Webinar Series going in 2019 & beyond! Due to changes in the structure of the national Extension organization, OSU Extension will no longer have free access to their webinar platform and technical support staff starting in 2019. We feel our webinar series provides a valuable and accessible educational opportunity to our Master Gardener volunteers and we're not ready to stop yet! But, each monthly webinar costs ~$250 to deliver (with the speakers generously donating their time). We have secured temporary funding to keep the webinars going at least through May 2019.

If you or your county MG Association would like to support this series, please consider making a tax-deductible donation via the Agricultural Research Foundation at Oregon State University. More details on how to donate and what the funds will be used for can be found here:
https://wp.me/p7ymwn-2Q

Questions? Contact Brooke Edmunds at: brooke.edmunds@oregonstate.edu

Missed a webinar in the 2018 series? Recordings are available!

Each webinar is one hour of Continuing Education for MG's. (If from outside Oregon, check with your county coordinator.)

Meet the New Neighbors: Emerging Pest Issues in Oregon
presented by Robin Rosetta

The latest research on bees in the garden: an update from OSU Garden Ecology Lab
presented by Dr. Gail Langellotto

OSU Research on Gardening with Native Plants in the PNW
presented by Aaron Anderson

The Weird & Wonderful World of Plant Galls
presented by Melodie Putnam

Weed Management in the Garden & Landscape: Understanding Herbicides
presented by Kaci Buhl

Hybridization and Tetraploids and Chromosomes, Oh My! Understanding Plant Breeding for Disease Resistance
presented by Dr. Ryan Contreras

Frontiers in Slug & Snail Management
presented by Dr. Rory Mc Donnell

Identifying & Managing the Bronze Birch Borer
presented by Nicole Sanchez

Powdery mildew: Biology & Management in the Garden
presented by Dr. Jay Pscheidt

Dealing with Darling Dastardly Deer
presented by Dr. Dana Sanchez

on Mini-College...

...by Eric Bosler, 2019 OMGA President, Central Gorge

Anyone who is a Master Gardener is aware to one degree or another of ***Mini-College***. This annual educational program is the largest and most ambitious activity which OMGA undertakes. Whether you've personally attended or not, each Chapter participates in support and promotion of this informative and enjoyable experience. I attended my first Mini-College as a spouse of a Master Gardener and as we were driving home Shari and I decided that it was a 'must do' for us. We've not missed one since 2008. Putting on a conference offering quality education, fun and informative activities, and a congenial welcoming atmosphere is not a simple task. It is a program to which OMGA, our State Director, and Master Gardeners across the state are dedicated. However, it isn't easy.

Logo designed for earlier Mini-College has become a signature logo for OMGA

For all of 2018 we have been working to transform the event and incorporate suggested changes. How do we maintain timely and valuable education? Can attendance be increased? Will diversifying the leadership to "lighten the load" encourage new leadership? Is utilizing outside services for complex tasks, such as registration, a way to further ease the demands on the volunteers running the project? How do we accomplish these goals and still maintain an affordable event that provides education excellence and raises funds to support the OMGA programs provided to the member chapters?

At the OMGA 4th Quarter Board meeting, plans and activities for Mini-College were moving forward and the Executive Committee shared with the Board our progress. A prospective date and location was proposed. The idea of October in Central Oregon was discussed and well accepted. A **re-alignment of tasks** was outlined with much of the "heavy lifting" of registration and event coordination to be moved to a professional, Janette Woosley, who has worked with Mini-College registration for the last 5-6 years. The task of recruiting speakers and developing break-out topics was well in hand. But the need of a couple of people to coordinate the project had not been resolved. We all know from our Chapter activities that every program or project needs enthusiastic and committed leadership to succeed and this is lacking at this time.

As late as the OMGA Retreat in early December, planning continued but recruitment had not progressed. Mini-College was the main topic of discussion over most of the two day meeting. Input was received from numerous people who had worked on or attended Mini-College in the past. Gail Langellotto shared her conference experiences. In the end, the discussion came down to two major points. First, a commitment to the fall conference in Bend demanded a contract with a deadline of December 31st which carried significant penalties if the conference were cancelled. Second, the lack of individuals who could commit to chairing a committee to lead the project or finding a person to take on the 1st VP position.

After long consideration and consultation with the members of the Exec Committee it has been decided to **postpone Mini-College for 2019**. This will provide time to further re-define Mini-College and to recruit people to move this outstanding OMGA program forward in 2020. This brings us back to the position of OMGA 1st Vice President.

The responsibilities of the office are being re-defined to make it more manageable. **We are also seeking to form a standing committee to take on Mini-College and transition the job of 1st Vice President into a more supervisory role.** We are actively seeking someone to step into this vital role. Suggestions and recommendations are most welcome.

Events around the state

Yamhill County Master Gardener™ Association and OSU presents the 7th annual

Educational Gardening Classes

Spring into Gardening

Saturday, March 16, 2019

8:45 AM to 4:00 PM

McMinnville Community Center 600 NE Evans Street

For more information go to YCMGA.org

INSIGHTS INTO GARDENING

Presented by

Benton County Master Gardener™ Association

A fun day of research-based classes

20+ exhibitors

For new and experienced gardeners!

The LaSells Stewart Center, Corvallis OR

Saturday February 9, 2019

For More Information & to Register Click here

FREE

CLACKAMAS COUNTY MASTER GARDENERS™ INVITE YOU

NO RESERVATIONS NEEDED

Garden Discovery Day

March 2 • 9 am to noon

Milwaukie Center, 5440 SE Kellogg Creek Drive, Milwaukie

10-Minute University™ Classes

9:00-10:00 Room A	**Pruning** Master when and how to prune ornamental trees, fruit trees, ornamental shrubs
9:00-9:30 Room B	**Growing Blueberries** Learn to choose among varieties, prepare soil, plant, fertilize, mulch and prune
9:30-10:00 Room B	**Attracting Mason Bees** Discover what makes them great pollinators and how to attract them
10:00-10:30 Room A	**Designing a 3-Season Container** Know the 5-steps toward a healthy and attractive container that lasts for months
10:00-10:30 Room B	**Growing Vegetables under Drought** Get successful strategies to increase soil water retention and reduce water use
10:30-11:00 Room A	**Using Native Plants for Native Pollinators** Acquire ideas for adding native plants that are best suited for your garden
10:30-11:00 Room B	**Growing Early-Season Vegetables** Learn what to grow, when to sow, and how to get the most production
11:00-12:00 Room A	**Spring Ornamental Gardening** Get tools to help the garden toward a season of beauty and healthy growing
11:00-12:00 Room B	**Growing Tomatoes** Master proven techniques that increase quantity and quality of tomatoes

Soil Testing (9 – 11:30 am): We will test your soil pH and give advice on amendments. Up to 4 samples per client. For step-by-step instructions, obtain a "Testing Soil pH" handout at www.cmastergardeners.org under the "10-Minute University™" tab.

Clinic (8:30 am – 12:30 pm): Bring your questions, samples and pictures to have our MG experts answer your plant ID, disease, pest and insect issues while you attend classes.

Central Gorge Master Gardeners invite you to

'Save the Date'
Celebrating the 10th Anniversary of the

Japanese Heritage Garden

Friday, May 17, 2019
3:00 p.m.

The Learning Garden
at the
OSU Extension Service Office
2990 Experiment Station Drive
Hood River

Portland Taiko will be featured

Reception to follow

Did you know… that OMGA is listed as a charitable organization in the **Smile.Amazon** program? When you join, Amazon will donate 1/2 cent($0.005) for every dollar you spend on Amazon.com to OMGA.

- *Go to "Smile.Amazon.com" and log into your Amazon account.*
- *Then type in "Oregon Master Gardener (OMGA)" in the search box, hit enter.*
- *Then click on the "Select" button and you are all set!*

OMGA is also listed in Fred Meyer Community Rewards Program – https://www.fredmeyer.com/topic/community-rewards-4

OMGA ID #80755

Splinters from the Board

...by Marcille Ansorge, OMGA Secretary, Tillamook

4th Quarterly Board of Director's Meeting
November 3rd, 2018 at Multnomah County

- Splinters from the Board November 2018
- Host chapters are needed for Executive and Board Meetings in 2019.
- Annual retreat is scheduled for December 10 and 11, 2018, at Hopkins Forest Demonstration Center. All members welcome.
- Budget was adopted for 2019.
- Plans are ongoing for annual educational event to be held in Bend, OR in October, 2019.
- Name of the event is to remain Mini-College, with the theme of Growing Gardeners.
- Gail Langellotto, State Coordinator, presented the Best Practices Management for Plant Sales document, noted an update to the Code of Conduct, and reported on research at the Garden Ecology Lab.
- Sue Nesbitt presented a Representatives Handbook to each chapter OMGA Representative.
- Officers for 2019 were elected with the 1st Vice President position still vacant.

Executive Committee Meetings for 2019
Friday, February 1st Linn County Extension - Tangent
Friday, May 3rd Linn County Extension - Tangent
Friday, August 2nd Linn County Extension - Tangent
Friday, October 4th Linn County Extension - Tangent

OMGA oregon master gardener™ ASSOCIATION
we grow gardeners

omga.org

Oregon State University Extension Service Master Gardener

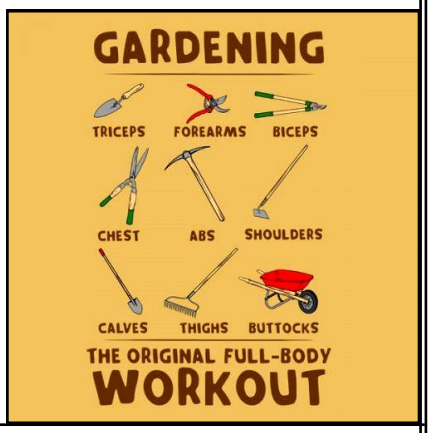
Leadership Forums		Board of Directors Meetings	
Date	**Location**	**Date**	**Location**
Friday, March 1st Topic/Speaker:	Marion County TBA	Saturday, March 2nd	Marion County Contact: Cynde Shorter
Friday, June 7th Topic/Speaker:	Jackson County TBA	Saturday, June 8th	Jackson County Contact: Barbara Davidson
Friday, September 6th Topic/Speaker:	Linn County TBA	Saturday, September 7th	Linn County Contact: Janice Gregg
Friday, November 1st Topic/Speaker:	Tillamook County TBA	Saturday, November 2nd	Tillamook County Contact: Linda Stephenson
Watch for announcements of times, topics/speakers at the Leadership Forums			

A fun project...a vertical Planter

Add more flowers and color to a dull area! Click ahead to see how to build this simple project by attaching three standard 6-inch terra-cotta pots with steel or copper banding to a metal fence stake.

1. Cut a piece of metal banding 16 inches long and wrap it around the pot, just below the lip. Determine where to place the bolt for a secure fit
2. Remove the pot and set it aside while you attach the metal band to the stake with a bolt and secure it with a wingnut.
3. Attach three pots to one fence stake. If you like the way one looks, build several and stagger the pots like a checkerboard, filling them with colorful annuals.

From Garden Gate Magazine GardenGateMagazine.com



We are online at: www.omga.org

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The Gardener's Pen Newsletter is published three times per year: April, September and December/January by the Oregon Master Gardener Association.
Deadline for the April 2019 issue is: March 23rd, 2018.
Theme: "*Gardening Solutions*"
Please send your articles and photos to: Marcia Sherry, Managing Editor

GardenersPenNewsletter@gmail.com

OMGA™

2019 OMGA Executive Committee

President:	**Eric Bosler**
President Elect:	**Chris Rusch**
1st Vice President:	**Vacant**
2nd Vice President:	**Julie Huyhn**
Secretary:	**Marcille Ansorge**
Treasurer:	**Patrice Sipos**
Past President:	**Sue Nesbitt**
Database:	**Seamus Ramirez**
Historian:	**Barbara Davidson**
Newsletter Editor:	**Marcia Sherry**
Statewide Coordinator of the Oregon Master Gardener Program:	**Gail Langellotto**