Program Summary Narrative

As Environmental Horticulture Advisor for Marin and Sonoma Counties, my clientele is landscape professionals, land managers, nurserymen, gardeners, and do-it-yourself homeowners. My overall program goal is to *increase my clientele's understanding of 1) how to manage landscapes and pests in an integrated, effective, sustainable manner; 2) how management decisions affect the larger environment; and 3) how to simultaneously conserve and enhance natural resources while maintaining or improving their economic viability.*

Changing times, expanded responsibilities

The last three years have seen unprecedented change for my program. The following three events are good examples of the processes driving these changes:

1. In 2017, Sonoma's Tubbs complex fires burned more than 5,600 structures and resulted in over $1.2 billion in damages (and some of these areas, including my research plots, burned again in 2019). Subsequent demand for fire-resistant landscaping information soared and challenges persist today in the form of misinformation. One example is fire-safe plant lists, which are not science-based or peer reviewed.
2. In 2017 in Marin County, state and federal park managers concluded that their efforts to battle Japanese knotweed were being thwarted by constant re-introduction of the weed from private lands up-stream. We teamed up with State and National Parks and other local agencies to help solve the problem.
3. With the retirement of Paul Vossen in 2016, the North Bay lost its only Specialty Crops Advisor. Since then I have been helping to diagnose local crop pathogen problems. I also held an outreach event in the specialty crops arena, when a delegation of Albanian farmers toured the North Bay.

I have responded to changes to the landscape, Cooperative Extension staffing, and to public perceptions by re-prioritizing my program. I created new research and extension projects to address emerging issues, including policy work on fire in the defensible space zone of structures, an assessment of post-fire tree survival, and the eradication a highly invasive weed.

Meeting the University's strategic vision

In addition to the changes above, my program remains focused on the University's Strategic Initiatives, specifically Exotic and Invasive Pests and Diseases, Sustainable Natural Ecosystems, and Water Quality, Quantity, and Security. I address these through two major program themes: 1) *resource conservation through improved land management practices* and 2) *Integrated Pest Management*.

Projects in both themes focus on several of UC ANR's Public Values Statements, including:

- Protecting California's Natural Resources
- Building Climate-Resilient Communities and Ecosystems
- Promoting Economic Prosperity in California.

Theme 1, Resource Conservation through Improved Land Management Practices

Garden Walks and Community Gardens Water Efficiency

Clientele & Goals: I provide homeowners and community gardeners in Marin County with tools and information to help keep their gardens thriving with less water. Our on-site consultations also help reduce green waste that must be processed off-site, and preserve and enhance ecosystem functions by emphasizing native plants and minimizing the use of pesticides.

Inputs and Methods: Garden Walks is a long-term (13 years) research project facilitated by successive bi-annual grants totaling over $276,000 ($76,351.50 in current review period) from the Marin Municipal Water District (MMWD). With this grant, I supervise Pam Polite-Fisco (Community Educations Specialist II, 0.4 FTE), who runs the day-to-day operations. The core of the Garden Walks program is based on Marin Master Gardeners visiting local residences, assessing the gardens and irrigation systems and recommending strategies that increase irrigation efficiencies, including cultural practices such as mulching and hydro-zoning.

In 2015-2017, I also collaborated with MMWD to support community gardening. Efficient water use allows MMWD to provide community gardens with water at discounted rates. This helps low-income participants, a goal of the project, and it addresses another of UC's Public Value Statements: An Inclusive and Equitable Society.

Outcomes & Impacts: Average outdoor water savings by participating households was more than 8,300 gallons per year compared to control households. Assuming water savings last for a minimum of three years, and extrapolating those savings to the more than 1,750 total households served, we project water savings of more than 27 million gallons of water over the program's lifetime. These numbers are derived directly from measured water savings at participants' meters, and are exclusive of other programs. This program has won awards at the local, state, and national level. It has been featured as a model program for measuring impact by UC ANR, MMWD, and most recently, Marin County's *Open Data* program. *Open Data* provides interactive maps and data to help illustrate the services provided by Marin County's government. Tracking began on January 1, 2019: https://data.marincounty.org/stories/s/28ur-bzhq.

Forest Stewardship Workshops

Clientele & Goals: The majority of forestland in Sonoma County is located on privately-held parcels of 10 acres or less. To provide property owners with tools and information to help them address property management objectives while preserving both on-site and off-site natural resources and plan for climate change, I work with the Sonoma County Forest Conservation Working Group.

Inputs and Methods: I work with of a wide variety of local and state agencies (please see Project Summary Appendix), as well as private individuals and professional foresters to co-coordinate and present information at these workshops. Our workshops are held on local land, where we discuss the real-world practicalities of cost-effective forest management solutions that meet multiple objectives and which can be implemented across cooperating parcels.

Outcomes & Impacts: Local property owners enthusiastically attend our workshops and participants regularly demonstrate significant increases in knowledge (determined by pre- and post-session testing) as well as content with greater than 80 percent applicability to their land management activities. The average per-year total of land managed by forest steward workshop participants is more than 10,000 acres, though the average number of acres managed by participants in many years is skewed by a few managers of larger properties. Workshop participants have been awarded land management grants through cooperating agencies totaling more than $2.75 million in total funding for various fuels treatment, road grading, and installation of water tanks for firefighting purposes. (Please see all listings under Meetings Organized in the Extension Efforts Appendix - except Living With Fire, which falls under the Fire Effects on Plants in the Wildland Urban Interface heading).

Fire Effects on Plants in the Wildland Urban Interface (WUI)

Clientele & Goals: This project differs from Forest Stewardship Workshops above in that it is much more policy focused. As global warming continues to alter climate norms in California, fires are predicted to become both more frequent and more intense. I work with Fire Departments, Fire Safe Councils, and Conservation groups to refine and harmonize messaging about fire and landscaping for defensible space.

Inputs and Methods: Within the Fire Working group, I chair a sub-group tasked with refining defensible space outreach messaging to homeowners. I work with local fire chiefs and fire-safe councils to

harmonize fire-safe landscaping ordinances across cities and counties. This project also includes an assessment of post-fire tree mortality that I am conducting at Pepperwood Preserve with Melina Kozanitas of the Ackerly Lab at UC Berkeley.

Outcomes & Impacts: We were holding workshops on fire and defensible space before the Santa Rosa fire complex, and as demand grew, we scaled up our outreach efforts on fire to meet demand (please see five presentations in 2018-19 in Educational Presentations section of Extension Activities Appendix, plus Living With Fire, under Meetings Organized). We're currently working on revising several UC ANR publications such as 8228 (Home Landscaping for Fire) to ensure the information we provide to the public is accurate and consistent.

Theme 2, Integrated Pest Management (IPM)

Forest health coordinator

Clientele & Goals: I serve as a technical backstop for Forest Health Coordinator Janice Alexander. Janice tackles issues related to nurseries and wildlands, primarily exotic Phytophthora species introduced to California through the nursery trade, of which Sudden Oak Death is the best-known example. Janice and I helped put on the 7th Sudden Oak Death Science Symposium.
Inputs and Methods: The Sudden Oak Death website originally served as a central clearing house for information. With work (and funding) on sudden oak death slowing, and with the recent introductions of new exotic Phytophthora species, the website is being repurposed to work on new exotic Phytophthora species under the name "CalPhytos."
Outcomes & Impacts: This is the premier website in California for researchers and practitioners addressing the Phytophthora epidemics that have been plaguing California's native plant nurseries. According to Google Analytics, suddenoakdeath.org received 239,000 page views over the past 4 years.
http://www.suddenoakdeath.org/welcome-to-calphytos-org-phytophthoras-in-native-habitats/

Sonoma County Sudden Oak Death project

Clientele & Goals: Sudden oak death's arrival in the northern portions of Sonoma County is relatively recent. Our goal is to provide education and information to area landscape professionals and residents about forest and disease management.

Inputs and Methods: I work with Sudden Oak Death Project Coordinator Kerry Wininger, who keeps Sonoma County Master Gardeners current on treatment recommendations for the disease, and who organizes local workshops in cooperation with Matteo Garbelotto's SOD Blitz program. (Please see the IPM section of the Project Summary appendix.)

Outcomes & Impacts: Kerry and I mapped out much of the extent of sudden oak death in northern Sonoma County in 2016, which has helped many small communities understand their geographical proximity to the disease, which translates into understanding the relative risk to their trees and the amount of time they have to address it .

Six SOD Blitz workshops were held in Sonoma County in Spring of 2019. Each year more than 2,000 trees are surveyed. Typically, the return infection rate is between 15% and 50%. The information facilitates decision making. This program is popular with both the public and the press, with regular coverage on the radio and in newspapers:

KRSO radio's "Garden Talk," April 2019
Wet winter in Sonoma county may have helped spread virulent oak disease, Press Democrat, April 2019
Dry winter curtails fatal disease in oak trees, Press Democrat, Oct 2018
Sudden oak death rampant in Sonoma County after two wet winters, raising longterm fire risks, Press Democrat, Nov 2017
Sudden oak death in Sonoma County explodes, thanks to winter rains, Press Democrat, Oct 2016

Master Gardener program support

Clientele & Goals: The Master Gardener (MG) program serves as the major point of public contact for landscaping questions at UCCE Marin. My programs are truly integrated, as MGs advise on IPM, fire-wise landscaping, and water conservation.

Inputs and Methods: I provide technical information to MGs when disease and pest issues are difficult to diagnose. The Marin County help desk handled an average of over 1,500 independent enquiries a year during this review period.

Outcomes & Impacts: Many positive outcomes of the Master Gardener program are shown elsewhere in this report, notably under Garden Walks and Fire Effects on Plants in the WUI.

Japanese knotweed eradication

Clientele & Goals: This project aims to prevent habitat destruction in some of the last salmon-bearing streams in Marin County. Japanese knotweed, *Fallopia japonica,* has been rated among the most invasive species in the world. In 2011, it was found on State and National Parkland in the San Geronimo valley. The parks were successful in eradicating existing infestations, but continual re-infestation led them to suspect that upstream private properties upstream. We put together a team to tackle the issue.

Inputs and Methods: Working with technical support from MMWD and State and National Parks in early 2018, I did the initial outreach and surveys for Japanese knotweed. My work confirmed suspicions that significant populations were established on private property. We applied for a grant from the County of Marin to get funding for an eradication effort, and CDFA to get support for our Japanese knotweed outreach coordinator, Anna Dirkse (Community Education Specialist III, 1.0 FTE). Overcoming homeowner fears associated with the use of herbicides was a major obstacle, but we succeeded in getting permission for all 70 sites on the 50 parcels involved.

Outcomes & Impacts: Results from the small batch of first year treatments are promising, and consistent with work done by State and National Parks. This project will likely require several years of work to complete. If we succeed, we will be able to demonstrate that this weed can be stopped, even in a riparian forest, if caught early enough.

Novel Pests and Diseases of Horticultural Crops, a combination of two projects:
Pests & Diseases of Arbutus 'Marina' on California's central coast
Botryosphaeria decline of mature Pittosporum

Clientele & Goals: These projects are both aimed at identifying problems of concern to landscapers and nurserymen within the horticultural trade.

Inputs and Methods: I collaborate with private industry, CDFA, UCCE Advisors, and grad students to attempt to identify comparatively intractable landscape pests and diseases.

Outcomes & Impacts: These projects have met with varying levels of success. Briefly, working with Suzanne Latham at CDFA, we've ruled out many potential causes of the mystery disease killing Arbutus 'Marina,' but have yet to find a definitive cause. I've assisted Dee Vega in her bid to track down the cause of the decline of mature Pittosporum. Finally, my work with the mysterious microlepidopteran (absolutely tiny moth) that is attacking Arbutus 'Marina' has been slowed, as Steve Seybold, my USDA collaborator, passed away unexpectedly this year. I am still moving forward on this project, and am currently looking for a new collaborator to assist me with trapping techniques and identification of moths.

Specialty crop pathology

Clientele & Goals: Specialty crop growers are not in my position description, but with the retirement of Paul Vossen in 2016 I was asked by my Sonoma County Director to assist with grower inquiries in pathology until a new Specialty Crops Advisor could be hired. I have been diagnosing plant diseases for local growers as needed for the past three years.

Inputs and Methods: I work with a variety of advisors and specialists to diagnose crop diseases, including the Swett and Eskalen labs at UC Davis, UCCE Advisors Steve Koike and Steve Tjosvold. With the retirement of both Steves and the heavy emphasis in the North Bay on organic production, I have reached out to Joji Muramoto, the newly minted Organic Crop Specialist at UCSC.

Outcomes & Impacts: I have worked with seven local organic farms to diagnose a range of crop maladies, from fusarium wilt on basil, to club root of brassicas, to white rot on garlic, among numerous other issues.

Professional Competence

I focused my management and administration training where they would do the most good: in team building, providing effective feedback, and in outreach to the Latino community. I spread my technical training to cover both of my themes: In Resource Conservation, I worked to enhance my skills and understanding of fire. In IPM I focused my education on herbicides, as I am required to have my Qualified Applicator's Certificate with the California Department of Pesticide Regulation in order to conduct this type of research. I continue to learn about field diagnosis of plant pathogens working with other UC researchers. My work supports my commitment to a future program trajectory in these areas.

University and Public Service

I serve as Safety Officer for the UC Cooperative Extension Marin office. I also supervise one County Staff position, Martha Martinez (Office Assistant III, 0.9 FTE) who provides broad program support services to multiple programs within the Marin County UCCE office.

I belong to four UC ANR workgroups: Pest Management in ANR, Landscape and Urban Horticulture, Plant Pathology, and Oak Woodland Conservation. I am serving on the Peer Review Committee for 2019-2021. My public service includes sitting on Environmental Horticulture Committees for both Santa Rosa Junior College and the College of Marin, as well as serving as the only permanent commissioner on Marin County's IPM Commission. As a member of the Marin IPM Commission, I guided and witnessed a greater than 90% reduction in pesticide use on county property. What pesticides are used are almost all eco-exempt (the preferred choice) or organic. This has been hailed as a great success by our environmental community.

Affirmative Action

Most jobs in landscaping entail hard work at low wages, and many are maintained or managed by members of underserved populations lacking strong historical ties to the University. Outreach to these landscape workers is key to maintaining economic and ecological vitality of the North Bay's landscape industries and natural resources. It is also key to my program's success. My affirmative action work is aimed at Developing an Inclusive and Equitable Society, and Promoting Economic Prosperity.

My programmatic outreach includes mass media (newspaper releases, radio announcements, and mailings) and flyers strategically placed in locations frequented by these groups. The diversity of attendees to my workshops confirms this approach is successful, with robust attendance from targeted underserved groups.

The work I do with Garden Walks and Community Gardens includes underserved and low-income communities with a broad range of ethnic backgrounds. Within the past year, I've begun developing a relationship with Axel Flores, Senior Manager for Workforce Development at the Canal Alliance, a non-profit that seeks to enhance economic opportunities for low income populations. I will be working with Axel, bilingual Master Gardeners, and County Staff to conduct bilingual workshops that cover topics relevant to UC's strategic initiatives, such as water conservation, fire-wise landscaping, and integrated pest management to a demographic that is both historically underserved, and who also happens to do the majority of landscaping in the North Bay.

A Path Toward Making a Difference

I am making a difference at the policy level with Marin County's IPM Commission, and with my Fire Effects on Landscapes; and on the ground, with programs in IPM and Garden Walks. My program is highly effective, as demonstrated by the recognition of my Garden Walks program and the IPM Commission's reduction of pesticide use by over 90%, and will continue to be so, especially as my research and outreach projects in land management and integrated pest management reach maturity. My program is in-tune with UC ANR's Strategic Initiatives and Public Values Statements. My program enhances UCCE's connection and value to underserved communities by regularly working with them on horticultural issues that matter to them and to professional landscape companies in the North Bay. With my broad, interdisciplinary approach, I am committed to bringing research-based information and to developing the skills of all of the people of Marin and Sonoma Counties. I believe my program and its results reflect those commitments.

Abbreviations

CalFire: Formerly CDF, the California Department of Forestry and Fire Protection
FSW: Forest Stewardship Workshops
IIBHS: Insurance Institute for Business and Home Safety
IPM: Integrated Pest Management
ISA: International Society of Arboriculture
JC: Junior College
MC: Master of Ceremonies: introductions, directions, and other facilitation duties at presentations
MG: Master Gardener
MMG: Marin Master Gardener
MMWD: Marin Municipal Water District
NPS: National Park Service
NRCS: Natural Resource Conservation Service, a Federal program
REC: Research and Extension Center
SOD: Sudden Oak Death
USDA FS-PSW: U.S. Department of Agriculture, Forest Service, Pacific Southwest Station

Professional Competence

Professional Development and Training

Management and Administration

Date	*Location*	*Duration*	*Activity*
11 Apr 2018	Ontario, CA	2 hrs.	Understanding and reaching the Latino community
17 Oct 2018	San Rafael	3 hrs.	Strength Finder team management training
26 Mar 2019	Novato	1.5 hrs.	Supervisor's role in staff training

Integrated Pest Management

16 Nov 2016	ANR Bldng., Davis	5 hrs.	EIPD, SNE Meeting
7 Dec 2016	Conference call	2 hrs.	Invasive shot-hole borer conference call
17 Mar 2017	ANR Bldng., Davis	3 hrs.	UC pesticide policy update
28-30 Mar '17	UC Davis	14 hrs.	Soilborne plant pathogens meeting
5-6 Apr 2017	Watsonville	12 hrs.	Environmental horticulture team meeting
5 Dec 2017	Conference call	2 hrs.	Invasive shot-hole borer conference call
4 Apr 2018	On-line	3 hrs.	UC pesticide policy update
10 Apr 2018	Ontario, CA	2 hrs.	Innovative methods for data collection and analysis
16 Apr 2018	Ignacio	2 hrs.	Everything you ever wanted to know about palms
3 May 2018	San Rafael	6 hrs.	Bartlett Tree educational seminar
23-24 Oct '18	UC Davis	10 hrs.	International Oaks annual meeting
20 Mar 2019	On-line	3 hrs.	UC pesticide policy update
7-8 Mar 2017	Petaluma	11 hrs.	Prescribed fire as a land management tool
10 Apr 2018	Ontario, CA	2 hrs.	Fire management and policy
11 Apr 2018	Ontario, CA	2 hrs.	Ecosystem services
1 Aug 2018	Pt. Reyes Station	6 hrs.	Prescribed fire on private lands
7 Sep 2018	On-line	1 hr.	Hopland REC research seminar
5 June 2019	UC Davis	4 hrs.	Pest Management Program Team Meeting
5 June 2019	UC Davis	2 hrs.	Plant Pathology Program Team Meeting

Professional Competence (cont'd)

Evidence of Professional Competence

Professional Society Memberships

International Society of Arboriculture, member since 1997

American Phytopathological Society, member since 2011

International Oaks Society, member since 2018

California Native Plant Society, member since 2018

Technical Reviews

Peer Review for UC IPM, Pest Note, June 2018

Peer Review for UC ANR, June 2019

Grant Reviews for California Institute for Water Resources, 2017 & 2019

Workgroup Presentations

6 June 2019, *The Problems with 'Marina',* Plant Pathology Workgroup Meeting, UC Davis

Invited Presentations

Integrated Pest Management

Date	*Client*	*Area*	*Topic*
14 Oct 2016	Marin Conservation League	Local	A history of IPM
2 Nov 2016	PAPA	Regional	Tree physiology and disease
14 Feb 2016	Marin County Parks	Local	Bark beetles & fungal associates
21 Sep 2017	S.F. Professional Gardener Assoc.	Local	Biopesticides
1 Nov 2017	PAPA	Regional	Fire Blight
16 Nov 2017	Int'l. Society of Arboriculture	Regional	Management of SOD
22 Oct 2018	International Oaks	International	SOD: What Works, What Doesn't
7 Nov 2018	Santa Rosa JC Arboriculture Class	Local	Disorders of Landscape Trees
10 Apr 2019	San Joaquin MG	Regional	Plant physiology & water

Professional Competence (cont'd)

Invited Presentations

Resource Conservation Through Improved Land Management

Date	*Client*	*Area*	*Topic*
6 Jun 2017	Rotary Club of S.F. (Regional)	Regional	Tree selection and maintenance
24 Aug 2018	Fire Safe Sonoma	Local	Post-fire tree survival
28 Nov 2018	Sonoma County Parks & Rec	Local	Post-fire tree mortality
16 Apr 2019	Calif. Native Plant Society	Local	What's wrong with fire-safe plant lists?
12 Aug 2019	Marin Conservation League	Local	What's wrong with fire-safe plant lists?

Professional Certifications

Certified Arborist #3545, International Society of Arboriculture

Qualified Applicator Certificate #137903, Department of Pesticide Regulation

University and Public Service

University Service

Begin Date – End Date	Activity	My contribution & leadership role
8 Mar 2007 – present	UCCE Marin Safety Coordinator	Coordinate safety update sessions, drills, and tracking
30 Apr 2007 – present	Pest Management Workgroup	Member and participant
30 Apr 2007 – present	Oak Woodland Workgroup	Member and participant
30 Apr 2007 – present	Urban Horticulture Workgroup	Co-chair (since 2012)
Oct 2016	Plant Pathology Workgroup	Member and participant
Oct-Nov 2016	Redwood Symposium: Session On Policy, Economics, and Community Forestry	Co-chair
Apr 2019 – present	UC ANR Peer-Review Committee	Member and participant

Public Service

Begin Date – End Date	Activity	My contribution & leadership role
3 May 2007 – present	College of Marin, Environmental Landscape & Design Advisory Committee	Member and participant
11 May 2007 – present	Sonoma County Forest Conservation Working Group	Member and participant
13 Jul 2007 - present	Marin County IPM Commission	Commissioner
16 Nov 2007 - present	Santa Rosa Junior College, Environmental Horticulture Advisory Committee	Member and participant
1 April 2014 - present	Saratoga Horticultural Research Foundation Advisory Committee	Member and participant

Project Summary

Resource Conservation Through Improved Land Management Practices

Title and Duration	*Role*	*Collaborators*	*Support*	*Source*
Marin-Friendly Garden Walks, 2008 – present	PI	D. Lewis, UCCE Marin; D. Carney, MMWD	$76,351.50 2016-2019	MMWD
Marin Community Gardens Water Efficiency 2015 – 2017	co-PI	D. Lewis (PI), UCCE Marin; D. Carney, MMWD; S. Phillips, MMWD	$ 45,754 2015-2017	MMWD
Forest Stewardship Workshops, 2007 – present	co-PI	J. Butler, CalFire; K. Batchelder, Sonoma County Open Space Dist.; A. Chesnut, Sonoma County Land Trust; F. Euphrat, RPF; C. Safford, Fire Safe Sonoma; D. Swanhuyser, Bay Area Ridge Trails; E. Cummings, Sonoma RCD; D. Loganbill, NRCS	none	
Fire Effects on Plants in the WUI, 2018 - present	PI	M. Kozanitas, Ackerly Lab, UCB; M. Jones, UCCE Sonoma; Y. Valachovic, UCCE Humboldt; S. Quarles; IIBHS; M. Enright, UCCE Sonoma; F. Mark, Marin MG	none	

Integrated Pest Management

Title and Duration	*Role*	*Collaborators*	*Support*	*Source*
Forest Health Coordinator 2007 – present	co-PI	D. Lewis (PI), UCCE Marin; S. S. Frankel, USDA FS-PSW; J. Alexander, UCCE Marin	$11,100 2016-2019	USDA – Forest Service
Marin Master Gardener Program Support 2007 – present	co-PI	D. Lewis (PI), UCCE Marin; Marin Master Gardener Board	$142,500 at $40.38/hr* 2016-2019	Board Vol. Hours
Sonoma County Sudden Oak Death Project 2016 - present	PI	M. Jones, UCCE Sonoma; M. Enright, UCCE Sonoma; K. Wininger, UCCE Sonoma	$45,000** 2016-2019	USDA Forest Service

* Volunteer rate based on Marin County Civic Center estimate of local per-hour value of volunteer labor

** Administered via the County of Sonoma

Project Summary (Cont'd.)

Integrated Pest Management

Title and Duration	*Role*	*Collaborators*	*Support*	*Source*
Japanese Knotweed Eradication 2018 - present	PI	D. Lewis, UCCE Marin; A. Dirkse UCCE Marin; S. Parnay, Marin Co. Ag. Comm.; K. Knecht, Marin Co. Parks; E. Ettlinger, MMWD; S. Phillips, Marin RCD; B. Simpson, NPS; Dave Press, NPS; Rachel Kesel, OneTam; William Miller, Ca. State Parks	$60,000 2019 $1,800 2019	CDFA Marin Fish & Wildlife Comm.
Pests and Diseases of Arbutus 'Marina' on California's Central Coast 2016 - present	PI	S. Latham, CDFA; S. Seybold, USDA-FS; MollyAnne Meyn, Mira Landscaping; D. Zwart, Bartlett Tree	none	
Botryosphaeria Decline of Mature Pittosporum 2017 - 2019	Coll.	D. Vega, CalState Pomona; D. Zwart, Bartlett Tree; J. Downer, UCCE Ventura	none	

Extension Activities

Meetings Organized: IPM

Date	*Meeting Title*	*Role* (Co-organize, plus …)	*Location*	*Attendees*
6 Apr 2017	EH Program Team meeting	Speaker: *Unknown Microlep in the North Bay*	Watsonville	14
6 Sep 2017	Field tour for Albanian Farmers	Tour guide	Marin County	9
9 Nov 2017	North Bay Landscape Seminar	Speaker: *Telling Disease from Drought*	Ignacio	34
21 Apr 2018	ISA Field trip	Group leader, tree planting	Fountaingrove	6
23-25 Apr '18	ISA Annual Meeting	Moderator, Pest Management session	Santa Rosa	33
25-27 Jun '19	7th SOD Science Symposium	Field Trip Coordinator Speaker: *SOD, What works*	San Francisco	183

Meetings Organized: Resource Conservation Through Improved Land Management

5 Nov 2016	Forest Stewardship Fire Workshop	MC, Speaker: *Fuel Breaks & Defensible Space*	Santa Rosa	10
7-9 Jun 2017	North Coast Forest Conservation	Session lead, Speaker: *Forest Mgmt. Challenges*	Santa Rosa	186
7-9 May '18	Living With Fire	Field trip chair	Sonoma State	342
19 May 2018	North Coast Fire Resiliency	MC, Community Feedback Session Chair	Timber Cove	33
24 May 2019	North Bay Landscape Seminar	MC, Speaker: *Fire Safe Plant Lists, What's Wrong*	Petaluma	23

Educational Presentations: IPM

Date	*Meeting Title*	*Presentation Title*	*Location*	*Attendees*
10 Oct 2016	MMG Public Speaker Series	*Citrus Care*	Ignacio	45
14 Oct 2016	Marin Conservation League	*An Introduction and History of IPM*	San Rafael	36
2 Nov 2016	PAPA	*Tree Physiology and Disease*	Petaluma	95

Extension Activities (Cont'd.)

Educational Presentations: IPM (cont'd.)

Date	*Meeting Title*	*Presentation Title*	*Location*	*Attendees*
5 Jan 2017	Marin Master Gardener Training	*IPM*	Ignacio	34
12 Jan 2017	Marin Master Gardener Training	*The Role of Master Gardeners*	Ignacio	34
14 Feb 2017	Marin County Parks IPM Meeting	*Bark Beetles & Fungal Associates*	Marinwood	22
9 Mar 2017	Marin Master Gardener Training	*Fruit Trees*	Ignacio	33
30 Mar 2017	Marin Master Gardener Training	*Plant Pathology*	Ignacio	32
21 Sep 2017	S.F. Professional Gardeners Assoc.	*Biopesticides*	San Francisco	12
24 Oct 2017	MMG Public Speaker Series	*Bacterial Diseases of Fruit Trees*	Ignacio	39
1 Nov 2017	PAPA	*Fireblight*	Petaluma	88
16 Nov 2017	ISA	*Management of SOD*	Saratoga	95
4 Jan 2018	Marin Master Gardener Training	*IPM*	Ignacio	34
11 Jan 2018	Marin Master Gardener Training	*The Role of Master Gardeners*	Ignacio	33
18 Jan 2018	Marin Master Gardener Training	*Botany*	Ignacio	36
20 Jan 2018	MMG Public Speaker Series	*Citrus Workshop*	Ignacio	17
25 Jan 2018	MMG Help Desk Meeting	*The Year In Review*	Novato	27
8 Mar 2018	Marin Master Gardener Training	*Fruit Trees*	Ignacio	36
12 Apr 2018	Marin Master Gardener Training	*Plant Pathology*	Ignacio	35
26 Jul 2018	MMG Help Desk	*Compost: Disease and Nitrogen*	Novato	24

Extension Activities (Cont'd.)

Educational Presentations: IPM (cont'd.)

Date	*Meeting Title*	*Presentation Title*	*Location*	*Attendees*
15 Aug 2018	Sonoma Master Gardeners	*Climate Change and Disease*	Santa Rosa	34
22 Oct 2018	International Oaks	*SOD: What Works, What Doesn't*	UC Davis	46
7 Nov 2018	Santa Rosa JC Arboriculture Class	*Disorders of Landscape Trees*	Santa Rosa	22
10 Jan 2019	Marin Master Gardener Training	*The Role of Master Gardeners*	Ignacio	36
17 Jan 2019	Marin Master Gardener Training	*IPM*	Ignacio	35
14 Mar 2019	Marin Master Gardener Training	*Fruit Trees*	Ignacio	38
10 Apr 2019	San Joaquin Master Gardeners	*Plant Physiology & Water*	Stockton	100
18 Apr 2019	Marin Master Gardener Training	*Plant Pathology*	Ignacio	36
23-24 Apr '19	Sonoma County Master Gardeners	*Pests and Pathogens*	Santa Rosa	38
21 Aug 2019	PAPA	*Tree Physiology and Disease*	Petaluma	88

Educational Presentations: Resource Conservation Through Improved Land Management

6 Jun 2017	Rotary Club of San Francisco	*Tree Selection and Maintenance*	San Francisco	75
24 Aug 2018	Before Fire Strikes	*Post-Fire Tree Survival*	Santa Rosa	55
28 Nov 2018	Sonoma County Parks & Rec.	*Post-Fire Tree Mortality*	Santa Rosa	105
16 Apr 2019	California Native Plant Society	*What's Wrong with Fire-Safe Plant Lists?*	San Rafael	54
19 May 2019	Occidental Fire-Safe Council	*Forest Health in the Context of Fire*	Freestone	50
12 Aug 2019	Marin Conservation League	*What's Wrong with Fire-Safe Plant Lists?*	San Rafael	28

Extension Activities (Cont'd.)

Other (websites/blogs): Resource Conservation Through Improved Land Management

Date	*Title/Description*	*Link*
Oct 2017	Oak Identification website	http://cemarin.ucanr.edu/Programs/Custom_Program97/Types_of_oaks/
Nov 2017	Forest Stewardship website	http://cemarin.ucanr.edu/Programs/Custom_Program97/Forest_Stewardship/

Other (media interviews): IPM

Date	*Interviewed by* *Media / Publication*	*Topic*
12 Apr 2019	Andria Borba KPIX-5 TV	Mosquito control for homeowners
11 Jun 2019	Lyons Filmer KWMR Radio	Japanese knotweed in the San Geronimo watershed

Other (media interviews): Resource Conservation Through Improved Land Management

4 Nov 2017	Steve Garner, Gwen Kilcher KSRO Radio	Landscape after fire
19 Jun 2019	Keri Brenner Marin IJ Newspaper	Campus cleanup, landscaping improvements at College of Marin
30 Jul 2019	Kier Holmes Marin Magazine	Curbing carbon in the garden

BIBLIOGRAPHY

Peer Reviewed	
B - Peer-reviewed scholarly journal publications	7
C - Other peer-reviewed publications	6

Non-Peer Reviewed	
A - Popular press articles	20
D - Technical reports and other non-reviewed articles	1
E - Published abstracts	2

TOTAL	36

PEER REVIEWED

B - Peer-reviewed scholarly journal publications

- Huberli, D.; Reuther, K.D.; Smith, A.; Swain, S.; Tse, J.G.; Garbelotto, M. (2004). "First report of foliar infection of Rosa gymnocarpa by Phytophthora ramorum." *Plant Disease* 88: 430.
- Vettraino, A.M.; Huberli, D.; Swain, S.; Smith, A.; Garbelotto, M. (2006). "A new report of Phytophthora ramorum on Rhamnus purshiana in Northern California." *Plant Disease* 90: 246.
- Swain, S.V.; Harnik, T; Mejia-Chang, M.; Hayden, K.; Bakx, W.; Creque, J.; Garbelotto, M (2006). "Composting is an effective treatment option for sanitization of Phytophthora ramorum infected plant material." *Journal of Applied Microbiology* 101: 815-827.
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- Swain, S.V.; Koike, S.T. (2012). "First report of twig canker on willow caused by Colletotrichum acutatum in California." *Plant Disease* 96(12): 1822.
- Swain, SV; Garbelotto, M (2015). "Phytophthora ramorum can survive introduction into finished compost." *California Agriculture* 69(4): 237-241.
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C - Other peer-reviewed publications

- Swain, S.V.; Garbelotto, M. (2006). Extended abstract on the potential of Phytophthora ramorum to infect finished compost. *Proceedings of the Sudden Oak Death Second Science Symposium*. USDA FS. PSW-GTR 196, 483-486.

- Swain, S.V.; Schmidt, D.; Garbelotto, M. (2008). Preservation of Lithocarpus densiflorus diversity on California's Central Coast, a cooperative project with area residents. *Proceedings of the Sudden Oak Death Third Science Symposium*. USDA FS. PSW-GTR 214, 471-474.
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- Bauermeister, M.; Savio, Y.; Surls, R.; Swain, S.V. (2013). Community Gardens. *ANR Publication 8499*. 1-16.
- DiTomaso, J.M..; Roncoroni, J.; Swain, S.V.; Wright, S.D. (2013). Poison Hemlock. *Pest Note 74162*. UC IPM. 1-4.

NON-PEER REVIEWED

A - Popular press articles

- Swain, S.V. (2002). "An Update on Phytophthora ramorum, causal agent of Sudden Oak Death." *International Oaks* 13: 38-45.
- Swain, S.V. (2007). Mortality projections and treatment recommendations for sudden oak death. *Western Arborist*. 33:2, 48-50.
- Swain, S.V. (2012) A new seed bug (Metapoplax ditomoides). *Green Bulletin* 2, 6
- Swain, S.V. (2012) How irrigation practices can affect pest problems. *Green Bulletin* 2, 1,5
- Parnay, S.; Swain, S.V. (2012). "PSA: A healthy soil is worth its weight in gold." Retrieved 18 Dec 2014, from https://www.youtube.com/watch?v=XG9tn7NsVGs.
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- WD, Tietje; SV, Swain (2015). Help your oak tree tolerate severe drought. UCCE San Luis Obispo. 2.
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D - Technical reports and other non-reviewed articles

- Bauermeister, M.; Swain, S.V.; Rilla, E. (2010). Marin County Community Garden Needs Assessment. UCCE Marin. 1-65. http://ucanr.org/sites/Community_Gardens/files/75850.pdf

E - Published abstracts

- Swain, S.V.; Koike, S.T. (2013). Distribution and host range of Colletotrichum acutatum on Salicaceae in San Francisco's North Bay area. *APS meeting poster*.
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