

NPDN STAR-D Auditing Exercise and Gap Audit at the Nevada Department of Agriculture Laboratory

Karen Snover-Clift and Dawn Dailey O'Brien, Department of Plant Pathology and Plant-Microbe Biology, Cornell University

An NPDN STAR-D Auditing Exercise was conducted at the Nevada Department of Agriculture Plant Pathology Laboratory (NDA-PPL) in Sparks, Nevada on

November 6–8, 2012 hosted by NDA-PPL Laboratory Director, Dr. Shouhua Wang.

This was the second of four scheduled STAR-D Auditing Exercises that are being made possible through a Farm Bill grant for further development of the STAR-D program.

The focus of this year's grant is to develop and strengthen the auditing skills of the nine members of the NPDN STAR-D auditor pool by conducting auditing exercises and gap audits at locations that have begun developing their STAR-D requirements and standards protocols. The first audit was hosted by

the Cornell University, Plant Disease Diagnostic Clinic staff (September 2012) and two more are planned for the spring of 2013 hosted by our colleagues at the University of Florida and Kansas State

University. To prepare our auditors for the first official accreditation audits under STAR-D guidelines, they are required to pass the ISO-17025 Auditor Training Course (our current auditors did this in September of 2011) and participate in at least two auditing exercises.

Kathy Burch, Senior Quality Manager of USDA-APHIS-PPQ-CPHST, served as the lead auditor for this exercise. The remaining auditors were divided into three groups. Although all auditors were present for all aspects of the audit, each group focused on sections of the NDA-PPL STAR-D Quality Management System and was responsible for writing up their focus areas in the auditor's checklist and associated documents. In the future, these documents will be submitted to the NPDN STAR-D



Shouhua Wang describes processing of nematode samples to STAR-D auditors (*top*) and describes the instrumentation used to monitor environmental conditions in his cold storage room (*bottom*). Photos courtesy of Karen Snover-Clift, Cornell University.

Issue Highlights

- Diagnostic tip: making an isolate from large branches and trunks
- 2013 advanced diagnostic workshops announced

Branching Out feature book for sale

- National Repository beta testing – diagnosticians needed

Board for determining the laboratory's accreditation status. In addition to our NPDN members, several National Plant Board members participated in the training session to learn how the NPDN was developing the STAR-D system with thoughts of how they might do the same.

During the audit, Group A, comprised of Kathy Burch, Anne Vitoreli (University of Florida), Jan Byrne (Michigan State University) and Tina Seeland (Minnesota Department of Agriculture), focused on organizational management, document control, customer feedback, corrective and preventive actions, records, internal audits and management reviews. Group B, comprised of Pat Shiel (USDA-APHIS-PPQ-CPHST), Dawn Dailey O'Brien (Cornell University), Karen Snover-Clift (Cornell University) and Lee Ann Johnson (Minnesota Department of

Agriculture), focused on technical requirements, accommodations & environmental conditions, test methods & method validation, equipment, reference materials, and test result quality control. Group C, comprised of auditors Judy O'Mara (Kansas

State University), Jackie Smith (Michigan State University), Geoff Dennis (USDA-APHIS-PPQ-CPHST), and Liz Vavricka (Idaho Department of Agriculture), focused on review of requests and agreements, subcontracting of tests, purchasing, personnel, sample & sample handling, and test result reporting.

The training session occurred over a three day period. On the first day of the auditing exercise, attendees received a

presentation on the progress and future goals of the STAR-D project (look for this in an article format in the December *NPDN News*), a presentation on tools and tips for becoming a compliance investigator, and they reviewed the NDA-PPL and STAR-D Quality Management System documents to develop the auditor's checklist. The audit occurred on the second day and included an opening meeting where Lead Auditor Kathy Burch thanked the laboratory members and administrators for allowing us to conduct this session at their site and informed them how the auditors would proceed with the process. The auditors then used the checklist developed on the first day to collect evidence of conforming to the NDA-PPL and STAR-D standards and document good laboratory procedures. The third day began with the auditing teams developing lists of good procedures observed, suggestions for continued development of their STAR-D program, and nonconformance observations made. Kathy Burch led a closing meeting with the laboratory members and administrators. Afterwards, each group developed a final report describing observations and preparing nonconformance report forms in preparation for submission to the National Quality Manager and, once implemented, the STAR-D Board members for evaluation.

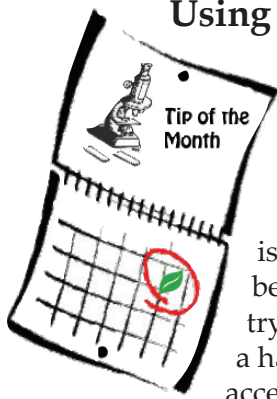
Although the main purpose of the exercise was to develop the skills of the auditor pool members (and based on feedback from the participants this was accomplished), Shouhua and his staff and administrators received a very comprehensive review and input on the development of their STAR-D laboratory accreditation system. 🌿



STAR-D auditors observe Shouhua Wang's NDA-PPL document organization. Photo courtesy of Karen Snover-Clift, Cornell University.

Using a Hammer and Chisel to Isolate From Large Branches and Trunks

Gail Ruhl and Tom Creswell; Purdue Plant and Pest Diagnostic Lab, Purdue University



The next time you receive a large diameter section of a branch or trunk and wish to isolate from discolored woody tissue observed several inches beneath the bark (Fig. 1) do not despair nor injure yourself trying to whittle down to the discoloration. Instead, try using a hammer and chisel, as shown in the accompanying images, to access the desired woody tissue. 🌿

(Clockwise from top right) Fig. 1 Vascular discoloration caused by *Ceratocystis fagacearum* (oak wilt). Photo courtesy of D. W. French, University of Minnesota, Bugwood.org. Figs. 2-5 Stepwise use of hammer and chisel for obtaining wood chips to use on isolation plates. Photos courtesy of Gail Ruhl, Purdue University.



Have a tip you would like to share with your fellow diagnosticians?
Or a technique you would like to learn more about?
Email Gail Ruhl at ruhlg@purdue.edu

NPDN / USDA-APHIS 2013 Advanced Diagnostic Workshops

*Karen L. Snover-Clift, Cornell University,
Department of Plant Pathology and Plant-
Microbe Biology, Cornell University and
Mark Nakhla, USDA-APHIS-PPQ-CHPST-
NPGBL*

The NPDN Diagnostics Program Area Committee and members of USDA-APHIS-PPQ-CHPST-National Plant Germplasm and Biotechnology Laboratory (NPGBL) are pleased to announce the 2013 advanced diagnostic workshops. We have planned the workshops in consecutive weeks beginning on February 26, 2013, so that the Beltsville staff can focus on the workshops in five weeks and devote the rest of the year to other activities. During the spring of 2013, we will again offer advanced trainings on a number of topics.

2013 Advanced Diagnostic Workshops

Week 1: Bioinformatics, February 26–28, 2013, 3 days

Week 2: *Phytophthora*, March 5–8, 2013, 3.5 days

Week 3 (first part of week): Potato Wart, March 11–12, 2013, 2 days

Week 3 (second part of week): Bioinformatics, March 13–15, 2013, 3 days

Week 4: Citrus pathogens, March 19–22, 2013, 4 days

Week 5: Citrus Greening-HLB, March 26–28, 2013, 3 days

Week 1: Bioinformatics, February 26–28, 2013, & Week 3 (second part of week): Bioinformatics, March 13–15, 2013

In previous years we have offered this session in two parts. This year the two parts will be combined and we will add detailed guidance on sequencing PCR amplified fragments either directly or after cloning. The rest of the session will cover analysis of obtained sequences from both plus and minus strands, editing sequences, blasting sequences,

understanding blast results based on size and gene target, when to directly sequence PCR products or clones, which genes are used for sequence analysis for fungi, bacteria, and viruses, what sequence analysis programs are available commercially or as freeware, and hands-on use of sequence analysis programs using sequences from case studies for different pathogen types, and allowing the participants to work with their own sequences.

Week 2: *Phytophthora*, March 5–8, 2013

Due to continued interest, we have scheduled a *Phytophthora* training session. The session is 4 ½ days long and covers ELISA, DNA extraction, conventional PCR (nested and multiplex), real-time PCR (ITS and Elicitin), and interpretation of results.

Week 3 (first part of week): Potato Wart, March 11–12, 2013

Again due to continued interest, we have scheduled a potato wart session.

The session is two days long and will be held the first part of the week with bioinformatics at the end of the same week. Those interested in both topics may want to choose this option to complete both sessions with one trip.

Week 4: Citrus pathogens, March 19–22, 2013

This topic was very popular last year and we could not get everyone interested in to

the sessions offered so hopefully we can accommodate those who missed out last year in this year's session. The session will cover citrus leprosis, sweet orange scab and citrus black spot in a 4½ day session. The training will cover disease symptoms and methods of detection and identification of CiLV, CBS and SOS. The molecular diagnostics will include PCR, real-time PCR, RT-PCR and RT-real-time PCR.

Week 5: Citrus Greening-HLB, March 26–28, 2013

Due to the continued presence and spread, there continues to be a need for HLB training. This session will be done over a three day period and will conclude our training for the year.

More specifics about travel and lodging will be sent directly to participants before the end of December so that they can make their travel plans. Expenses for travel, lodging and meals will be covered from a supplemental, Farm Bill grant for diagnostician training so you will not need to use your funds from this year's NPDN allocation. All expenses will be processed through Cornell University. There is no registration charge for the meeting or for meeting materials. These expenses are covered by our colleagues at USDA-APHIS-PPQ-CPHST-NGBTL. Funds for reimbursement of travel expenses are limited. Priority will be given on a first come, first served basis in order by requests received until funds are exhausted. Please sign-up as soon as possible to ensure your spot in the workshop and your expense coverage! If you are interested in participating in any of these workshops please contact Karen Snover-Clift at kls13@cornell.edu. Thank you! 🌿

Branching Out: Features from the Past for the Future

George Hudler and Dawn Dailey O'Brien, Department of Plant Pathology & Plant-Microbe Biology, Cornell University

We are proud to announce publication of *Branching Out: Features from the Past for the Future*. We've consolidated and organized the 150 updated feature articles previously published in the *Branching Out* newsletter for trees and shrubs into a 300 page book that we're hoping will enable plant health care professionals, educators, Master

Gardeners, etc. to have ready access to up-to-date tree and shrub pest management information. *Branching Out* features contain information on a wide array of the most important pest management issues that plant health care professionals are likely to face in any given year. We've had positive responses from several NPDN diagnosticians from various states who have already purchased the book.

Many of the feature articles deal with pests and pathogens that have similar symptoms (e.g. conifer twig problems, witches' brooms, leaf scorch) but for purposes of this book, an alternative organizational scheme that leads IPM practitioners more directly to relevant information was employed. Each feature, complete with topnotch color illustrations, describes in some detail either an individual pest/pathogen, a group of closely related (by symptoms or hosts) pests/pathogens, plant problems caused by non-infectious agents, or some other important issue.

The feature articles are different from traditional industry or academic generated fact sheets in that writers do more than illustrate pests/pathogens and detail life cycles; they use the opportunity to develop IPM concepts

that justify recommended management strategies.

Practitioners can use this resource to hone their diagnostic skills and to put a conceptual framework behind whatever management strategy they

are proposing to implement. They will also have a bit of an historic record of some unusual outbreaks or epidemics

Everyone here loves your book!

*~Anne Vitoreli,
University of
Florida-Plant
Disease Clinic*

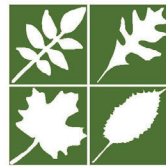
inasmuch as those also would have been worthy of extended treatment in a feature article. Together, the collection

Branching Out: Features from the Past for the Future is available from Branching Out, Department of Plant Pathology, Cornell University, 334 Plant Science Building, Ithaca, NY 14853. Cost \$30 (includes postage and handling); checks made out to Cornell University or order online at <http://branchingout.cornell.edu/FeatureBookInfo.html>

provides end-users with ready answers to vexing questions and enables them to make informed decisions about pest management strategies. We hope you are as pleased with the result as we are!

Additional thanks for the significant feature article contributions from Daniel Gilrein (CCE-Suffolk County) and occasional entries from other colleagues who contributed feature articles. Publication of the book was also made possible, in part, with funding from the New York State IPM program to help produce the book.

You can find more information about the book at http://www.nysipm.cornell.edu/press_rel/branching_out.asp



BRANCHING OUT

An Integrated Pest Management
NEWSLETTER
For Trees and Shrubs

Features from the Past for the Future



Arthropod Pests that May Mimic Disease Problems

Sometimes two different pests will produce look-alike symptoms. In some cases, even arthropod and disease pests may cause similar symptoms, and in these situations diagnosing the cause of symptoms may be challenging. We've chosen several cases where the injury caused by an arthropod pest may look much like the symptoms caused by a pathogen. In each case we list the distinguishing characteristics which will help differentiate between the possible causes of the problem.

1. Eyespot Gall vs. Maple Leaf Spot



Symptom: Spots on maple leaves with dark reddish or purple-brown margin

Possible Causes:

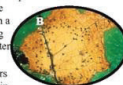
A. Eyespot Gall caused by *Aceriaes ocellaris* (23)

- ▶ Striking yellow and red circles around the gall (The ¼ inch diameter area later turns brown).
- ▶ Slight swelling in center of circle.



B. Maple Leaf Spot (a.k.a. purple-eye leaf spot) caused by *Phyllosticta minima* (33)

- ▶ Small tanish-gray leaf spots with dark, brown to purple borders.
- ▶ Black, pepper-like fruiting bodies present inside the lesions on leaves, most of them on the upper leaf surface and often in a ring pattern. However, fruiting bodies are not evident until later in the season.
- ▶ Sometimes the disensed centers dry and fall out leaving holes in the leaf.
- ▶ Spots are irregularly round and ¼ inch in diameter.
- ▶ Spotting occurs mainly on the leaves of low branches.
- ▶ Increase in disease during rainy season.



2. European Pine Shoot Moth vs. Sphaeropsis Blight (=Diplodia)



Symptom: Browning and death of current year succulent shoots on pine, before needles are fully elongated

Possible Causes:

A. European Pine Shoot Moth (*Rhyacionia buoliana*) (18). Photo A © David McComb, USDA Forest Service, Bugwood.org

- ▶ Dead, hollowed out shoots anywhere on the tree.
- ▶ Hardened resinous masses on terminal and lateral buds in late summer and fall where larvae have bored into shoots.
- ▶ Single larvae may be concealed within the partially hollowed-out bud but larvae are often gone before the damage is seen.
- ▶ The most damaging infestations occur on young trees.



B. Sphaeropsis Blight caused by *Sphaeropsis sapinea* (63)

- ▶ Minute, black pustule fruiting bodies on dead needles (especially under sheaths), cones and twigs. However, fruit bodies may not appear on the newly killed tissue until fall or the following spring.
- ▶ Symptoms first occur on lower branches.
- ▶ Only occurs on mature pines (producing cones).
- ▶ It is more severe on trees under stress.
- ▶ In severe cases, cankers: oblong sunken areas on branches or stem.



Diagnosticians – We Want You for NPDN National Repository Beta Testing

Mike Hill and Eileen Luke, CERIS, Purdue University

Beta testing has begun on the new NPDN National Repository website. The new site has been designed to deliver information in a more efficient and friendly manner and provides newer technologies for software development and reduced IT maintenance costs. One major advantage of the new site is that it supports logging in using the same credentials that are used on the NPDN portal sites such as www.npdn.org. This means there will be one less set of login credentials that users need to maintain.

The goal is to rollout this new site by the end of the year. The URL for accessing the site will not change and no action will be required by the user to access the new site. Data upload testing has already begun and two lab management systems have verified that they can successfully send data to the new site. We anticipate a smooth transition to the new site, but we will also be monitoring it very closely. Diagnosticians who already have access to the NPDN National Repository can

become beta testers and get a sneak peek of the new site. In order to request access you will need to send your name and e-mail address to npdn@ceris.purdue.edu with a note indicating you would like to be added to the list of beta testers. We encourage all diagnosticians who are interested to sign up today.

Stay tuned to the December newsletter for an exact timeline of the rollout for the new system. 🌿

IT News



**National Repository
CERIS**

NPDN
National Plant Diagnostic Network

NPDN National Repository

CERIS
CENTER FOR ENVIRONMENTAL AND REGULATORY INFORMATION SYSTEMS

Welcome to the NPDN National Repository

The Animal & Plant Disease and Pest Surveillance & Detection Network, was established by the Secretary of Agriculture to the Cooperative State Research, Education, and Extension Service (CSREES) to develop a network linking plant and animal disease diagnostic facilities across the country. The National Plant Diagnostic Network (NPDN) will focus on the plant disease and pest aspect of the program. The network is a collection of Land Grant University plant disease and pest diagnostic facilities from across the United States.

For more information on the NPDN project please visit the public site at www.npdn.org.

To request access to the NPDN National Repository please contact NPDN staff at 765-494-9854 or e-mail to npdn@ceris.purdue.edu.

User Login

Username

Password

[Forgot Password?](#)

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W3C HTML 4.01



STAR-D Templates Can Save You Time

Dawn Dailey O'Brien and Karen Snover-Clift, Department of Plant Pathology and Plant-Microbe Biology, Cornell University

Even though you may not plan to become accredited under the STAR-D program for some time, you can begin to create documents, or modify those you already have, that will be used in your laboratory. Our goal is to help all our members undergo the lab accreditation process with minimum frustration. To help streamline that process, we have developed a number of workable document templates that will reduce the amount of time and effort an individual laboratory will need to prepare for the accreditation process. The available STAR-D templates include a quality manual, and a variety of quality procedures, work instructions, and forms. The templates can be found on the NPDN website, Star-D lab accreditation page. As we continue with the program development, we will learn of template needs and add to the inventory of available templates.

Your lab probably has a system for doing business that is already effective, it may fit into the laboratory accreditation system perfectly or it may be informal and undocumented. You will just need to take what you already have and organize it following the NPDN STAR-D Requirements and Standards.

Question: Will I be required to use the STAR-D templates you are creating if I already have a similar document I currently use?

Answer: No. The STAR-D templates are available for your use directly or to serve as a guide for your current documentation. You can use your current documentation as long as it is suitable for incorporation into the Quality Management System. The most important requirement is that

each document used has or can be given a unique tracking number so it can be referenced when needed within your Quality Management System and updates can be clearly identified.

Individual labs can customize the templates for their own lab. In the templates, the areas you will NEED to change are highlighted in blue. That doesn't mean that just those sections can be changed — YOU CAN CUSTOMIZE each of the documents to fit the needs of your lab as long as you stay within the standard. Many labs already have a lot of these documents. You can use documents you already have in place or you create, they just need to be identified and organized.

More ways templates may make this process as easy as possible...

We are collecting some example protocols (these may be work instructions or standard operating procedures) you can use when constructing your documents. Currently there are over 20 example protocols available on the NPDN web site, STAR-D lab accreditation page, provided to us by Anne Vitoreli from the University of Florida. The STAR-D program team will try to organize more of these opportunities for collaboration (like sharing SOPs and diagnostic protocols) to avoid duplication of effort among the NPDN labs.

We will also make available some of our member's quality manuals so that you can compare the template of the quality manual to some actual quality manuals. As you begin developing your quality manual, in some sections you may wonder about how other members handled a section...having some actual quality manuals available as a reference, may help! ★



Malacology Workshop at University of California, Davis

Dick Hoenisch, Department of Plant Pathology, University of California at Davis

The world of snails, slugs, and mollusks is the subject of the WPDN malacology workshop from March 26–28, 2013. This three day workshop will be taught by David Robinson, Patrick



Marquez, Greg Bartman, all identifiers for the USDA-APHIS-PPQ, and Rory O'Donnell, an expert on California slugs and snails at University of California, Riverside. The cost is still being estimated, but from past workshops the registration will be near \$500. Contact Richard Hoenisch at

rwhoenisch@ucdavis.edu if interested in attending. 🌿

Regional News

National Events

August 4–8, 2013

National Plant Board 2013 Annual Meeting
Louisville, KY

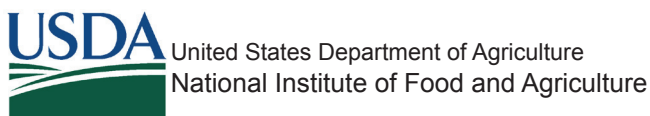
August 10–14, 2013

2013 APS-MSA Joint Meeting
Austin, TX

Upcoming Events

Share Tips and News with Your Colleagues

Recently write an article for a trade journal? Do you have a tip, announcement, regional news or network update you would like to include in the *NPDN News*? Email Rachel McCarthy at rachel.mccarthy@cornell.edu



Rachel McCarthy, Editor
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