California Native Plant Society

Plant Science Training Program
www.cnps.org/workshops

Introduction to Plant Identification

15 Common Plant Families of Southern California

Dates: June 5-7, 2018 (Tuesday - Thursday)
Location: San Bernardino Mountains - Big Bear area, CA
Instructors: Sandy Namoff, Claremont Colleges Laboratory Coordinator; & Nick Jensen, CNPS Southern California Conservation Analyst
Registration: $395 CNPS Members / $415 Non-Members

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Target Audience: This workshop will be taught at a beginner level and is open to anyone interested in learning about or improving their knowledge of plant terminology and the characteristics of common plant families, and becoming competent at plant keying using the *Jepson Manual* and online resources. Those just entering the world of plant identification will benefit from learning the diagnostic characteristics of the most important plant families in CA. Those with prior plant identification experience will be able to refresh their skills and increase their proficiency with more difficult groups such as the Poaceae (grasses) and Asteraceae (sunflowers). Emphasis will be placed on common groups of plants in Southern CA; however, information learned in this class will be readily applicable throughout CA and the world.

Description: This is a 3-day introductory workshop. We will begin by teaching basic plant morphology with a focus on the structures necessary for plant ID. Participants will learn the specialized terminology necessary to identify plants in 15 common CA plant families. These families contain more than 5000 taxa, which account for more than 70% of the plant diversity in CA. Learning the characteristics of these plant families will reduce the amount of time required to key many plants to genus and species. We will utilize live material and taxonomic keys to better understand morphology in each family. Scientific names, along with common names, will be used throughout the workshop. The class will include 2 days of classroom presentations and exercises and one full day in the field in the San Bernardino Mountains. Common native families, genera, and species will be covered, including species in conifer forest, oak woodland, montane chaparral, and meadows.

To earn a certificate of completion, participants must pass an optional quiz at the end of the workshop focusing on identifying common plant structures, sight ID of families covered, and effective use of taxonomic keys for plant ID.

Participants will learn:
- Basic plant morphology terminology
- How to recognize 15 families of vascular plants encompassing 70% of the plant diversity in California
- How to identify some common tree, shrub, and herbaceous species by sight
- Tips for remembering the differences between similar plant families and species
- How to use dichotomous keys for plant identification including *The Jepson Manual,* 2nd Edition
- Additional resources available to help identify plants

The following plant families will be covered: Apiaceae (parsley), Asteraceae (sunflower), Brassicaceae (mustard), Caryophyllaceae (pink), Cyperaceae (sedge), Ericaceae (heather), Fabaceae (pea), Lamiaceae (mint), Onagraceae (evening primrose), Orobanchaceae (broomrape), Poaceae (grass), Plantaginaceae (plantain), Polemoniaceae (phlox), Polygonaceae (buckwheat), Rosaceae (rose).

Schedule (subject to change):

Day 1 - Tuesday, June 5 *Introduction to Plant Identification & "Easy" Plant Groups*
Meet at Big Bear Discovery Center. Indoor lab/lecture all day.

8:00 am	Meet and greet; welcome and orientation
8:30 am	Classroom introduction to plant morphology and taxonomy
9:30 am	Brassicaceae, Onagraceae, Apiaceae, Fabaceae, Boraginaceae, Polygonaceae
Noon	Lunch break (please bring your own lunch and water)
1:00 pm	California plant diversity lecture
1:30 pm	Polemoniaceae, Rosaceae, Lamiaceae, Plantaginaceae, Orobanchaceae, Ericaceae, Caryophyllaceae
3:45 pm	Plant keying practice / demonstration
5:00 pm	Break for the day

Day 2 - Wednesday, June 6 *Plant Identification & Keying in the San Bernardino Mountains*
Meet at designated location, carpool to field site. All day in the field practicing sight ID/keying selected plant families/genera.

8:00 am	Meet at designated location, carpool to the Pebble Plains: Baldwin Lake Ecological Reserve

Noon	Lunch in the field (please bring your own lunch and water)
1:00 pm	Continued field study
5:00 pm	Return to cars & break for the day

Day 3 - Thursday, June 7 *Advanced Plant Identification & Keying, Quiz.*
Meet at Big Bear Discovery Center. Indoor lab/lecture all day.

8:00 am	Asteraceae, Poaceae, Cyperaceae, Juncaceae
9:45 am	Plant identification and keying practice
Noon	Lunch break (please bring your own lunch and water)
1:00 pm	Continued plant identification and keying practice
3:30 pm	Quiz (70% score or better for certificate of completion), course evaluations
5:00 pm	Workshop concludes

Venue: Classroom portions of this workshop will be held at the Big Bear Discovery Center, 40971 N Shore Drive, Fawnskin, CA 92333. Field exercises will take place nearby in the San Bernardino Mountains. Maps and directions will be provided to registered participants about a week before the workshop.

About the San Bernardino Mountains: The San Bernardino Mountain habitats near Big Bear feature some of the highest diversity of rare plants in the state. We will visit habitat for some of the rarest taxa in CA including *Astragalus leucolobus* (Big Bear Valley woolypod) and *Castilleja cinerea* (San Bernardino Mountains owl's clover). We will also visit *Streptanthus juneae*, a species recently described by Nick that is endemic to the San Bernardino Mountains. There are few places in Southern CA where botanists can visit a multitude of habitats in such close proximity. This makes the area an excellent place for beginners to learn common families and genera and more advanced students of the CA flora to hone their skills.

Materials: Please bring...
- Hand lens, metric ruler
- Clipboard, field notebook, pencils, scotch tape, bags for collecting plant material
- Sturdy shoes/boots, hat, weather-appropriate field clothing (e.g. protection from rain, sun, heat/cold, insects, etc.)
- *The Jepson Manual*, 2nd Edition (optional, but highly recommended)
- Packable lunches for Wednesday, plenty of water and snacks for all 3 days

CNPS will provide handouts, dissecting microscopes, technical references, and online resources. We will send some advance materials on plant structure terminology.

Physical Requirements: Participants should be physically able to walk up to a mile at a time on narrow and uneven paths, along roads, and trails, and remain outside for up a total of 8 hours. The workshop will be held rain or shine. We will likely spend most of our time between 5,000 and 7,000 feet in elevation. We will spend approx. 33% of the time in the field.

About the Instructors: Sandy Namoff, PhD, completed her graduate research in botany at Rancho Santa Ana Botanic Garden (RSABG)/Claremont Graduate University investigating evolutionary processes that have shaped the California bindweeds, *Calystegia*. She is also interested in conservation genetics and is evaluating the population dynamics of *Calystegia stebbinsii*, a rare edaphic endemic of the Sierra Nevada Foothills. Sandy obtained her B.S. in Biology from Florida International University and was a research assistant for the Palm Biology Program at Fairchild Tropical Botanic Garden. Since moving to California in 2010 she has become interested in the California Floristic Province and its plant communities. As an adjunct professor, Sandy has taught Field Botany at California State University Fullerton and has been an instructor for numerous plant related courses and workshops at RSABG, Theodore Payne Foundation, and the Claremont Colleges. Sandy is currently the lab coordinator for introductory biology at the W.M. Keck Science Department of the Claremont Colleges.

Nick Jensen completed his PhD in botany at Rancho Santa Ana Botanic Garden (RSABG)/Claremont Graduate University. His research interests include biogeography, rare plant conservation, and biodiversity. His research projects include the flora of Tejon Ranch, threats to California's rare plants, and evolutionary relationships in *Streptanthus* (jewelflowers). Nick has a B.S. in Environmental Horticulture from U.C. Davis and previously served as the Rare Plant Program Director for CNPS. He is currently a member of the CNPS Rare Plant Program Committee, served as Southern California Botanists president in 2015-2016, and is a fellow of the Switzer Foundation. Over the past decade Nick has led dozens of field trips, and has taught numerous workshops on plant taxonomy and basic botany for organizations including CNPS, Theodore Payne Foundation, Friends of the Jepson Herbarium and RSABG. He has also worked as a botanist for the US Forest Service, Chicago Botanic Garden, and the private consulting industry. Nick is currently the CNPS Southern California Conservation Analyst.

Registration Information: Visit www.cnps.org/workshops to sign up for this class. Registration fees are discounted for CNPS members; please visit www.cnps.org/join if you would like to become a member. Class size is limited to 20 participants. The last day to sign up for this workshop is ***Monday, May 28, 2018.***

Cancellation Policy: See full CNPS workshop cancellation policy at www.cnps.org/workshops. The last day to cancel your registration and receive any refund for this workshop is ***Monday, May 21, 2018.*** Refunds may be subject to processing fees. Please send cancellation requests by e-mail to Becky Reilly, breilly@cnps.org.