Ryan N. Contreras

Department of Horticulture

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**A. Education and Employment Information**

1. Education

2009 Ph.D. University of Georgia, Horticulture, Athens, Georgia. Interspecific hybridization, ploidy manipulation, and cytological and genetic analyses as tools for breeding and improvement of *Callicarpa* L., *Cryptomeria* D.Don., *Hibiscus* L., and *Tecoma* Juss.

2006 M.S. North Carolina State University, Horticultural Science, Raleigh, North Carolina. Azaleodendrons: Investigating parentage, fertility, and effects of polyploidy among hybrids of deciduous azaleas and evergreen rhododendrons.

2002 B.S. North Carolina State University, Horticultural Science, Raleigh, North Carolina

2. Employment

2021 – current. Professor, Department of Horticulture, Oregon State University

2021 – current. Associate Head, Department of Horticulture, Oregon State University

2016 – 2021. Associate Professor, Department of Horticulture, Oregon State University

2009 – 2016. Assistant Professor, Department of Horticulture, Oregon State University

2006 – 2009. Graduate Research Assistant, Department of Horticulture, University of Georgia

2004 – 2006. Graduate Research Assistant, Department of Horticultural Science, North Carolina State University

2002 – 2004. Laboratory Technician, Department of Crop and Soil Science, North Carolina State University

**B. Teaching, Advising and other Assignments**

**1. Instructional Summary**

I am the lead instructor for 4 site-based courses and 4 online courses and have instructed more than **3,400 students** to date. I have made significant contributions to the undergraduate program through course adjustment to better meet the program goals. Additionally, I have developed online versions of my courses to expand the reach of our program to serve place bound and second career students.

My primary goal is to be effective in educating students such that they will be successful in future courses and their careers. I have designed my courses with input from other instructors within the Department, industry representatives, and my own experiences. I strive to make the material relevant to each student and relate how it applies to his or her respective career goals. Contributing to this is establishing an organized flow to the course material and setting well-defined course objectives such that students know the path and what is expected. I strive to be flexible to students’ needs but still maintain the level of rigor that is characteristic of my teaching program. I address students’ individualism by providing numerous methods of instruction and continuing to evolve course assignments to address varying talents and learning styles. A particular point of pride for me in my teaching program is my response to constructive criticism from peers and students. On several occasions I have put into practice new suggested techniques as quickly as the very next class period.

a. Credit Courses

***Lead or co-instructor***

*Campus-based*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course** | **Title** | **Enrolled** | **Term** | **Year** |
| HORT 311 | Plant Propagation | XX, 41, 46, 45, 44, XX, XX | W | 2023, 22, 21, 19, 18, 17 |
| HORT 301 | Biology of Horticulture | 28, 51, 43, 34, 58, 55, 55, 62, 60, 65, 66, XX | F | 2022, 21, 20, 19, 17, 16, 15, 14, 13, 12, 11 |
| HORT 226 | Landscape Plant Mat. I | 15, 11, 11, 18, 28, 17, 16, 17, 29, 21, 15, 25, XX | F | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10 |
| HORT 228 | Landscape Plant Mat. II | 16, 20, 20, 19, 12, 17, 20, 28, 21, 17, 22, XX, XX | S | 2022, 21, 20, 19 18, 17, 16, 15, 14, 13, 12, 11, 10 |
| HORT 505 | Ethics in Research | 8 | S | 2015 |
| HORT 405 | Propagation and field eval. of *Ribes sanguineum* | 1 | S | 2014 |
| HORT 402 | Phenology of maples | 1, 1, 1 | F, W, S | 2019, 2020, 2020 |
| HORT 412 | Career Exploration | 31 | W | 2013 |
| HORT 301 | Prin. Hort. Technology | 59 | F | 2010 |
| **TOTAL ENROLLMENT** | | **1,472** |  |  |
| **STUDENT CREDIT HOURS** | | **5,082** |  |  |

*Online*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Course** | **Title** | **Enrolled** | **Term** | **Year** |
| HORT 310E | Principles of Plant Propagation | 39, 33, XX | W | 2022, 21, 20 |
| HORT 311E | Plant Propagation | 46, 43, 37 | W | 2019, 18, 17 |
| HORT 311E | Plant Propagation | 27 | F | 2016 |
| HORT 301E | Biology of Horticulture | 57, 42, 44, 44, 27, 47, 39, 42, 41, 29, 26, XX | F | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11 |
| HORT 301E | Biology of Horticulture | 51, 43, 44, 34, 40, 37, 30, 40, 17, XX, XX | S | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12 |
| HORT 226E | Landscape Plant Mat. I | 47, 60, 40, 38, 43, 34, 31, 33, 33, 23, 14, 5, XX | F | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10 |
| HORT 228E | Landscape Plant Mat. II | 28, 32, 37, 16, 29, 25, 31, 17, 21, 6, XX, XX | S | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11 |
| **TOTAL ENROLLMENT** | | **1,931** |  |  |
| **STUDENT CREDIT HOURS** | | **6,709** |  |  |

*Contributor*:I have served as a contributing lecturer 68 times.

|  |  |  |  |
| --- | --- | --- | --- |
| **Course** | **Title** | **Term** | **Year** |
| HORT 503z | Special Topic Title: Breeding Clonally Grown Crops | Fall | 2021 |
| PBG 507 | Plant Breeding and Genetics Seminar | Winter | 2020 |
| HORT 481/581 | Case Studies | Spring | 2020, 19, 18 |
| HORT 480/580 | Case Studies | Spring | 2022, 21 |
| HORT 112 | Intro. Hort. Systems, Practices, & Careers | Fall | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10 |
| PBG 450/550 | Plant Breeding | Spring | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10 |
| PBG 431 | Plant Genetics Recitation | Winter | 2023, 22, 20, 19, 18, 17, 16, 15, 14, 13 |
| HORT 412 | Career Exploration | Winter | 2022, 21, 20, 19, 16, 12 |
| HORT 511 | Res. & Edu. Persp. in Hort. | Fall | 2022, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10 |
| HORT 505 | Plants and Patents | Spring | 2021, 20, 17, 14 |
| PBG 519 | Curr. Topics in Plant Breeding and Genetics | Spring | 2018, 2013 |

zWashington State University, Department of Horticulture

b. Non-Credit Courses and Workshops

I have presented 40 talks to growers, stakeholders, and the public as part of my outreach including organizing and hosting annual field days for growers and other industry professionals. This does not include the annual Ornamental Plant Breeding Field Day held each June, nor does it include the annual meeting of the Ornamental Plant Breeding Crop Advisory Committee. Both of these are key meetings during which I update growers and colleagues on our research activities and seek input on the direction of the program and potential releases.

January 26, 2022. Breeding for Non-Invasive Nursery Crops: Status of Cultivars and Regulation. Western Region IPPS meeting. Wilsonville, OR.

September 30, 2022. Breeding for Non-Invasive Nursery Crops: Status of Cultivars and Regulation. Eastern Region IPPS meeting. Hauppauge, NY. ***Invited.***

July 11, 2021. How Safe is Safe Enough? *Buddleja* as a test case for breeding for sterility. Cultivate! Presented by AmericanHort. Columbus, OH**. *Invited and funded***

July 10, 2021. For the Common Good: Public Breeding Programs Address the Needs of the Industry. Cultivate! Presented by AmericanHort. Columbus, OH**. *Invited and funded***

*PRIOR TO PROMOTION TO PROFESSOR*

February 11, 2020. Bred for Success: Targeting Issues That Keep Good Plants Down. Willamette Valley Hardy Plant Group. Eugene, OR. ***Invited***

August 23, 2019. Hot off the press! New releases from OSU plant breeding. Farwest Show. Portland, OR.  ***Invited***

August 22, 2019. Time for CRISPR? A look at creating novel ornamentals with gene editing and genetic engineering (GE) techniques. Farwest Show. Portland, OR. ***Invited***

August 21, 2019. Where Do We Go From Here? *Weedy Ornamentals: Breeding, Evaluation, and Regulation***.** Farwest Show**.** Portland, OR. ***Invited***

August 9, 2019. New Plants from OSU. Oregon Garden Education Series. Silverton, OR. ***Invited***

June 18, 2019. Annual Update on OSU Nursery Plant Breeding. Ornamental Plant Breeding Field Day.Corvallis, OR. ***Organizer***

March 7, 2019. Tree breeding at OSU. Shade Tree Growers Meeting. Aurora, OR.

January 8, 2019. The growing dead: plants you thought passé get brought back to life. Southern Plant Conference. Baltimore, MD. ***Invited***

November 10, 2018. New plants take root in the rich soil of collaboration. Independent Plant Breeders Conference. Mobile, AL. ***Invited***

August 23, 2018. Farwest Show Hosted by the Oregon Association of Nurseries.Portland, OR. ***Invited***

July 16, 2018. Back from the ban: the complex issue of sterile cultivars from invasive species. Cultivate! 2018 presented by AmericanHort. ***Invited and funded***

June 22, 2018. Annual Update on OSU Nursery Plant Breeding. Ornamental Plant Breeding Field Day. Corvallis, OR. ***Organizer***

March 21, 2018. Plant Propagation. Lane County Master Gardener Training. Eugene, OR.

October 19, 2017. The Struggle is Real (but Fun!): Long Term Breeding at a Public University. International Plant Propagators’ Society **–** Western Region Annual Meeting.Wilsonville, OR.

August 25, 2017. What’s New from Oregon State Plant Breeding. Farwest Show Hosted by the Oregon Association of Nurseries.Portland, OR. ***Invited***

June 15, 2017. Annual Update on OSU Nursery Plant Breeding. Ornamental Plant Breeding Field Day. Corvallis, OR. ***Organizer***

September 7, 2016. New Trees and Shrubs: Aspirations and Accomplishments. Western Nursery and Landscape Association. Webinar.

June 24, 2016. Study Weekend for the Hardy Plant Society of Oregon – Hosted by the Salem Hardy Plant Society. New Trees and Shrubs: Aspirations and Successes. Salem, OR. ***Invited***

June 17, 2016. Annual Update on OSU Nursery Plant Breeding. Ornamental Plant Breeding Field Day.Corvallis, OR. ***Organizer***

March 17, 2016. Not Just a Pretty Face: Breeding Plants that Work. VNLA Webinar.

March 5, 2016. Seeds of Spring session of Josephine County Master Gardener Association. Developing new landscape plants. Grants Pass, OR. ***Invited***

January 21, 2016. Western University at the 2016 Western Nursery and Landscape Association Trade Show. Not just a pretty face: Breeding good looking plants that work. Kansas City, MO. Attendance: ***Invited and Funded***

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

January 23, 2015. Idaho Hort Expo hosted by the Idaho Nursery & Landscape Association. From genes to cool plants. Boise, ID. ***Invited and Funded***

January 6, 2015. Green and Growin’ hosted by the North Carolina Nursery and Landscape Association. Assessing inheritance of ornamental traits. Greensboro, NC. ***Invited and Funded***

August 21, 2014. Farwest show sponsored by the Oregon Association of Nurseries. From genes to cool plants. Portland, OR. ***Invited***

January 9, 2014. Master Gardener Training. Tangent, OR. Botany Basics for Gardeners.

November 6, 2013. Oregon Shade Tree Growers Meeting. Aurora, OR. Progress on shade tree development at OSU.

August 24, 2012. Farwest Show sponsored by the Oregon Association of Nurseries. Ornamental Plant Breeding at Oregon State University. Portland, OR. ***Invited***

July 16, 2012. Northwest Nursery Research Day. Breeding for the Valley and beyond. Silverton, OR.

November 2, 2011. Shade Tree Growers Meeting. Shade Tree Breeding at OSU. NWREC, Aurora, OR.

February 23, 2011. Master Gardener Mini-College. Reigning in Rogues Revisited: Developing Sterile Forms of Nursery Crops. The Dalles, OR.

September 7, 2010. Nursery Research and Extension Day. Introduction to the Ornamental Plant Breeding Program at OSU. NWREC OSU, Aurora, OR.

July 30, 2010. Master Gardener Mini-College - Reigning in Rogues: Developing Sterile Forms of Nursery Crops. Corvallis, OR.

June 24, 2010. Oregon Department of Agriculture Nursery Certification Staff Meeting. Ornamental Plant Breeding at Oregon State University. Salem, OR.

June 2, 2010. Seed to City: The Journey of an Urban Tree - Discussion on interaction of the OSU Nursery Breeding Program and the nursery industry. Boring, OR.

June 3, 2010. Seed to City: The Journey of an Urban Tree - Trends in Nursery Crop Development. Silverton, OR.

**c. Curriculum Development**

* Assisted in developing Ecampus PBG joint option in HORT/CSS
* Helped develop Principles of Plant Tissue Culture (PBG 440) and Plant Tissue Culture Lab (PBG 442).

*PRIOR TO PROMOTION TO PROFESSOR*

* Successful Category II proposal to change the online version of HORT 311 – Plant Propagation to HORT 310 – Principles of Plant Propagation. Spring 2019.
* Review Category I and II proposals in role as Graduate Council representative from College of Agricultural Sciences and as Graduate Council Chair. 2017-18
* Regularly review options within Horticulture major. Led revision of Plant Breeding and Genetics option to create more flexibility for students to tailor degree program. 2018
* Successful Category II proposal to change the name of HORT 301 – The Biology of Horticulture to HORT 301 – Growth and Development of Horticultural Crops. Fall 2017.
* Submitted a Category II with Shawn Mehlenbacher to establish PBG 551 – Breeding Clonal Crops as a permanent course Fall 2014 (first offered as PBG 551 - Fall 2016)
* College of Agricultural Sciences Curriculum and Assessment Committee – 2013 – 2016.

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

* Helped develop and establish graduate Plant Breeding and Genetics Option in Departments of Horticulture and Crop and Soil Science - 2013
* Helped develop and establish undergraduate Plant Breeding and Genetics Option in Departments of Horticulture and Crop and Soil Science - 2012
* Three Category II proposals approved Winter 2011
* HORT 226 increased from 3 to 4 credits; material increased to offset removal of HORT 227
* HORT 228 increased from 3 to 4 credits; material increased to offset removal of HORT 227
* HORT 301 name changed from Principles of Horticultural Technology to The Biology of Horticulture; material altered to reflect feedback of upper division instructors
* HORT 226 Online, Developed Summer 2010; offered Fall 2010
* HORT 228 Online, Developed Winter 2011; offered Spring 2011
* HORT 301 Online, Developed Summer 2011; offered Fall 2011
* Undergraduate Curriculum Committee, December 2009 − present

**d. Graduate and Undergraduate advising/directing.** I have served as a mentor to **20 undergraduate students** conducting research projects and served on one Undergraduate Honors Thesis committee.

**Graduate students.** Major or co-major professor for 4 Ph.D. students and 7 M.S. students. Committee member of 8 M.S. and 5 Ph.D. students. Graduate Council Representative (G.C.R.) for 10 M.S. students and 10 Ph.D. students. Graduate students for whom I have served as major professor have gone on to hold distinguished positions including tenure-track Assistant Professor at NC State, Director of Horticulture and Facilities at the Santa Barbara Botanic Garden, Tree and Shrub Breeder and Manager of New Plant Development Program at the Morton Arboretum, Curator of Collections and New Plant Manager at the Morton Arboretum, Director and Curator of the Caine Conservatory at High Point University, Plant Breeder at Bailey Nurseries, and Plant Breeder at Oregon CBD.

**Graduate students advised**

Student Dept. Role Degree Year of Graduation

M. Southern HORT Major Prof Ph.D. 2027 (anticipated)\* *pending matriculation*

W. Blanchard HORT Major Prof M.S. 2024 (anticipated)

C. Still HORT Major Prof M.S. 2023 (anticipated)

A. McLeod HORT Co-Major Prof M.S. 2023 (anticipated)

K. Neill HORT Major Prof M.S. 2020

H. Chen HORT Major Prof Ph.D. 2018

J. Lattier HORT Major Prof Ph.D. 2017

J. Schulze HORT Major Prof M.S. 2017

K. Shearer-Lattier HORT Major Prof M.S. 2016

J. Rothleutner HORT Major Prof M.S. 2012

G. Wang CROP Co-Major Prof Ph.D. 2010

**Graduate students, committee member**

Student Dept. Role Degree Year of Graduation

J. High CEOAS G.C.R. Ph.D. 2027 (anticipated)

V. Ribeiro CSS Comm. Member Ph.D. 2025 (anticipated)

R. Mooneyham HORT Comm. Member Ph.D. 2025 (anticipated)

S. Voyvot SFM G.C.R. M.S. 2024 (anticipated)

N. Ryan FES G.C.R. M.S. 2022 (anticipated)

B. Celebioglu HORT Comm Member Ph.D. 2023 (anticipated)

J. Hayes HORT Comm Member Ph.D. 2023 (anticipated)

D. Choi FERM G.C.R. M.S. 2022 (anticipated)

J. Stevenson FES G.C.R. Ph.D. 2022 (anticipated)

R. Lenz BPP G.C.R. Ph.D. 2022

O. Urhan FES G.C.R. Ph.D. 2023 (anticipated)

G. Komaei Koma HORT Comm Member Ph.D. 2020

M. Hernandez HORT Comm Member M.S. 2020

M. Cirak HORT Comm Member M.S. 2020

K. Williams WRE G.C.R. M.S. 2019

J. Petter FES Comm Member M.S. 2018

O. McMurtey WRM G.C.R. M.S. 2018

I. Sandlin BPP Comm Member M.S. 2018

S. Fuller MCB Comm Member M.S. 2017

B. Greer FES G.C.R. Ph.D. 2017

A. Graham HORT Comm Member M.S. 2016

S. Greenleaf FES G.C.R. M.S. 2016

B. Mirzaei WSE G.C.R. Ph.D. 2016

D. Marias FES G.C.R. Ph.D. 2016

E. Rowley MCB G.C.R. Ph.D. 2016

L. Gryczkowski WRE G.C.R. Ph.D. 2015

N. Al-Bader HORT Comm Member M.S. 2014

J. Miskella CROP Comm Member M.S. 2014

V. Petro FES G.C.R. M.S. 2013

B. Saffell FES G.C.R. M.S. 2013

A. Claiborne FSW G.C.R. M.S. 2013

T. Kim AEC G.C.R. Ph.D. 2012

M. McGlinchy FS G.C.R. M.S. 2011

M. Nadeem Iraq Intl. Review Ph.D. 2011

**Undergraduate students advised**

***Thesis***

*PRIOR TO PROMOTION TO PROFESSOR*

Seely, T. 2018. Oregon State University Undergraduate International Research Thesis. *Prunus laurocerasus*: A Study of Reducing Gamete Development through Haploidy and Determining Cytotype Variability in Pollen. *Mentor.*

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

Jeknic, S. 2015. Oregon State University Undergraduate Honors Thesis. Alteration of flower color in *Solanum lycopersicum* through ectopic expression of a gene for capsanthin-capsorubin from *Lilium lancifolium*. *Committee member.*

Haddad, A. 2015. Oregon State University Undergraduate Research Thesis. Comparing methods of sample handling and preparation in genome sizing of *Acer* using flow cytometry. *Mentor.*

Doyle, T. 2013. Oregon State University Undergraduate Thesis Research. In situ chromosome doubling of four Oregon native plants of varying growth forms. *Mentor.*

Cummings, C. Summer 2011-Spring 2012. Oregon State University Undergraduate Research. Viability and longevity of *Prunus laurocerasus* and *P. lusitanica* pollen under varying storage conditions*. Mentor.*

***Independent Research and Interns***

*PRIOR TO PROMOTION TO PROFESSOR*

Canlapan, R. 2020. Assessing greenhouse fertility and genome size of *Buddleja* cultivars. URSA Engage participant mentor.

DiPasquale, M. 2019. Characterizing *Camellia* in Corvallis: Phenology, growth and genome size. URSA Engage participant mentor.

Wilhelm, L. 2019. Assessing ploidy variation of *Berberis nervosa* over its geographic distribution. URSA Engage participant mentor.

Ashcraft, J. 2018-. Phenology of the *Acer* collection in the Ornamental Plant Breeding Program.

Sasso, J. 2018. Non-targeted mutagenesis of *Spiraea douglasii*: assessing germination, growth, and morphology of plants after exposing seeds to varying concentrations of EMS.

Woodworth, P. 2018. Determining ploidy levels of seedlings from tetraploid and cytochimeric parents of various taxa: Observations from Amur & Norway maple and bigleaf hydrangea.

Hamblin, Q. 2017-18. Assessing morphology of a ploidy series in crabapple and determining ploidy level of open-pollinated seedlings.

Alanko, G. 2017. Determining ploidy levels of Amur and Norway maple seedlings.

Boensma, M. Spring-Summer 2016. International Intern from Holland. Inheritance of floral and foliar traits in *Ribes sanguineum.*

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

Reeve, R. Fall 2014. Oregon State University Undergraduate Research Experience (non-credit). Comparing methods of application of two mitotic inhibitors in vivo to induce chromosome doubling of *Hibiscus syriacus*.

Quinones, G. Fall 2014 – present. Oregon State University Undergraduate Research Experience (non-credit). Mutagenesis of *Carpenteria californica* using varying rates of gamma radiation.

Chan, M. Summer 2013 – Summer 2014. Oregon State University Undergraduate Research Experience (non-credit). Field evaluation and herbarium voucher collection for 49 species of *Cotoneaster.*

Pham, T. Spring 2013. Oregon State University Undergraduate Research Credits. In vitro polyploidization of *Hydrangea macrophylla.*

Lukowski, K. Summer 2012. Oregon State University Summer Intern.

Mapping the woody flora of Oregon State University

Hollis, I. Summer 2009, Clackamas Community College, OR

Propagation and cataloguing newly received accessions for the Ornamental Plant Breeding Program

**Visiting scientists hosted/trained**

Farhat Avin. 2018-19. Anther culture of *Prunus laurocerasus* to develop haploids.

**e.** **Team or collaborative efforts**

* I have served as a contributor in nearly 70 courses during 2010-22
* Co-taught 1 course (HORT 412) during winter 2013 with Kelly Donegan
* Survey of student study techniques in HORT 226 and HORT 228 with Rob Golembiewski, previously Assistant Professor, Department of Horticulture, and Jonathan Velez, Assistant Professor, Department of Agriculture Education to determine if there is a correlation between study methods and student performance. Manuscript was published in HortTechnology.

**f. International Teaching:**

Preparing two guest lectures (Mutation Breeding & Methods and Uses of Polyploidy) for the course *Fundamentals of Plant Breeding and Genentics.* Department of Plant Breeding, Center of Plant Systems Biology and Biotechnology (CPSBB), Plovdiv, 4000, Bulgaria

**2. Student Evaluation.** My student evaluation of teaching has been positive and shown an increasing trend since my first course offerings. Recent, positive feedback has commented on my enthusiasm, organization, and clear goals for student learning. Course SET rates the course overall and Instructor SET addresses my contribution to courses.

**a. Credit Courses**

***Campus-based*** median scores

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Term |  | Course SET\* | | | Instructor SET\* | | |
|  |  | Respondents | Contreras | Hort | OSU | Contreras | Hort | OSU |
| Hort 301 | F22 |  |  |  |  |  |  |  |
| Hort 226 | F22 |  |  |  |  |  |  |  |
| Hort 228 | S22 |  |  |  |  |  |  |  |
| Hort 311 | W22 |  |  |  |  |  |  |  |
| Hort 301 | F21 |  |  |  |  |  |  |  |
| Hort 226 | F21 |  |  |  |  |  |  |  |
| Hort 228 | S21 |  |  |  |  |  |  |  |
| Hort 311 | W21 |  |  |  |  |  |  |  |
| Hort 301 | F20 |  |  |  |  |  |  |  |
| Hort 226 | F20 |  |  |  |  |  |  |  |
| Hort 228 | S20 |  |  |  |  |  |  |  |
| Hort 311 | W20 | 15 | 5.4 | 5.4 | 5.1 | 5.4 | 5.6 | 5.4 |
| Hort 301 | F19 | 11 | 5.8 | 5.5 | 5.4 | 5.9 | 5.6 | 5.5 |
| Hort 226 | F19 | 2 | 5.5 | 5.5 | 5.4 | 5.5 | 5.6 | 5.5 |
| Hort 228 | S19 | 7 | 5.6 | 5.5 | 5.3 | 5.9 | 5.7 | 5.5 |
| Hort 311 | W19 | 20 | 5.1 | 5.4 | 5.3 | 5.4 | 5.6 | 5.5 |
| Hort 301 | F18 | 13 | 4.6 | 5.6 | 5.4 | 5.0 | 5.6 | 5.6 |
| Hort 226 | F18 | 6 | 5.7 | 5.6 | 5.4 | 6.0 | 5.6 | 5.6 |
| Hort 228 | S18 | 5 | 5.9 | 5.4 | 5.3 | 5.7 | 5.5 | 5.5 |
| Hort 311 | W18 | 12 | 5.6 | 5.5 | 5.3 | 5.8 | 5.6 | 5.5 |
| Hort 301 | F17 | 25 | 5.0 | 5.5 | 5.4 | 5.3 | 5.5 | 5.5 |
| Hort 226 | F17 | 10 | 5.3 | 5.5 | 5.4 | 5.6 | 5.5 | 5.5 |
| Hort 228 | S17 | 9 | 5.4 | 5.4 | 5.2 | 5.7 | 5.5 | 5.4 |
| Hort 311 | W17 | 24 | 4.9 | 5.1 | 5.2 | 5.0 | 5.3 | 5.4 |
| Hort 301 | F16 | 33 | 5 | 5.1 | 5.3 | 5.1 | 5.3 | 5.4 |
| Hort 226 | F16 | 9 | 5.5 | 5.1 | 5.3 | 5.7 | 5.3 | 5.4 |
| Hort 228 | S16 | 7 | 5.5 | 5.3 | 5.2 | 5.5 | 5.3 | 5.3 |
| Hort 301 | F15 | 35 | 5.1 | 5.4 | 5.2 | 5.5 | 5.5 | 5.4 |
| Hort 226 | F15 | 10 | 5.9 | 5.4 | 5.2 | 5.9 | 5.5 | 5.4 |
| Hort 505 | S15 | 6 | 5.8 | 5.5 | 5.1 | 5.8 | 5.6 | 5.3 |
| Hort 228 | S15 | 7 | 5.3 | 5.5 | 5.1 | 5.6 | 5.6 | 5.3 |
| Hort 301 | F14 | 42 | 5.2 | 5.4 | 5.2 | 5.5 | 5.5 | 5.4 |
| Hort 226 | F14 | 9 | 5.4 | 5.4 | 5.2 | 5.9 | 5.5 | 5.4 |
| Hort 228 | S14 | 6 | 5.7 | 5.5 | 5.1 | 6 | 5.6 | 5.2 |
| Hort 301 | F13 | 42 | 5.2 | 5.3 | 5.4 | 5.7 | 5.5 | 5.5 |
| Hort 226 | F13 | 19 | 5.6 | 5.3 | 5.4 | 5.6 | 5.5 | 5.5 |
| Hort 228 | S13 | 20 | 5.6 | 5.2 | 5.2 | 5.8 | 5.5 | 5.4 |
| Hort 412 | W13 | 12 | 5.6 | 5.3 | 5.3 | 5.8 | 5.5 | 5.5 |
| Hort 301 | F12 | 50 | 5 | 5.1 | 5.3 | 5.3 | 5.2 | 5.5 |
| Hort 226 | F12 | 13 | 5.4 | 5.1 | 5.3 | 5.9 | 5.2 | 5.5 |
| Hort 228 | S12 | 11 | 5 | 5.3 | 5 | 5.1 | 5.4 | 5.1 |
| Hort 301 | F11 | 52 | 4.5 | 5.3 | 5 | 4.8 | 5.5 | 5.2 |
| Hort 226 | F11 | 7 | 5.3 | 5.3 | 5 | 5.6 | 5.5 | 5.2 |
| Course | Term |  | Course SET\* | | | Instructor SET\* | | |
|  |  | Respondents | Contreras | Hort | OSU | Contreras | Hort | OSU |
| Hort 228 | S11 | 18 | 5.2 | 5.3 | 4.8 | 5.1 | 5.5 | 5.1 |
| Hort 301 | F10 | 57 | 3.9 | 4.8 | 5 | 4.1 | 5.3 | 5.3 |
| Hort 226 | F10 | 20 | 4.8 | 4.8 | 5 | 5.3 | 5.3 | 5.3 |
| Hort 228 | S10 | 20 | 3.8 | 4.9 | 4.9 | 4.4 | 5.2 | 5.1 |

\*Ratings are medians on a scale of 1-6: 1 = very poor; 6 = excellent

#Indicates that statistics were not available.

***Online*** median scores

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course | Term |  | Course SET\* | | | Instructor SET\* | | |
|  |  | Respondents | Contreras | Hort | OSU | Contreras | Hort | OSU |
| Hort 310e | W23 |  |  |  |  |  |  |  |
| Hort 301e | F22 |  |  |  |  |  |  |  |
| Hort 226e | F22 |  |  |  |  |  |  |  |
| Hort 301e | S22 |  |  |  |  |  |  |  |
| Hort 228e | S22 |  |  |  |  |  |  |  |
| Hort 311e | W22 |  |  |  |  |  |  |  |
| Hort 301e | F21 |  |  |  |  |  |  |  |
| Hort 226e | F21 |  |  |  |  |  |  |  |
| Hort 301e | S21 |  |  |  |  |  |  |  |
| Hort 228e | S21 |  |  |  |  |  |  |  |
| Hort 310e | W21 |  |  |  |  |  |  |  |
| Hort 301e | F20 |  |  |  |  |  |  |  |
| Hort 226e | F20 |  |  |  |  |  |  |  |
| Hort 301e | S20 |  |  |  |  |  |  |  |
| Hort 228e | S20 |  |  |  |  |  |  |  |
| Hort 310e | W20 | 5 | 5.5 | 5.4 | 5.1 | 5.5 | 5.6 | 5.4 |
| Hort 301e | F19 | 6 | 5.5 | 5.5 | 5.4 | 5.7 | 5.6 | 5.5 |
| Hort 226e | F19 | 10 | 5.5 | 5.5 | 5.4 | 5.7 | 5.6 | 5.5 |
| Hort 301e | S19 | 6 | 5.9 | 5.5 | 5.3 | 5.8 | 5.7 | 5.5 |
| Hort 228e | S19 | 7 | 5.8 | 5.5 | 5.3 | 5.8 | 5.7 | 5.5 |
| Hort 311e | W19 | 9 | 5.2 | 5.4 | 5.3 | 5 | 5.6 | 5.5 |
| Hort 301e | F18 | 22 | 5.6 | 5.5 | 5.4 | 5.5 | 5.4 | 5.5 |
| Hort 226e | F18 | 10 | 5.5 | 5.5 | 5.4 | 5.1 | 5.4 | 5.5 |
| Hort 301e | S18 | 8 | 5.7 | 5.3 | 5.3 | 5.5 | 5.3 | 5.5 |
| Hort 228e | S18 | 14 | 4.5 | 5.3 | 5.3 | 3.8 | 5.3 | 5.5 |
| Hort 311e | W18 | 15 | 5.5 | 5.3 | 5.3 | 4.5 | 5.3 | 5.5 |
| Hort 226e | F17 | 20 | 4.7 | 5.4 | 5.3 | 4.8 | 5.4 | 5.5 |
| Hort 301e | F17 | 10 | 5.5 | 5.4 | 5.3 | 5.5 | 5.4 | 5.5 |
| Hort 301e | S17 | 16 | 5.6 | 5.3 | 5.3 | 5.4 | 5.3 | 5.4 |
| Hort 228e | S17 | 4 | 5.0 | 5.3 | 5.3 | 5.0 | 5.3 | 5.4 |
| Hort 311e | W17 | 17 | 5.1 | 5.2 | 5.2 | 4.5 | 5.4 | 5.4 |
| Hort 311e | F16 | 15 | 5.4 | 5.4 | 5.2 | 5.3 | 5.4 | 5.3 |
| Hort 301e | F16 | 24 | 5.6 | 5.4 | 5.2 | 5.6 | 5.4 | 5.3 |
| Hort 226e | F16 | 18 | 5.5 | 5.4 | 5.2 | 5.8 | 5.4 | 5.3 |
| Hort 301e | S16 | 24 | 5.3 | 5.3 | 5.2 | 4.9 | 5.3 | 5.3 |
| Hort 228e | S16 | 15 | 4.4 | 5.3 | 5.2 | 3.6 | 5.3 | 5.3 |
| Hort 301e | F15 | 19 | 5.3 | 5.5 | 5.3 | 5.5 | 5.6 | 5.5 |
| Hort 226e | F15 | 17 | 4.8 | 5.5 | 5.3 | 4.8 | 5.6 | 5.5 |
| Hort 301e | S15 | 11 | 4.2 | 5.2 | 5.2 | 4.5 | 5.3 | 5.3 |
| Hort 228e | S15 | 15 | 4.6 | 5.2 | 5.2 | 4.4 | 5.3 | 5.3 |
| Hort 301e | F14 | 20 | 5.0 | 5.4 | 5.2 | 5.0 | 5.5 | 5.4 |
| Hort 226e | F14 | 14 | 4.9 | 5.4 | 5.2 | 4.5 | 5.5 | 5.4 |
| Hort 228e | S14 | 11 | 4.9 | 5.4 | 5.2 | 5.1 | 5.4 | 5.2 |
| Hort 301e | S14 | 18 | 4.4 | 5.4 | 5.2 | 4.6 | 5.4 | 5.2 |
| Hort 301e | F13 | 22 | 4.3 | 5.4 | 5.3 | 4.3 | 5.4 | 5.3 |
| Hort 226e | F13 | 11 | 4.9 | 5.4 | 5.3 | 4.8 | 5.4 | 5.3 |
| Course | Term |  | Course SET\* | | | Instructor SET\* | | |
|  |  | Respondents | Contreras | Hort | OSU | Contreras | Hort | OSU |
| Hort 301e | S13 | 17 | 4.9 | 5.5 | 5.3 | 4.8 | 5.5 | 5.2 |
| Hort 228e | S13 | 8 | 5.7 | 5.5 | 5.3 | 5.7 | 5.5 | 5.2 |
| Hort 301e | F12 | 17 | 4.6 | 5.3 | 5.2 | 4.4 | 5.4 | 5.3 |
| Hort 226e | F12 | 13 | 5 | 5.3 | 5.2 | 5.4 | 5.4 | 5.3 |
| Hort 301e | S12 | 12 | 4.9 | 5.4 | 5.1 | 5 | 5.6 | 5.2 |
| Hort 228e | S12 | 17 | 4.6 | 5.4 | 5.1 | 4.3 | 5.6 | 5.2 |
| Hort 226e | F11 | 4 | 4.8 | 5.3 | 4.6 | 4.1 | 5.4 | 4.4 |
| Hort 301e | F11 | 15 | 4 | 5.3 | 4.6 | 3.8 | 5.4 | 4.4 |
| Hort 228e | S11 | 7 | 5.5 | # | # | 5.5 | # | # |
| Hort 226e | F10 | 2 | 4 | # | # | 3 | # | # |

**3. Peer Teaching Evaluations**

* During winter 2019 and fall 2019 a full peer review of teaching was conducted as per the College of Agricultural Sciences guidelines. This included a comprehensive review of the teaching dossier that included teaching materials from HORT 226, 228, 301, 310, and 311. The teaching dossier was reviewed by two peer review of teaching committees. The first was assembled during Winter 2019 at which time the committee reviewed the teaching dossier and made classroom observations for HORT 311: Plant Propagation. That committee consisted of Patty Skinkis (Chair), Gail Langellotto, and Jennifer Parke. Reviews were very positive. The second committee reviewed the teaching dossier and made classroom observations of HORT 301: Growth and Development of Horticultural Crops during Fall 2019. That committee consisted of Alec Kowalewski (Chair), Laurent Deluc, and Andrew Ross. Reviews were all very positive.

*PRIOR TO PROMOTION*

* Hort 228 was fully peer reviewed during Spring 2015 by John Lambrinos (Chair), Alexander Kowalewski, and Jennifer Parke. Reviews were very positive.
* Hort 301 was fully peer reviewed during Fall 2012 by Richard Regan (Chair), Bernadine Strik, and Andrew Hulting. Reviews were very positive.
* In class evaluations were conducted for Hort 226 during Fall 2011 by Rob Golembiewski (HORT) and James Cassidy (CSS).

**4. Advising**

* I served as a faculty mentor as part of the Faculty Student Mentor Program that was launched in 2018 as part of the Student Success Initiative. I had four students that are in their first year at OSU with whom I met regularly. At least one student indicated they would not have become involved in research were it not for my mentorship – this is a strong point of pride and makes the time devoted more than worth the investment.
* In 2012 I established the Alpha Rho Chapter of Pi Alpha Xi (The Honor Society of Horticulture) for undergraduate and graduate students. Since then I have served as the Faculty Advisor for our chapter. Pi Alpha Xi recognizes scholarly achievement of undergraduate students by inviting those that have at least a 3.0 GPA and Junior class standing to join. Graduate Students are also eligible and have been very active in the Alpha Rho Chapter. Our organization has conducted many scholarly and service activities including having invited speakers each term, supporting the Community Services Consortium (CSC) Youth Garden, and adopting a section of Oak Creek that we maintain and help beautify. The following are the number of undergraduate and graduate students initiated each year: 2012 (21), 2013 (14), 2014 (14), 2015 (8), 2019 (15), 2020 (XX), and 2022 (XX).
* I mentor undergraduate students regarding internships, employment, and courses. My role is primarily to help students identify nursery industry opportunities for internships or full-time positions and I have used my contacts to successfully place several students. Since the inception of the undergraduate Plant Breeding and Genetics option, I have served in a liaison capacity to help undergraduates link with research faculty. I review and score internship reports for students in areas related to plant breeding and/or the nursery industry. Related to this, I regularly meet with nursery industry representatives to discuss how we can better connect our students with the industry via internships or permanent employment opportunities. Anecdotally, I have observed that mine and others’ efforts are encouraging more students to consider the nursery industry as a viable employment option.

**5. Other Assignments**

**a. Research.**  My research program has been developed using input from a group of industry representatives in order to best meet the needs of the industry. More recently, a formalized Ornamental Plant Crop Advisory Committee was assembled to provide direct input on potential and proposed plants for release and intellectual property protection. The Committee includes four members of industry including retail, propagation, breeding, and shade trees. Along with valuable input from the group I use my own knowledge of plant material and available cultivars to determine specific research needs and where my program’s efforts are best used. Broadly, the program focuses on cultivar development of nursery crops. Fundamental research is conducted to support the applied plant breeding program. Primary activities of this program are to: 1) develop sterile forms of economically important crops with invasive tendencies; 2) improve the insect and disease tolerance of nursery crops; and 3) improve the landscape utility and aesthetics of the crops of interest. My program is extramurally funded with intra- and inter-departmental collaborators at OSU as well as national collaborators at other universities and the USDA. My research aligns well with the mission, values, and areas of excellence of the College of Agricultural Sciences as well as the three Signature Areas of the University. In addition to the projects outlined below, we have myriad projects ongoing within these various thematic areas – the nursery industry is the leading agricultural sector in Oregon and is also the most diverse. The 33 genera that I am breeding is an attempt to address a bit of this expansive variation.

**THEME 1. Healthy Environments and Healthy Economies: Controlling the Spread of Nursery Crops into Native Ecosystems**

A number of the same traits that make nursery crops successful also allow some of these species to become naturalized or even invasive. Some states have begun banning some species in an attempt to limit the negative ecological impact that they pose. However, breeding for sterility provides a benefit to growers by allowing them to continue growing and marketing profitable plants, while also benefiting the environment by reducing the potential of these species to displace native flora.

**PROJECT 1. Inducing sterility in *Prunus laurocerasus* and *P. lusitanica***

***Situation.***Common cherrylaurel (*P. laurocerasus*) and Portugese cherrylaurel (*P. lusitanica*) are rugged plants and fill a number of roles in modern landscapes. Unfortunately, they have both become naturalized in Western Oregon and Washington to the point that they are receiving attention as potentially invasive. However, in 2011, common cherrylaurel production in Oregon was estimated to be worth more than $16 million.

***Program Effort.*** We are using two techniques to develop sterile forms of these species; interspecific hybridization and ploidy manipulation. Numerous polyploids have been developed using in vitro treatments. We are still waiting for the induced polyploids to flower and they will be evaluated for fertility at that time. We have made nearly 10,000 interspecific crosses between these species, but we have recovered no hybrids to date, though we have recovered many fruits. Thus, we developed polyploid forms of portugese cherrylaurel, which are closer in chromosome complement to common cherrylaurel, to facilitate crossing.

***Outputs and Impacts.*** Numerous polyploids of common and portuguese cherrylaurel are being evaluated. Growers widely identify this project as a high priority, as we hope that if we can recover a hybrid that in addition to sterility, it may also exhibit shothole disease resistant forms.

***Related Scholarship.*** One poster was presented at the 2013 National ASHS meeting. One undergraduate student conducted her undergraduate research project on related research. A prior M.S. student (Justin Schulze) conducted his master’s thesis on this project and we have published two peer-refereed papers in HortScience and one in HortTechnology. $52,937 was received specifically to conduct this research from the Agricultural Research Foundation and Oregon Department of Agriculture (ODA) and additional funds have been received as part of ODA grants on which multiple projects are combined.

**PROJECT 2. Developing sterile maples**

***Situation.*** Maples such as Norway maple, amur maple, and sycamore maple are adaptable to multiple environments, tolerant of urban conditions, are drought tolerant, and are available in varying forms that fill many landscape needs. With the loss of ash as a viable crop to be marketed in the Midwest and eastern USA due to emerald ash borer, it is more important than ever to have alternative shade trees to fill the void. Unfortunately, some maple species such as these have become invasive and have been banned in several states.

***Program Effort.*** We initially developed over 100 tetraploid norway maple seedlings, 9 tetraploid trident maples, 5 tetraploid amur maples, and 25 hedge maples. In 2016, we recovered more than 4,600 seed of putative triploids of Norway, Amur, and trident maples. Norway and amur maple seedlings were 87% and 84% triploid, respectively. No trident maple seedlings germinated. Triploids of Amur maple have begun flowering and in 2019, 22 trees flowered and produced no viable seed. We are now working on clonal propagation to deploy specific selections as cultivars to support the industry.

***Outputs and Impacts.*** Results and progress have been presented to growers. Stability of our tetraploids provides confidence in stability and seed-generated triploids have thus far been sterile. Growers regularly indicate they will adopt sterile triploids when they are released. This project is one that has helped establish the program as highly engaged with the industry and demonstrates our commitment to improving the economic and ecological success of Oregon growers. An impact from this work that is difficult to quantify is the relative standing of our breeding program. This project has garnered attention from colleagues who work in similar areas and helped establish my program as a leader in using ploidy manipulation for sterility.

***Related Scholarship.***An oral presentation was made at the Annual Conference of the Amer. Soc. Hort. Sci. in 2017 and a HortScience article will be prepared to describe developing triploid maples. I have received more than $110,000 in competitive grants to conduct this research in addition to a 2020 award from the Advantage Accelerator to expedite commercial deployment of our triploids using micropropagation. Additional funding from ODA was received as part of grants that include several taxa in this theme area.

**PROJECT 3. Assessing genome size and ploidy levels in maples**

***Situation.***Polyploid forms of several species of maple have been identified and we believe there likely are many more natural polyploids that could be used in a breeding program (**Theme 1, Project 2**). If we are able to avoid having to generate our own polyploids in the breeding program, then we could shorten the time required for this program by many years. Furthermore, this approach is promising for developing novel phenotypes and/or combining interesting traits from various taxa.

***Program effort.*** We screened more than 190 accessions of over 40 species and identified mostly diploids but also putative triploids, tetraploids, and hexaploids; some of which are being characterized for the first time. Furthermore, we are using modified protocols of sample and standard handling that we believe may become a new standard for future studies. Related research includes establishing a phenological calendar for many species of maple that have not previously been formally evaluated in Western Oregon.

***Outputs and Impacts.*** We have significantly added to the scientific knowledge of maples. From an applied standpoint, newly identified cytotypes can be exploited in this breeding program to breed for sterility and new interspecific hybrids. We continue to evaluate the accessions identified as triploids. We also have included confirmed diploids and our synthesized tetraploids from the breeding program. Many trees have begun to flower. Seed collection in 2020 likely will be our first to be evaluated for hybridity.

***Related Scholarship.***One undergraduate thesis project and part of one M.S. thesis. One publication was published in J. Amer. Soc. Hort. Sci. in 2018.

**PROJECT 4. Developing sterile cotoneaster hybrids as cultivars**

***Situation.*** Cotoneasters are hardy species that are drought tolerant and provide year-round interest in the garden. Unfortunately, they are often weedy to the point of becoming naturalized or even invasive in Western Oregon and Northern California. Sterile forms would provide an ecologically friendly version of a hardy and low input landscape plant.

***Program Effort.*** Parental species have been identified based on 1) ornamental characteristics such as leaf and floral morphology, 2) ploidy level and, 3) fire blight resistance (**Theme 2, Project 1**). Pollination was conducted on the first diploid species to flower in 2011 (*Cotoneaster* ×*suecicus* ‘Coral Beauty’). We have recovered numerous triploid hybrids, including using a highly resistant species as a parent. We have confirmed hybridity using flow cytometry and complete fire blight resistance in two superior genotypes. Fertility of confirmed hybrids is nil – we have had fruit set, but no seedlings recovered from F1 plants.

***Outputs and Impacts.*** Hybrids have been confirmed as triploids that have shown complete fire blight resistance in our glasshouse trials. Two cultivars released as ‘Emerald Sprite’ and ‘Emerald Beauty’ are being managed by the intellectual property company, Plant Haven and have been licensed to nearly 10 companies within their first year of release with an additional 20+ nurseries evaluating them for production.

***Related Scholarship.*** M.S. thesis research of Joseph Rothleutner and Kristin Neill. Two posters were presented at the ASHS National Meeting in September 2011 and August 2012. One manuscript was presented at the Southern Nursery Association Research Conference in August 2015. Two peer refereed publications have been published and a more detailed publication describing the heritability of fire blight resistance as well as releases of cultivars will be published in HortScience. ‘Emerald Sprite’ was released 2018, ‘Emerald Beauty’ was released in 2019 and plant patents were applied for both – ‘Emerald Sprite’ has been granted.

**THEME 2. Improvement of Insect and Disease Resistance of Nursery Crops**

Nursery crops experience myriad stresses during production and in the landscape, including biotic factors such as insects and diseases, as well as abiotic stresses such as cold, drought, and pollution that increase susceptibility. Variation within and among species has been observed for ability to withstand all of these pressures and it is this variation that allows us to breed for improved pest and disease resistance.

**PROJECT 1. Breeding for fire blight resistance in cotoneasters**

***Situation.*** Fire blight is a serious problem on cotoneasters grown in the Eastern and Southeastern US and Oregon ships approximately 80% of its nursery stock out of state. Therefore, even though fire blight pressure is relatively low in the Willamette Valley where many nurseries are located, it is important that our crops have resistance to the increased disease pressure they will face where end users are located.

***Program Effort.***  We screened 52 species of *Cotoneaster* and have identified numerous sources of resistance. We made several hundred crosses in 2011, 2013, 2014, and 2017 using resistant tetraploid species as pollen parents with a susceptible diploid species that is the industry standard. Many triploid progeny have been recovered and were evaluated for fire blight resistance in 2014. Continued evaluation has illustrated the variable nature of fire blight resistance in cotoneasters, but we have established trends demonstrating which cultivars, selections, and species show reliable resistance.

***Outputs and Impacts.*** We have identified a number of sources of resistance. Our study represents the most comprehensive fire blight screen of the genus *Cotoneaster* that has been conducted to date. Data are being used to design additional crosses to develop new cultivars with disease resistance and superior landscape characters. ‘Emerald Sprite’ is disease resistant and was released in 2018 and ‘Emerald Beauty’ was released in 2019.

***Related Scholarship.*** Three peer-refereed manuscripts; one on disease screening, one on heritability of resistance, and another cultivar release. It is likely more cultivar releases will follow. Findings were presented at the 57th Annual Southern Nursery Association Research Conference in Mobile, AL, January, 2012, as a poster at the 2012 ASHS National Conference, and I was an invited speaker at the 13th ISHS Fire Blight Workshop in Zurich, Switzerland, where I spoke about this breeding program. Publication on preliminary disease screening was published in HortScience 2014. Another publication is forthcoming that documents resistance to different strains of fire blight and compares resistance of our cultivars with industry standards under varied conditions.

**THEME 3. Improving Landscape Performance and Aesthetics of Nursery Crops**

The major focus of my breeding program is to address issues of sterility and biotic and biotic stress in ornamentals; however, there is also a need in the nursery industry for new and exciting forms of economically important crops. New cultivars generate excitement in consumers and boost sales.

**PROJECT 1. Developing improved forms *Thuja occidentalis*, *T. plicata*, and *Platycladus orientalis* (Cupressaceae)**

***Situation.*** American arborvitae (*Thuja occidentalis*), western red cedar (*T. plicata*), and oriental arborvitae (*Platycladus orientalis*) are commonly grown conifers that all share the same tendency to discolor during winter. This winter browning occurs due to photoinhibition and has been shown to be reduced in polyploid forms Japanese-cedar, which is a related species. We hypothesized that a similar reduction in winter browning would occur in polyploids of these species; however, we have not observed any effect on winter foliage color. However, there are altered growth forms that nurseries are interested in. American arborvitae, in particular, are produced and sold by the millions in Oregon. If an improved cultivar is developed it could be sold for a premium and give Oregon growers a competitive edge.

***Program Effort.*** In 2010, we developed 32, 64, and 212 polyploids of *Platycladus orientalis*, *Thuja plicata*, and *Thuja occidentalis*, respectively. These polyploids are being grown alongside controls and will be propagated and evaluated for winter browning and overall field performance. Several selections show promise.

***Outputs and Impacts.*** Polyploids developed in my program are unique among cultivars available in the trade. Progress is also being shared at grower meetings and field days.

***Related Scholarship.***  One peer-refereed manuscript was published in HortScience. Strong potential for selections to be patented.

**PROJECT 2. Mutation Breeding of shrubs and herbaceous perennials.**

***Situation.*** New cultivars are the lifeblood of the nursery industry and historically many of these have arisen as branch sports, which are chance mutations. Mutation breeding offers a more rapid way to induce mutations such as different flower color, growth form, or leaf variegation that may increase the marketability some plants.

***Program Effort.*** We selected two shrubs that are common in landscapes of the Pacific Northwest as well as one herbaceous perennial that is relatively rare in production. Each would benefit from mutations to improve their ornamental characteristics and treated seeds of each with ethyl methanesulfonate (EMS), a chemical mutagen, to develop the first mutation generation (M1). *Sarcococca confusa*, commonly known as sweetbox,was treated to induce varying growth forms, leaf variegation, and alternate fruit colors. *Ribes sanguineum*, or flowering currant, was treated to induce more compact forms, as was *Galtonia candicans*. The latter, cape hyacinth, is drought tolerant and highly ornamental but lodges and is too tall for modern landscapes. Hundreds of first mutation generation plants of each are being grown and variants have been selected from these populations. Seed were collected from sweetbox in 2013 and flowering currant and cape hyacinth in 2015, and the second mutation generation (M2) will be observed and variants selected.

***Outputs and Impacts.*** We have identified a variegated form of sweetbox and a number of dwarf forms. We propagated 6 selections in 2013; strong interest was expressed from industry representatives. We also have identified free-branching, cut-leaf that was released in March 2014 as ‘Oregon Snowflake’. We are working on cultivars with similar habit and leaf morphology that have pink and red flowers, respectively, to compliment the white flowers of ‘Oregon Snowflake’. Several selections of cape hyacinth were selected and propagated in 2014. Observations are ongoing.

***Related Scholarship.*** Three peer-refereed manuscripts will be prepared on the effect of EMS on plant growth and morphology, one for each species included. The release for ‘Oregon Snowflake’ flowering currant was published in HortScience January 2014 and US Plant Patent 26763 was granted, the sweetbox manuscript was published in HortScience in 2019, and the *Ribes* publication is in development. I expect several additional releases from these programs. The work on cape hyacinth was part of Kim Lattier’s thesis.

**PROJECT 3. Breeding for reblooming, disease resistant lilacs.**

***Situation.*** Since the release of ‘Endless Summer’ hydrangea, the industry has made a strong push toward marketing of remontant (reblooming) forms of various taxa. ‘Bloomerang’ lilac was a major step forward among the dwarf lilacs. Previous selections such as ‘Josee’ were unimpressive in their ability to rebloom after initial flush of flowers in spring. While ‘Bloomerang’ is an improvement, greater gains can be made in reblooming, resistance to *Pseudomonas syringae*, diversity of flower colors, and adaptability to the heat of the southeast.

***Program Effort.*** Controlled crosses were initiated in 2011 to combine the reblooming trait of ‘Bloomerang’ with diverse flower colors and adaptability of cultivars such as ‘Palibin’ and ‘Miss Kim’. ‘Miss Kim’ in particular, offers the opportunity to develop a form adaptable to a wide area of the country, including the south where few lilacs thrive. Crosses were continued in 2012, and a large number of hybrids were recovered that are being grown. In 2013, Ph.D. student Jason Lattier began working on this project and it has expanded to attempt intersectional crosses to take advantage of the diversity of traits. We made over 20,000 crosses in 2013-2014. We have intersectional crosses (*Villosae* x *Pubescentes*) as well as extremely precocious seedlings that flowered in less than one year from seed; these seedlings likely will be reblooming, which is an extremely sought-after trait. We expanded our work to include using molecular techniques such as genotyping by sequencing (GBS) to develop a linkage map and hope to identify a marker associated with reblooming and blight resistance.

***Outputs and Impacts.*** We determined that remontant flowering in *Syringa* Series *Pubescentes* is likely controlled by two genes – at least we have identified two SNPs associated with the trait. This will allow more targeted breeding for this trait. We have seed from intersectional crosses that have the potential to revolutionize breeding in the genus. Information and background has been shared with growers and response has been extremely positive on the direction of this program.

***Related Scholarship.***  I expect to have at least two to three releases from our current populations. Six were propagated in 2018 and growers are keenly interested. Depending on observations on inheritance of remontant flowering and ability to recover progeny from wide crosses, at least three peer-refereed publications will be generated. Ph.D. students, Jason Lattier and Hsuan Chen both conducted portions of their dissertation research on this project. The linkage map is in preparation from Dr. Lattier’s work and the marker-trait association manuscript from Dr. Chen was published in 2019.

**PROJECT 4. Combining red foliage and weeping habit in katsuratree.**

***Situation.*** Katsuratrees (*Cercidiphyllum japonicum*) are common landscape trees produced in large numbers in Oregon. There are several cultivars including an upright form with red foliage, ‘Red Fox’, and two weeping cultivars, ‘Morioka Weeping’ and ‘Amazing Grace’ that both have green foliage. However, there are no cultivars that combine red foliage and weeping habit. Our goal is to develop a red foliage cultivar with weeping habit.

***Program Effort.*** We developed nearly 300 F1 crosses between ‘Red Fox’ x ‘Morioka Weeping’ and ‘Red Fox’ x ‘Amazing Grace’. These trees began flowering during spring 2020 and we have been intermating to produce an F2 population from which we expect to recover 9/16 green upright, 3/16 red upright, 3/16 green weeping, and 1/16 red weeping. We were fortunate that trees in 2020 included both males and females, as the species is dioecious.

***Outputs and Impacts.*** We have identified that both red foliage and weeping habit are recessive traits.

***Related Scholarship.*** I expect to publish one peer-refereed publication on heritability of our traits of interest. I expect two cultivar releases, an upright red foliage form and a red foliage weeping cultivar, along with associated scholarship of release and patents.

**PROJECT 5. Novel combinations of traits in mockorange.**

***Situation.*** There are more than 60 species of *Philadelphus*, many of which are extremely drought and/or cold tolerant and have few pest problems, which makes them desirable as low input shrubs. The majority of species are very fragrant, although a number of cultivars that are popular exhibit little to no floral fragrance. I believe there is an opportunity to develop improved cultivars beyond what are available in the market with regard to inflorescence architecture, growth habit, fragrance, and leaf quality.

***Program Effort.*** I began this project focusing on *P. madrensis* due to its unique floral fragrance and fine leaf texture. Since 2012, we have produced many thousands of hybrids using this and approximately 10 other parents. The range of phenotypes is extremely broad and includes combinations I have not observed in commercial varieties. We have identified 6 selections that we are propagating and testing for commercial production.

***Outputs and Impacts.*** I have determined that the characteristic “grape soda” fragrance of *P. madrensis*, as well as inflorescence architecture (multiple flowers vs. solitary) are both heritable and we have recovered progeny that exhibit both. With growers’ assistance, we have identified 6 selections from our first crosses that are promising and will be included in on-farm trials with nurseries.

***Related Scholarship.*** I expect that over the next 10 years that this project will lead to steady cultivar releases. In addition to published cultivar releases, I expect one peer-refereed publication on heritability of ornamental traits.

**b. Outreach**

As an applied plant breeder involved in cultivar development, it is imperative that I have a strong sense of growers’ needs. I am in constant contact with the industry through farm visits, field days, trade shows, trade journals, and through email updates. Many of these activities are not captured in the list below but are key to the success of my growing program.

1. Established the Ornamental Plant Breeding Crop Advisory Committee (OPCAC) in 2017 to advise the breeding program and review proposed plant releases. The OPCAC has four university scientists and four members of the nursery industry.
2. Host an annual field day to share results with growers, colleagues, Master Gardeners, and the general public – 2011-current
3. Coordinated breeding session at 2014 Farwest show hosted by the Oregon Association of Nurseries.
4. Moderated session at the 2013 International Plant Propagators Society – Western Region meeting.
5. Moderated breeding session at the 2013 Farwest show hosted by the Oregon Association of Nurseries.
6. Coordinated breeding session at 2012 Farwest show hosted by the Oregon Association of Nurseries.
7. Organized 2012 OSU column, "Growing Knowledge" that is published in the monthly magazine, *Digger*, by the Oregon Association of Nurseries.
8. Coordinated and staffed OSU booth at 2011 Farwest show hosted by the Oregon Association of Nurseries.

**c. Collaborative Research**

My program conducts collaborative research with members of the Oregon State University faculty within and beyond the Department of Horticulture, as well as with USDA scientists and other university researchers from across the country. Below is a summary of collaborators, their affiliation and the projects in which they are involved.

i. OSU

* Kelly Vining, Department of Horticulture: Characterizing mint germplasm for ploidy, genetic diversity, and oil composition.
* Kelly Vining, Department of Horticulture: Developing a linkage map and PCR-based markers for lilac breeding.
* Lloyd Nackley, Department of Horticulture: Evaluating production capabilities new cultivars of various taxa form Oregon State University.
* Lloyd Nackley, Department of Horticulture: Production scheduling of tree-form hardy hibiscus.
* Marcello Moretti, Department of Horticulture: Evaluating cultivar selections for herbicide sensitivity in nursery production.
* John Lambrinos, Department of Horticulture: Population dynamics of butterfly bush cultivars.
* Gail Langellotto, Department of Horticulture: Attractiveness and resource quality of sterile butterfly bush to pollinators
* Virginia Stockwell, USDA-ARS: Screening *Cotoneaster* spp. for resistance to fire blight using varied methods.

ii. University Collaborators - National

* Loren Oki, UC-Davis: Landscape evaluation of *Cotoneaster* selections: assessing the impact of deficit irrigation on quality and resistance to locally isolated fire blight races.
* Jason Griffin, Kansas State University: Evaluating production capabilities of 3 new cultivars of cotoneaster form Oregon State University.
* Brian Schwartz, University of Georgia: Developing polyploidy forms of centipedegrass, seashore paspalum, and zoyiagrass
* Wayne Hanna, University of Georgia: Evaluation of *Pennisetum* hybrids for the Pacific Northwest

iii. USDA-ARS

* Jim Owen and James Altland, Engineering superior soilless substrates.

iv. Botanical Gardens and Arboreta

* Martin Nicholson, Curator Hoyt Arboretum: Landscape evaluation of *Cotoneaster* at the Hoyt Arboretum
* Ron Determann, Atlanta Botanical Garden: Screening ornamental cultivars of japanese-cedar for polyploidy

v. Oregon Department of Agriculture, Development of ODA *Buddleia* Regulation.

Collaborated with Oregon Department of Agriculture to amend ODA 603-052-1200. The Noxious Weeds Quarantine included all *Buddleia davidii* and *B. varabilis* cultivars and forms; however, cultivars have been developed that do not represent an environmental threat to Oregon due to reduced fertility. Served as an advisor in developing language that outlines requirements of plants that wish to be introduced and data necessary to support claims of reduced fertility/sterility.

vi. Oregon Department of Agriculture, Evaluation of *Buddleia* cultivars for invasiveness

My role has been to evaluate the scientific merit of applications submitted to ODA under the amendment to ODA 603-052-1200 and provide reports with my suggestion to accept or reject the cultivar under consideration. This collaboration was undertaken because Oregon growers have expressed a great desire to continue growing *Buddleia* selections due to their economic value and demand from consumers. To date, my work with ODA has resulted in 14 cultivars being deregulated and available for Oregon growers to produce and market. The impact of this work is substantial; there are two nurseries that have been introducing cultivars under this exemption, Ball Horticulture and Spring Meadows Nursery (under the Proven Winners brand). I am not certain what the value of the Ball Horticulture cultivars is in Oregon; however, the seven Proven Winners cultivars were estimated to be approximately $150,000 in 2012 and $250,000 in 2013. These were early estimates and I expect the current value to be substantially higher.

vii. Industry

The nursery industry has been extremely supportive of my program through providing on-farm trials of plants we are developing or have developed. Below are just some of the nurseries that have trialed plants for my program in addition to the other activities listed with several nurseries. My collaboration with the plant broker company, Plant Haven, has led to more than 20 nurseries testing our plants for production, many of whom are in the process of securing licenses.

* Briggs Nursery
* Eshraghi Nursery
* JRT Nursery
* Van Belle Nursery
* Bailey Nurseries Inc.
* Blue Heron Farms
* Monrovia Nursery
* Heritage Seedlings
* Carlton Plants
* Blooming Nursery
* J. Frank Schmidt and Sons
* PDSI/Flowerwood
* PLANTIPP/Concept Plants
* Alpha Nursery
* Silver Falls
* Peoria Gardens
* Van Essen Nursery
* Plant Haven
* Kraemer Nursery

**C. SCHOLARSHIP AND CREATIVE ACTIVITY**

Publication Summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Time frame | Refereed | Proceedings | Abstracts | Book chapters | Other |
| Since last promotion | 9 | 2 | 6 | 0 | 2 |
| Prior to last promotion | 38 | 16 | 14 | 1 | 15 |
| Total at OSU | 47 | 18 | 20 | 1 | 17 |
| Total including prior to OSU | 51 | 22 | 23 | 1 | 20 |

**1. Publications** (*reviewed by peers prior to publication with the option of rejection*)

I publish in journals that allow the greatest readership by my peers including HortScience, Journal of the American Society for Horticultural Science, and HortTechnology. These journals are published by the American Society for Horticultural Science and are the appropriate site for the research described in my position description. The value of my work by peers is best exhibited by my national recognition in leadership positions listed under Service (e.g. Chair of the Ornamental Plant Breeding Interest Group of ASHS, Chair of the Nursery Interest Group of ASHS, Chair of the Woody Landscape Plant Crop Germplasm Committee, Research Division Vice President of American Society for Horticultural Science) as well as presenting invited international presentations (e.g. XIII Fire Blight Congress in Zurich, Switzerland, 2013; III International Sypmosium on Woody Ornamentals of the Temperate Zone, 2016; Korean Society for Horticultural Science, 2019). I publish more fundamental findings in alternative journals that are more appropriate such as Genome and Genes. In addition to published and accepted manuscripts, I have several more in preparation. **Student authors denoted with \*.**

**a. Peer-reviewed**

**i. Refereed publications**

\*Still, C., J. Lambrinos, and **R.N. Contreras.** 202X. Ploidy, relative fecundity, and predicted invasive potential of 34 *Buddleja* cultivars. HortScience (*in preparation*).

\*McLeod, A., **R.N. Contreras**, M. Halstead, K. Vining. 202X. In- vivo and in vitro chromosome doubling of ‘I3’ hemp. HortScience (*in preparation*).

Miller, C.T., M. Drewery, T.M. Waliczek, **R.N. Contreras**, and C. Kubota. 202X. Engaging undergraduates in research. HortTechnology. (*in press*).

*Role. Developed workshop concept from which the article was developed, assembled speakers (authors), and edited publication.*

\*Chen, H. and **R.N. Contreras**. 2022.  Near-hexaploid and near-tetraploid aneuploid progenies derived from backcrossing tetraploid parents *Hibiscus syriacus* × (*H. syriacus* × *H. paramutabilis*)*.* Genes. 13(6):1022. doi:[10.3390/genes13061022](https://doi.org/10.3390%2Fgenes13061022)

*Role. Developed research concept, secured funding, assembled germplasm collection, edited paper.*

\*McLeod, A., K. Vining, T. Hoskins, and **R.N. Contreras**. 2022. Impact of indole-3-butyric acid concentration and formulation and propagation environment on rooting success of ‘I3’ hemp by stem cuttings. HortTechnology. 32(3):321-324.  <https://doi.org/10.21273/HORTTECH05016-21>

*Role. Helped design and conduct experiment, interpret results, and edit paper.*

\*Lattier, J.D. and **R.N. Contreras**.  2022.  Flower forms and ploidy levels impact fertility in althea.  HortScience.  57(4):558-570.  <https://doi.org/10.21273/HORTSCI16478-21>

*Role. Developed research concept, secured funding, made initial crosses, edited paper.*

\*Neill, K.E. and **R.N. Contreras**. 2022. Does inducing tetraploidy in *Vaccinium ovatum* improve fruit traits and plant architecture?  HortScience.  57(2):312-318. <https://doi.org/10.21273/HORTSCI16332-21>

*Role. Developed research concept, developed tetraploids for study. Guided research, secured funding, and edited paper.*

\*Melsen, K., M. van de Wouw, and **R.N. Contreras**. 2021. Mutation breeding in ornamentals: past experiences and future opportunities. HortScience 56(10):1154-1165.

*Role.* Developed concept for review and worked with student lead author to organize. Edited manuscript and secured funding for publication.

\*Neill, K.E., **R.N. Contreras**, V.O. Stockwell, \*H. Chen.  2021.  Screening Cotoneaster sp. for resistance to fire blight using foliar inoculation with two strains of *Erwinia* *amylovora*.  HortScience 56(7):824-830. <https://doi.org/10.21273/HORTSCI15872-21>

*Role.* Developed research concept, assembled germplasm for experiment, secured funding, and edited manuscript.

*PRIOR TO PROMOTION TO PROFESSOR*

**Contreras, R.N.** and T.C. Hoskins. 2020. Developing triploid maples. Horticulturae 6(4):70. doi:10.3390/horticulturae604007

*Role.* Conceived research concept, applied treatments, designed field planting, authored manuscript.

Hoskins, T.C., \*J.D. Lattier, and **R.N. Contreras**. 2020. Sowing green seed without stratification does not shorten juvenility or increase plant size in common lilac (*Syringa vulgaris*). HortScience 55(11):1781-1787. <https://doi.org/10.21273/HORTSCI15328-20>

*Role.* Conceived research concept and edited manuscript.

\*Lattier, J.D. and **R.N. Contreras.** 2020. Segregation of flower color and eyespot in althea. J. Amer. Soc. Hort. Sci. 145(4):215-227 <https://doi.org/10.21273/JASHS04824-19>.

*Role.* Conceived research concept, developed initial populations, secured funding, and edited manuscript.

**Contreras, R.N.** and \*Shearer, K. 2020. Exposing seeds of *Galtonia candicans* to ethyl methanesulfonate (EMS) reduced inflorescence height, lodging, and fertility. HortScience 55(5):613-620 <https://doi.org/10.21273/HORTSCI14775-19>.

*Role.* Conceived research concept, applied treatments, directed data collection and interpretation, co-authored manuscript.

\*Chen, H., J.D. \*Lattier, K.J. Vining, **R.N. Contreras**. 2020. Two SNP markers identified using GBS are associated with remontancy in a segregating F1 population of *Syringa meyeri* ‘Palibin’ x *S. pubescens* ‘Penda’ Bloomerang®. J. Amer. Soc. Hort. Sci. 145(1): 104-109 <https://doi.org/10.21273/JASHS04847-20>.

*Role:* Conceived research concept, developed mapping population, guided data collection. Edited manuscript.

\*Petter, J., P. Ries, A. D’Antonio, and **R.N. Contreras**. 2020. A Tree Selection Survey of Tree City USA Designated Cities in the Pacific Northwest. Arboriculture & Urban Forestry. 46(5):371-384.

*Role.* Advised on development of instrument used in survey including defining growth forms. Edited manuscript.

\*Petter, J., P. Ries, A. D’Antonio, and **R.N. Contreras**. 2020. How are managers making tree species selection decisions in the Pacific Northwest of the United States? Arboriculture & Urban Forestry 46(2):148-161.

*Role*. Advised on development of instrument used in survey including defining growth forms. Edited manuscript.

Hoskins, T. and **R.N. Contreras**. 2019. Exposing seeds of *Sarcococca confusa* to increased concentrations and durations of ethyl methanesulfonate reduced seed germination, twinning, and plant size. HortScience 54(11):1902-1906 <https://doi.org/10.21273/HORTSCI14428-19>

*Role:* Conceived research concept, applied treatments, directed data collection and interpretation, co-authored manuscript.

\*Lattier, J.D., \*H. Chen, and **R.N. Contreras**. 2019. Variation in genome size, ploidy, stomata, and rDNA signals in althea (*Hibiscus syriacus* L.). J. Amer. Soc. Hort. Sci. 144(2):130-140.

*Role:* Conceived research concept, developed germplasm collection. Edited manuscript.

\*Graebner, R.C., \*H. Chen, **R.N. Contreras**, K.G. Haynes, and V.R. Sathuvalli. 2019. Identication of a high frequency of triploid potatoes from tetraploid x diploid crosses. HortScience 54(7)1159-1163.

*Role:* Supported flow cytometry and cytology data collection and interpretation.

Vining, K.J., I. Pandelova, K. Hummer, N. Bassil, **R.N. Contreras**, \*K. Neill, \*H. Chen, A.N. Parrish, and B.M. Lange. 2019. Genetic diversity survey of *Mentha aquatica* L. and *Mentha suaveolens* Ehrh., mint crop ancestors. Genetic Resources and Crop Evolution 66(4):825-845.

*Role:* Supported flow cytometry and cytology data collection and interpretation.

\*Chen, H., L. Xue, T. Li, and **R.N. Contreras.** 2019. Quantile regression facilitates simultaneous selection of negatively correlated floral traits among BC1F1 progeny of the male fertile hybrid cultivars Lohengrin and Resi (*Hibiscus syriacus* x *H. paramutabilis*). J. Amer. Soc. Hort. Sci. 144(1):70-76.

*Role:* Conceived research project, compiled germplasm, guided population development, and heavily edited manuscript.

**Contreras, R.N.** and \*K. Shearer. 2018. Genome size, ploidy, and base composition of wild and cultivated maples. J. Amer. Soc. Hort. Sci. 143(6):470-485. <https://doi.org/10.21273/JASHS04541-18>

*Role*: Conceived research concept, oversaw data collection, interpretation, and presentation including preparing tables and figures. Prepared much of discussion.

\*Lattier, J.D. and **R.N. Contreras**. 2017. Ploidy and genome size in lilac species, cultivars, and interploid hybrids. J. Amer. Soc. Hort. Sci. 142(5):355–366.

*Role:* Conceived research concept, compiled initial germplasm collection, guided research, and edited manuscript.

\*Lattier, J.D. and **R.N. Contreras.** 2017. Intraspecific, interspecific, and interseries cross-compatibility in lilac. J. Amer. Soc. Hort. Sci. 142(4):279-288. (JASHS cover).

*Role:* Conceived research concept, compiled initial germplasm collection, guided research, and edited manuscript.

\*Lattier, J.D., \*H. Chen, and **R.N. Contreras**.  2017.  Improved method for enzyme digestion of root tips for cytology.  HortScience 52(7):1029-1032.

*Role:* Collaborated on developing research concept, provided range of germplasm on which to evaluate the protocol, reviewed findings, edited manuscript.

\*Schulze, J.A., \*J.D. Lattier, and **R.N. Contreras.** 2017. In vitro germination of immature *Prunus lusitanica* seed. HortScience 52(8):1122-1124.

*Role.* Conceived research concept, directed research, and assisted in data interpretation. Edited manuscript.

\*Schulze, J.A. and **R.N. Contreras.** 2017. In vivo chromosome doubling of *Prunus lusitanica* and preliminary morphological observations. HortScience. 52(3):332-337.

*Role.* Conceived research concept, directed research, and assisted in data interpretation. Edited manuscript.

\*Schulze, J.A., **R.N. Contreras**, and C.F. Scagel. 2017. Comparing vegetative propagation of two ‘Schipkaensis’ cherrylaurel ploidy levels. HortTechnology 27(1):69-72.

*Role.* Experimental design, assisted in data interpretation, and edited manuscript.

**Contreras, R.N.** and L. Meneghelli. 2016. In vitro chromosome doubling of *Prunus laurocerasus* 'Otto Luyken' and 'Schipkaensis'.  HortScience 51(12):1463-1466.

*Role.* Research concept, data analysis, authored manuscript.

\*Rothleutner, J.J., M.W. Friddle, and **R.N. Contreras**. 2016.Ploidy levels, relative genome sizes, and base pair composition in *Cotoneaster.* J. Amer. Soc. Hort. Sci. 141(5):457-466.

*Role.* Research concept, directed research, data analysis, and co-authored manuscript including preparation of tables.

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

**Contreras, R.N.** and M.W. Friddle. 2015. ‘Oregon Snowflake’ flowering currant. HortScience 50(2):320-321.

*Role.* Conceived breeding project, made treatments, oversaw selection, propagation, and testing of this release. Authored manuscript.

\*Rothleutner, J.J., **R.N. Contreras**, V.O. Stockwell, and J.S. Owen, Jr. 2014. Screening *Cotoneaster* for resistance to fire blight by artificial inoculation. HortScience 49(12):1480-1485.

*Role*. Advised graduate student and conceived research concept, edited manuscript.

**Contreras, R.N.**, J.M. Ruter, and D.A. Knauft. 2014. Flower, fruit, and petiole color of american beautyberry (*Callicarpa americana* L.) are controlled by a single gene with three alleles. HortScience 49(4):422-424. (HortScience cover)

*Role.* Designed and conducted experiments, authored manuscript.

**Contreras, R.N.**, J.M. Ruter, J.S. Owen, Jr., A. Heogh. 2013. Chlorophyll, carotenoid, and visual color rating of japanese-cedar grown in the southeastern United States. HortScience 48(12):1452-1456.

*Role.* Designed and conducted experiments, authored manuscript.

Schwartz, B.M., **R.N. Contreras**, K.R. Harris-Schultz, D.L. Heckart, J.B. Peake, and P.L. Raymer. 2013. Discovery and characterization of a turf-type triploid seashore paspalum. HortScience 48(12):1424-1427.

*Role.* Performed genome sizing and cytology data collection and analysis. Assisted with manuscript revision.

Schwartz, B.M., K.R. Harris-Schultz, **R.N. Contreras**, C.S. Hans, W.W. Hanna, and S.R. Milla-Lewis. 2013. Creation of artificial triploid and tetraploid centipedegrass using colchicine and breeding. Intl. Turfgrass Soc. Res. J. 12:327-334.

*Role.* Assisted with experimental design and implementation.

**Contreras, R.N.**, J.S. Owen, W.W. Hanna, and B.M. Schwartz. 2013. Evaluation of seven complex *Pennisetum* spp. hybrids for container and landscape performance in the Pacific Northwest. HortTechnology 23(4):525-528.

*Role.* Developed concept, authored manuscript, and jointly oversaw experiments with co-authors.

Schwartz, B.M., K.R. Harris-Schultz, C.S. Hans, **R.N. Contreras**, and S.A. Jackson. 2013. Creation of hexaploid and octoploid zoysiagrass using colchicine and breeding. Crop Science 53:2218-2224.

*Role.* Assisted with experimental design and implementation; edited manuscript.

Landgren, C., J.S. Owen, and **R.N. Contreras**. 2013. Evaluating soil and foliar fertilization of *Abies nordmanniana* under container and field production. Scandinavian J. For. Res. Published online 7 Jan 2013. doi:10.1080/02827581.2012.762939

*Role.* Performed chlorophyll analysis and assisted with manuscript preparation and revision.

**Contreras, R.N.**, R. Golembiewski, J. Velez. 2013. Evaluation of study habits of plant identification students. HortTechnology 23(1):130-133.

*Role.* Developed research concept and co-authored manuscript, co-authors developed survey instrument, analyzed data, and co-authored manuscript

Vining, K.J., **R.N. Contreras**, M. Ranik, and S.H. Strauss. 2012. Genetic methods for mitigating invasiveness of woody ornamental plants: research needs and opportunities. HortScience 47(9):1210-1216.

*Role.* Authored section on traditional plant breeding techniques for sterility in ornamentals; edited manuscript.

**Contreras, R.N.** 2012. A simple chromosome doubling technique is effective in several species of Cupressaceae. HortScience 47(6):712-714.

*Role.* Authored paper, conducted experiments, and analyzed data.

**Contreras, R.N.**, J.M. Ruter, J. Conner, Y. Zeng, and P. Ozias-Akins. 2012. Interspecific hybridization in *Tecoma* Juss. (Bignoniaceae): Confirmation of hybridity using GISH and determination of 18s rDNA copy number using FISH in F1 hybrids. Genome 55(6):437-445. doi: 10.1139/g2012-030

*Role.* Authored paper, co-authors assisted with laboratory experiments and techniques, data collection, interpretation, and manuscript preparation.

**Contreras, R.N.**, R. Determann, and M. Friddle. 2011. Differences in winter browning among japanese-cedar cultivars are not due to variation in ploidy levels. HortScience 46(11):1465-1467.

*Role.* Authored paper, co-authors assisted with data collection and interpretation (Friddle) and background of the project (Determann).

**Contreras, R.N.** and J.M. Ruter. 2011. Genome size estimates and chromosome numbers of *Callicarpa* L. (Lamiaceae). HortScience 46(4):567-570.

*Role.* Authored paper, co-author assisted with research concept and manuscript preparation.

**Contreras, R.N.**, J.M. Ruter, and B.M. Schwartz. 2010. Oryzalin-induced tetraploidy in *Cryptomeria japonica* (Cupressaceae). HortScience 45(2):316-319.

*Role.* Authored paper, co-authors assisted with research concept, data collection and interpretation, and manuscript preparation.

**Contreras, R.N.**, J.M. Ruter, and W.W. Hanna. 2009. An oryzalin-induced autoallooctoploid of *Hibiscus* *acetosella* Welw. ex Hiern. ‘Panama Red’ (Malvaceae). J. Amer. Soc. Hort. Sci. 134(5):553-559.

*Role.* Authored paper, co-authors assisted with research concept and manuscript preparation.

*PRIOR TO OSU*

**Contreras, R.N.** and J.M. Ruter. 2009. Sulfuric acid scarification of *Callicarpa americana* (Lamiaceae) seeds improves germination. Native Plants J. 10(3):283-286.

**Contreras, R.N.** and T.G. Ranney. 2008. New opportunities for breeding fragrant rhododendrons. J. Amer. Rhododendron Soc. 62(4):201-202.

**Contreras, R.N.**, T.G. Ranney, and S.P. Tallury. Reproductive behavior of diploid and allotetraploid *Rhododendron* L. ‘Fragrant Affinity’. 2007. HortScience 42(1):31-34.

**Contreras, R.N.**, T.G. Ranney, S.R. Milla-Lewis, and G.C. Yencho. 2007. Investigating parentage and hybridity of three azaleodendrons using AFLP analysis. HortScience 42(3):740–743.

**ii.** **Juried exhibits** NONE

**iii.** **Book Chapters**

Van Laere, K., S.C. Hokanson, **R.N. Contreras**, and J. Van Huylenbroeck. 2018. Woody ornamentals of the temperate zone, p. 803-886. In: J. Van Huylenbroeck (ed.). Ornamental Crops. Handbook of Plant Breeding, vol. 11. Springer, Cham, Switzerland.

*Role.* Co-wrote sections on ploidy manipulation and breeding for biotic stress tolerance. Edited whole chapter with co-authors.

**iv. Extension publications** NONE

**v. Proceedings** (*reviewed by peers prior to publication without the option of rejection*)

**IPPS proceedings. 2023**

**IPPS proceedings. 2022**

*PRIOR TO PROMOTION TO PROFESSOR*

**Contreras, R.N.** and T. Hoskins. 2020. Creating your own path: inducing novel traits using mutagenesis. Acta Hort. 1291:67-71. DOI 10.17660/ActaHortic.2020.1291.9

*Role.* Research concept, experimental design, treatment application, authored manuscript.

\*Giffei, B.L., R.N. Contreras, V.O. Stockwell, J.A. Sisneroz, S.K. Reid, and L.R. Oki. 2019. Assessing fire blight resistance of new *Cotoneaster* genotypes inoculated with *Erwinia amylovora* in the field. Acta Hort. 1288:239-244. DOI 10.17660/ActaHortic.2020.1288.36

*Role*: Developed genotypes being studied, assisted with study design, edited manuscript.

**Contreras, R.N.**, \*H. Chen, \*J.D. Lattier, and K. Vining. 2019. Two SNPs identified using GBS are associated with reblooming in dwarf lilacs. Proc. 63th Ann. SNA Res. Conf. 63:7-10.

*Role*: Developed research concept, developed mapping population, authored manuscript.

**Contreras, R.N.** 2018. Breeding for form and fire blight resistance in *Cotoneaster.* Proceedings of the III International Symposium of Woody Ornamentals of the Temperate Zone. Acta Hort. 1191:83-88.

*Role*: Designed research concept, led research, authored manuscript.

**Contreras, R.N.** 2017. The struggle is real (but fun!): Long term plant breeding at a public university. 67th Combined Proceedings of the International Plant Propagators' Society. Acta Hort. 1212:223-224.

*Role*: Authored manuscript.

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

\*Lattier, K.S. and **R.N. Contreras**. 2015. Non-targeted mutagenesis of *Ornithogalum candicans* through exposure to ethyl methanesulfonate. 65th Combined Proceedings of the International Plant Propagators’ Society. Acta Hort. 1140:195-196.

*Role*: Developed research concept, developed population, oversaw research, edited manuscript.

\*Schulze, J. and **R.N. Contreras**. 2015. Effect of ploidy level on vegetative propagation of two cytotypes of *Prunus laurocerasus* L. ‘Schipkaensis’. 65th Combined Proceedings of the International Plant Propagators' Society. Acta Hort. 1140:199-200.

*Role*: Developed research concept, oversaw research, edited manuscript.

\*Lattier, K.S. and **R.N. Contreras**. 2015. Chemical mutagenesis of *Galtonia candicans* Decne. results in altered morphology and reduced fertility. Proc. 60th Ann. SNA Res. Conf. 60:209-215.

*Role.* Developed research concept, directed student on breeding aspects of project, and advised student performing experiments. Edited manuscript

**Contreras, R.N.** and M.W. Friddle. 2015. Fire blight resistance among interspecific and interploidy F1 hybrids of *Cotoneaster*. Proc. 60th Ann. SNA Res. Conf. 60:186-190.

*Role.* Developed research concept, compiled germplasm, directed controlled crosses, made selections, and directed data collection. Authored manuscript.

**Contreras, R.N.**, A. Haddad, \*K.S. Latier, and \*J.D. Lattier. 2015. Genome sizes and ploidy levels of maples: sample handling and preliminary estimates. Proc. 60th Ann. SNA Res. Conf. 60:191-199.

*Role.* Developed research concept, helped compile germplasm, and directed undergraduate student. Authored manuscript.

\*Lattier, J.D. and **R.N. Contreras**. 2014. Interspecific hybridization in lilacs. Proc. 59th Ann. SNA Res. Conf. 59:229-234.

*Role.* Developed research concept, compiled germplasm, and directed graduate student. Edited manuscript.

**Contreras, R.N.**, \*J. Rothleutner, and V. Stockwell. 2014. Breeding for fire blight resistance and sterility in *Cotoneaster.* Proceedings of the 13th International Workshop on Fire Blight. ActaHort. 1056:221-223.

*Role.* Developed research concept, directed student on breeding aspects of project, and advised student performing experiments. Authored manuscript.

**Contreras, R.N.** 2013. Ornamental Plant Breeding at Oregon State University. 63rd Combined Proceedings of the International Plant Propagators' Society. Acta Hort. 1055:159-162.

**Contreras, R.N.**, M. Friddle, and \*J.D. Lattier. 2013. Relative fertility and ploidy levels of selected rose of sharon cultivars. Proc. 58th Ann. SNA Res. Conf. 58:232-236.

*Role.* Developed research concept, designed experiment, analyzed data, and authored manuscript.

\*Rothleutner, J.J., **R.N. Contreras**, and V. Stockwell. 2012. Evaluation of fire blight resistance of 31 species of *Cotoneaster*. Proc. 57th Ann. SNA Res. Conf. 57:276-278.

*Role.* Developed research concept and advised preparation of manuscript. Co-author Rothleutner prepared manuscript and conducted research. Co-author Stockwell established protocols for experiments and data collection.

**Contreras, R.N.** and J.M. Ruter. 2010. Induced polyploidy in Japanese cedar. Proc. 55th Ann. SNA Res. Conf. 55:25-29.

*Role.* Authored paper, co-author assisted with research concept, data interpretation and manuscript preparation.

*PRIOR TO OSU*

**Contreras, R.N.** and J.M. Ruter. 2008. Preliminary efforts to induce polyploidy in *Cryptomeria japonica*. Proc. 53rd Ann. SNA Res. Conf. 53:159-161.

**Contreras, R.N.** and J.M. Ruter. 2007. New *Callicarpa* species with breeding potential. Proc. 52nd Ann. SNA Res. Conf. 52:327-329.

**Contreras, R.N.**, T.G. Ranney, S.P. Tallury and S.R. Milla. 2005. Using molecular markers to investigate parentage of azaleodendron hybrids. 2005. Proc. 50th Ann. SNA Res. Conf. 50:632-635.

**Contreras, R.N.** and T.G. Ranney. 2004. New opportunities for breeding allopolyploid azaleodendrons. Proc. 49th Ann. SNA Res. Conf. 49:552-554.

**vi. Abstracts from conferences without published proceedings**

L.K. Bradley, K.A. Moore, L. Barth, L. Meyer, M.P. Ross, A. Pulte, G. Thompson, and **R.N. Contreras**. 2022. Extension gardener plant toolbox: reaching wider audiences through national partnerships. HortScience 57(9S):S240 (Abstr.)

Hartley, R., C.F. Scagel, and **R.N. Contreras**, L. Nackley. 2022. Does container choice improve oak tree root quality in nursery production? HortScience 57(9S):S155 (Abstr.)

**Contreras, R.N.** and Tina Marie (Waliczek) Cade. 2022. Engaging undergraduate students in research. HortScience 57(9S):S124 (Abstr.)

Still, C., G. Langellotto, J. Lambrinos, and **R.N. Contreras**. 2022. Does breeding for reduced fecundity in butterfly bush impact pollinator attraction? HortScience 57(9S):S106 (Abstr.)

McLeod, A., K. Vining, and **R.N. Contreras.** 2022. Rooting hormone and propagation environment impact success and quality of stem cuttings from ‘I3’ *Cannabis*. HortScience 57(9S):S12 (Abstr.)

Contreras, R.N. 2021. Progeny from synthetic polyploids of common cherrylaurel (*Prunus laurocerasus*) exhibit varied ploidy levels including novel haploids. HortScience 56(9S):S186. (Abstr.)

*PRIOR TO PROMOTION TO PROFESSOR*

\*Neill, K.E., **R.N. Contreras, R.N.** and V.O. Stockwell. 2020. Variable fire blight resistance among species and selections of cotoneasters to two pathogen strains. HortScience (accepted)

\*J.D. Lattier. 2019. Flower form and ploidy affect female fertility in althea. HortScience 54(9):S117 (Abstr.).

\*Neill, K. and **R.N. Contreras**. 2019. The impacts of ploidy and seasonal development on fruit size and sugar concentrations of berries in *Vaccinium ovatum*. HortScience 54(9):S303 (Abstr.).

\*Lattier, J.D. and **R.N. Contreras.** 2018. Segregation of floral traits in althea (*Hibiscus syriacus*L.). HortScience 53(9):S198 (Abstr.).

\*Chen, H., \*J.D. Lattier, and **R.N. Contreras.** 2018. Confirmation of *Hibiscus syriacus* allotetraploid genome and disomic segregation pattern using rDNA fluorescent in situ hybridization. HortScience 53(9):S339 (Abstr.).

**Contreras, R.N.** 2017. Developing triploid maples. HortScience 52(9):S276 (Abstr.).

\*Lattier, J.D. and **R.N. Contreras**. 2016. Cross compatibility studies in lilac (*Syringa* L.). HortScience 51(9):S301-302 (Abstr.)

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

**Contreras, R.N.** and L. Meneghelli. 2013. In Vitro Chromosome Doubling of *Prunus laurocerasus* ‘Otto Luyken’. HortScience 48(9):S411 (Abstr.)

Schwartz, B.M., **R.N. Contreras**, W.W. Hanna, and S.A. Jackson. 2013. Manipulating the Chromosome Number of Zoysiagrass. ASA-CSSA-SSSA Abstracts 2013. (Abstr.)

\*Rothleutner, J.J. and **R.N. Contreras**. 2012. Variable Fire Blight Resistance Among 31 species of *Cotoneaster.* 109th Ann. Amer. Soc. Hort. Sci. Res. Conf. HortScience 47(9):S366 (Abstr.)

Schwartz, B.M., **R.N. Contreras**, K.R. Harris-Schultz, J.B. Peake, and P.L. Raymer. 2012. Identification or Creation of a Putative Triploid Seashore Paspalum. ASA-CSSA-SSSA Abstracts 2012. (Abstr.)

Einhorn, T., Gibeaut, D., **Contreras, R.N.**, and Whiting, M. 2012. Polyploidy of cells in sweet cherry fruit. Proc. HortScience 47(9):S387 (Abstr.)

**Contreras, R.N.**, J.M. Ruter, J. Conner, Y. Zeng, and P. Ozias-Akins. 2011. Interspecific hybridization in *Tecoma* Juss. (Bignoniaceae): Confirmation of hybridity using GISH and morphology. HortScience 46(9):S320. (Abstr.)

\*Rothleutner, J.J. and **R.N. Contreras**. 2011. Genome size estimates for *Cotoneaster* spp. HortScience 46(9):S386 (Abstr.)

Schwartz, B., K. Harris, **R. Contreras**, and W. Hanna. 2010. Colchicine-Induced Tetraploidy in Centipedegrass. ASA-CSSA-SSSA Abstracts 2010. (Abstr.)

**Contreras, R.N.** and John M. Ruter. 2010. Fruit color in American beautyberry is controlled by a single gene. HortScience 45(8):S280 (Abstr.)

*PRIOR TO OSU*

**Contreras, R.N.** and J.M. Ruter. 2009. An oryzalin induced polyploidy from a hybrid of *Hibiscus acetosella* x *H. radiatus* (Malvaceae) exhibits reduced fertility and altered morphology. HortScience 44(4):1177. (Abstr.).

**Contreras, R.N.** and J.M. Ruter. 2008. Evaluation of *Callicarpa* spp. for ornamental potential. HortScience 43(4):1266. (Abstr.).

**Contreras, R.N.** and T.G. Ranney. 2006. Reproductive Behavior of Diploid and Allotetraploid Azaleodendrons. HortScience 40(3):497-498. (Abstr.).

**b. Other publications**

**i. Media interviews**

All sides with Ann Fisher. Radio interview on NPR – WOSU Public Media. 2 August 2018. <http://www.tinyurl.com/y8o7h55h>

Capital Press. 17 August 2018. *OSU seeks to breed better lilacs.* <https://www.capitalpress.com/ag_sectors/nursery/osu-seeks-to-breed-better-lilacs/article_5248c5c2-4d23-5fa7-a5e3-e93d69788a2f.html>

In the garden with Mike Darcy. Radio interview on 101KXL FM. 24 January 2015. <http://kxl.com/2015/01/24/in-the-garden-with-mike-darcy-for-01-24-15/>

Oregon’s Ag Progress. Winter 2015. <http://oregonprogress.oregonstate.edu/winter-2015/creating-urban-landscapes>

Oregonian. *New Oregon Snowflake shrub is related to currants and gooseberries.* 27 May 2014. <http://www.oregonlive.com/hg/index.ssf/2014/05/new_oregon_snowflake_shrub_is.html>

**ii. Industry or popular press**

**Contreras, R.N.** 2022. Bred for success. Digger, August:93-96.

**Contreras, R.N.** and R. Sniezko. 2021. Restoring a conifer classic. Digger, September: 25-28.

*PRIOR TO PROMOTION TO PROFESSOR*

**Contreras, R.N.** and T. Hoskins. 2020. A new breed of Norway maple. Digger, May: 35-38.

**Contreras, R.N.** 2019. Get ‘em while they’re hot: New cultivars from OSU. Digger, August: 101-104.

**Contreras, R.N.** 2017. A focus on function. Digger, June:33-36.

\*Lattier, J.D. and **R.N. Contreras**. 2016. A tale of two lilacs: Part I – *Syringa*. Digger, January:33-36.

\*Lattier, J.D. and **R.N. Contreras**. 2016. A tale of two lilacs: Part II – *Pubescentes*. Digger, June:33-36.

**Contreras, R.N**. 2016. Reigning in rogues. Digger, August:45-50.

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

\*Lattier, K.S. and **R.N. Contreras**. 2015. Penstemon breeding in the Willamette Valley: A lesson in flexibility. Bulletin of the American Penstemon Society 74:35-41.

**Contreras, R.N.** and \*J.D. Lattier. 2014. Improving a garden classic. Digger, August:47-50.

**Contreras, R.N.** and M. Horn. 2014. Breeding to improve garden performance of *Penstemon* in the Willamette Valley: early stages. Bulletin of the American Pestemon Society 73:68-72.

**Contreras, R.N.** and G. McAninch. 2013. Back from the ban: new *Buddleja* cultivars receive exemption under ODA amendment. Digger, October:33-36.

**Contreras, R.N.** and T. Rinehart. 2012. Technology for the future. Digger, August:47-50.

\*Rothleutner, J.J. and **R.N. Contreras**. 2012. Celebrating Cotoneaster. Digger, January:33-36.

**Contreras, R.N.** and J.S. Owen.2011. The Economy of Water. Digger, August:139-144.

**Contreras, R.N.** 2011. Bred for success: The Nursery Crop Breeding Program at Oregon State University is developing the next generation of nursery and landscape plants for growers in Oregon and beyond. Digger March:41-45.

**Contreras, R.N.** 2010. Bridging the gap: A new partnership between Oregon State University and LPDC designed to continue cultivar development. Landscape Plant News 21(1):6-7.

**Contreras, R.N.** and J.M. Ruter. 2010. Developing an evergreen evergreen: Winter browning in Japanese cedar. Amer. Conifer Soc. Quarterly J. 27(1):19-23.

*PRIOR TO OSU*

**Contreras, R.N.** and J.M. Ruter. 2009. *Callicarpa* evaluation and breeding at The University of Georgia Tifton Campus. Landscape Plant News 20(2):3-5.

**Contreras, R.N.** and J.M. Ruter. 2008. Evaluation of *Callicarpa* spp. for utilization in a breeding program. Georgia Green Industry Association Journal. May/June 32-33.

**Contreras, R.N.**, T. Ranney, T. Eaker, J. Mowrey, and N. Lynch. 2005. Fragrant rhododendrons for southern gardens: Current breeding efforts at NCSU. Proc. N.C. Nursery Short Course 6: 7

**2. Presentation to peers including posters and oral presentations**

**Summary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Time frame** | **Within region** | **National** | **International** | **Total** | **Number invited (out of total)** |
| **Since promotion** | **0** | **7** | **0** | **7** | **0** |
| **Prior to promotion** | **4** | **38** | **7** | **49** | **18** |
| **Total** | **4** | **45** | **7** | **56** | **18** |

**a. Posters**: Student authors denoted with \*.

\*Hartley, R., C.F. Scagel, and **R.N. Contreras**, L. Nackley. 2022. Does container choice improve oak tree root quality in nursery production? 119th Ann. Amer. Soc. Hort. Sci. Res. Conf. Chicago, IL

\*Still, C., G. Langellotto, J. Lambrinos, and **R.N. Contreras**. 2022. Does breeding for reduced fecundity in butterfly bush impact pollinator attraction? 119th Ann. Amer. Soc. Hort. Sci. Res. Conf. Chicago, IL

\*McLeod, A., K. Vining, and **R.N. Contreras.** 2022. Rooting hormone and propagation environment impact success and quality of stem cuttings from ‘I3’ *Cannabis*. 119th Ann. Amer. Soc. Hort. Sci. Res. Conf. Chicago, IL

*PRIOR TO PROMOTION TO PROFESSOR*

\*Giffei, B.L., J.A. Sisneroz, G.E. Johnson, **R.N. Contreras**, K. Reid, D.L. Haver, and L.R. Oki. 2020. UC Landscape plant irrigation trials: *Cotoneaster* evaluation. California Irrigation Institute. 58th Annual Conference. Sacramento, CA.

\*Neill, K. and **R.N. Contreras**. 2019. The impacts of ploidy and seasonal development on fruit size and sugar concentrations of berries in *Vaccinium ovatum*. 116th Ann. Amer. Soc. Hort. Sci. Res. Conf. Las Vegas, NV.

Vining, K.J., I. Pandelova, K. Hummer, N. Bassil, **R.N. Contreras**, \*K. Neill, \*H. Chen, A.N. Parrish, B.M. Lange. 2019. Genetic diversity survey of two mint crop ancestral species: *Mentha aquatica* L. and *Mentha* *suaveolens* Ehrh. Annual Plant and Animal Genome Conference. San Diego, CA.

\*Chen, H., \*J.D. Lattier, and **R.N. Contreras.** 2018. Confirmation of *Hibiscus syriacus* allotetraploid genome and disomic segregation pattern using rDNA fluorescent in situ hybridization. 115th Ann. Amer. Soc. Hort. Sci. Res. Conf. Washington, D.C.

\*Lattier, J.D. and **R.N. Contreras**. 2016. Cross compatibility studies in lilac (*Syringa* L.). Independent Plant Breeders Conference. Morton Arboretum, Chicago, IL.

\*Chen, H. and **R.N. Contreras**. 2016. Using interspecies hybrids as pollen parents in *Hibiscus syriacus* breeding. IPBC. Independent Plant Breeders Conference. Morton Arboretum, Chicago, IL.

\*Lattier, J.D. and **R.N. Contreras**. 2016. Cross compatibility studies in lilac (*Syringa* L.). 113th Ann. Amer. Soc. Hort. Sci. Res. Conf. Atlanta, GA.

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

\*Lattier, J.D. and **R.N. Contreras**. 2014. Colorimetric phenotyping of tetraploid progeny exhibiting incomplete dominance for flower color. Independent Plant Breeders Conference. Grand Rapid, MI

*Role.* Conceived original research concept and directed graduate student.

\*Shearer-Lattier, K. and **R.N. Contreras**. 2014. Non-targeted mutagenesis of *Galtonia candicans* by exposing seeds to EMS. Independent Plant Breeders Conference. Grand Rapid, MI

*Role.* Conceived research concept, applied treatments, directed graduate student.

**Contreras, R.N.** and L. Meneghelli. 2013. In Vitro Chromosome Doubling of *Prunus laurocerasus* ‘Otto Luyken’. 110th Ann. Amer. Soc. Hort. Sci. Res. Conf., Palm Desert, CA.

*Role.* Developed research concept, designed experiments, analyzed data, authored abstract, and prepared poster.

Schwartz, B.M., **R.N. Contreras,** W.W. Hanna, and S.A. Jackson. 2013. Manipulating the Chromosome Number of Zoysiagrass. ASA-CSSA-SSSA

*Role.* Assisted with experimental design and treatment application protocol, assisted in writing abstract.

Schwartz, B.M., **R.N. Contreras**, K.R. Harris-Schultz, J.B. Peake, and P.L. Raymer. 2012. Identification or Creation of a Putative Triploid Seashore Paspalum. ASA-CSSA-SSSA

*Role.* Assisted with experimental design and treatment application protocol, assisted in writing abstract.

\*Rothleutner, J.J. and **R.N. Contreras**. 2012. Variable Fire Blight Resistance Among 31 species of *Cotoneaster.* 109th Ann. Amer. Soc. Hort. Sci. Res. Conf., Miami, FL.

*Role.* Project concept, prepared poster, and assisted writing abstract.

Einhorn, T., Gibeaut, D., **Contreras, R.N.**, and Whiting, M. 2012. Polyploidy of cells in sweet cherry fruit. 109th Ann. Amer. Soc. Hort. Sci. Res. Conf., Miami, FL.

*Role.* Data collection and interpretation.

Gibeaut, D., **R. Contreras**, T. Einhorn, and M. Whiting. 2011. Cropload affects the size, but not the number or polyploidy of cells in sweet cherry fruit. Washington State Horticultural Association 107th Annual Meeting, Wenatchee, WA, December 5-7, 2011.

*Role.* Data collection and interpretation.

**Contreras, R.N.**, J.M. Ruter, J. Conner, Y. Zeng, and P. Ozias-Akins. 2011. Interspecific hybridization in *Tecoma* Juss. (Bignoniaceae): Confirmation of hybridity using GISH and morphology. 108th Ann. Amer. Soc. Hort. Sci. Res. Conf., Waikoloa, HI.

*Role.* Experimental design, conducted research, and authored abstract. Co-authors assisted with various stages of experimental design, execution, and interpretation of data.

\*Rothleutner, J.J. and **R.N. Contreras**. 2011. Genome size estimates for *Cotoneaster* spp. 108th Ann. Amer. Soc. Hort. Sci. Res. Conf., Waikoloa, HI.

*Role.* Experimental design, advised on instrument operation and collection of data, assisted in writing abstract.

Schwartz, B., K. Harris, **R. Contreras**, and W. Hanna. 2010. Colchicine-Induced Tetraploidy in Centipedegrass. ASA-CSSA-SSSA.

*Role.* Assisted with experimental design and treatment application protocol, assisted in writing abstract.

**Contreras, R.N.** and John M. Ruter. 2010. Fruit color in American beautyberry is controlled by a single gene. 107th Ann. Amer. Soc. Hort. Sci. Res. Conf., Palm Desert, CA.

*Role.* Abstract author; co-author assisted with data interpretation and poster preparation.

*PRIOR TO OSU*

**Contreras, R.N.** and J.M. Ruter. 2009. An oryzalin induced polyploidy from a hybrid of *Hibiscus acetosella* x *H. radiatus* (Malvaceae) exhibits reduced fertility and altered morphology. 106th Ann. Amer. Soc. Hort. Sci. Res. Conf. HortScience 44(4):1177. (Abstr.).

**Contreras, R.N.** and J.M. Ruter. 2008. Evaluation of *Callicarpa* spp. for ornamental potential. 105th Ann. Amer. Soc. Hort. Sci. Res. Conf. HortScience 43(4):1266. (Abstr.).

**Contreras, R.N.** and T.G. Ranney. 2006. Reproductive Behavior of Diploid and Allotetraploid Azaleodendrons. HortScience 40(3):497-498. (Abstr.).

**b. Oral Presentations**

**Contreras, R.N.** 2022. Breeding new ornamental plant materials for future demand and limitations. 119th Ann. Amer. Soc. Hort. Sci. Ann. Conf.

L.K. Bradley, K.A. Moore, L. Barth, L. Meyer, M.P. Ross, A. Pulte, G. Thompson, and **R.N. Contreras**. 2022. Extension gardener plant toolbox: reaching wider audiences through national partnerships. 2022 Annual Meeting of the Southern Region ASHS

**Contreras, R.N.** 2021. Progeny from synthetic polyploids of common cherrylaurel (*Prunus laurocerasus*) exhibit varied ploidy levels including novel haploids. 118th Ann. Amer. Soc. Hort. Sci. Ann. Conf.

**Contreras, R.N.** 2021.Tree breeding at Oregon State: Chance discoveries to targeted breeding. University of Minnesota Department of Horticulture Seminar. ***National Invited Speaker***

*PRIOR TO PROMOTION TO PROFESSOR*

**Contreras, R.N.** 2020. Fundamental and applied research to support ornamental plant breeding. Rutgers Department of Plant Biology Seminar. ***National Invited Speaker***

**Contreras, R.N.** 2020. Creating your own path: inducing novel traits using mutagenesis. III International Symposium on Germplasm of Ornamentals. ***International Invited Speaker.***

**Contreras, R.N.** and J.D. Lattier. 2020. Quantitative characterization of color for phenotyping and plant descriptions. 117th Ann. Amer. Soc. Hort. Sci. Ann. Conf. ***National Invited Speaker***

Neill, K.E., **R.N. Contreras**, and V.O. Stockwell. 2020. Variable fire blight resistance among species and selections of cotoneasters to two pathogen strains. 117th Ann. Amer. Soc. Hort. Sci. Ann. Conf.

**Contreras, R.N.** 2019. Applied and fundamental research in ornamental plant breeding at Oregon State. Iowa State Department of Horticulture Research Symposium. ***Invited Keynote Speaker****. (National)*

\*Giffei, B.L., **R.N. Contreras**, V.O. Stockwell, J.A. Sisneroz, S.K. Reid, and L.R. Oki. 2019. Assessing fire blight resistance of new *Cotoneaster* genotypes inoculated with Erwinia amylovora in the field. IX International Symposium on New Ornamental Crops. Guadalajara, Mexico.

**Contreras, R.N.** and \*J.D. Lattier. 2019. Flower form and ploidy affect female fertility in althea. 116th Ann. Amer. Soc. Hort. Sci. Ann. Conf. Las Vegas, NV.

**Contreras, R.N.** 2019. Unraveling Inheritance of Ornamental Traits in Landscape Plants. Korean Society for Horticultural Science National Meeting. Gyeongju, Korea. ***International invited speaker***

**Contreras, R.N.** 2019. Ploidy Manipulation as a Tool in Tree and Shrub Breeding. Gyungsang Natl Univ., Jinju, Korea. ***International invited speaker***

**R.N. Contreras, \***H. Chen, \*J.D. Lattier, and K. Vining. 2019. Two SNPs identified using GBS are associated with reblooming in dwarf lilacs. 63th Ann. SNA Res. Conf.

\*Lattier, J.D., and **R.N. Contreras.** 2018. Segregation of floral traits in althea (*Hibiscus syriacus* L.). Amer. Soc. Hort. Sci. Ann. Conf. Washington, D.C.

**Contreras, R.N.** 2017. Developing triploid maples. Amer. Soc. Hort. Sci. Ann. Conf. Kailua-Kona, HI.

**Contreras, R.N.** 2016. Breeding cotoneasters for improved form and fire blight resistance. III International Symposium on Woody Ornamentals of the Temperate Zone. Minneapolis, MN. ***International invited speaker***

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

**Contreras, R.N.** 2015. Reducing fertility in maples: hybridization, polyploidization, and natural ploidy variation in *Acer.* University of Minnesota, Department of Horticulture – Departmental Seminar February 25. ***National invited speaker***

**Contreras, R.N.** 2015. Adventures in plant breeding from the Deep South to the 45th Parallel. Friends of the J.C. Raulston Arboretum Lecture. Raleigh, NC. ***National invited speaker***

**Contreras, R.N.** 2014. Interspecific hybridization in lilacs. 59th Ann. SNA Res. Conf.

**Contreras, R.N.** 2013. Ornamental plant breeding at Oregon State University. International Plant Propagators Society – Western Region and International Annual Meeting, Portland, OR. ***Invited Speaker***

**Contreras, R.N.** 2013. Taking advantage of natural variation in ploidy levels. American Society of Horticultural Science Annual Conference. Palm Desert, CA. ***National invited speaker***

**Contreras, R.N.**, J. Rothleutner, and V. Stockwell. 2013. Breeding for fire blight resistance and sterility in *Cotoneaster.* 13th ISHS International Fire Blight Workshop. Zürich, Switzerland. ***International invited speaker***

**Contreras, R.N.**, M. Friddle, and J.D. Lattier (presented). 2013. Relative fertility and ploidy levels of selected rose of sharon cultivars. 58th Ann. SNA Res. Conf.

**Contreras, R.N.** 2012. Twice Is Nice: The Role of Polyploidy in Ornamental Plant Breeding. Independent Plant Breeders Conference. Portland, OR. ***Invited speaker***

**Contreras, R.N.**  2012. Invasive Plant Council of British Columbia. Horticultural Tools for Preventing Invasive Species. Vancouver, B.C., Canada. ***International invited speaker***

**R.N. Contreras**. 2012. Evaluation of fire blight resistance of 31 species of *Cotoneaster*. 57th Ann. SNA Res. Conf. 57:276-278.

**Contreras, R.N.**  2010. Workshop: The Role of Horticulture in Controlling Invasive Species. American Society of Horticultural Science Annual Conference. Palm Desert, CA. ***Invited Panel Member***

**Contreras, R.N.** 2010. Workshop: Life After Graduation. American Society of Horticultural Science Annual Conference. Palm Desert, CA. ***National invited speaker***

**Contreras, R.N.** 2010. Breeding methods to reduce the invasive potential of nursery crops. American Society of Horticultural Science Annual Conference. Palm Desert, CA. ***Invited Speaker***

**Contreras, R.N.** 2010. Induced polyploidy in Japanese cedar. 55th Ann. SNA Res. Conf.

**Contreras, R.N.**  2010. Ornamental Plant Breeding at Oregon State University. Departmental Seminar, Department of Horticulture, Oregon State University.

**c. Workshops and tours**

**Contreras, R.N.** and T. Cade. 2022. Engaging undergraduate students in research. 119th Ann. Amer. Soc. Hort. Sci. Res. Conf. Chicago, IL. ***Coordinator and moderator on behalf of Research Division ASHS in role as Vice President***

*PRIOR TO PROMOTION TO PROFESSOR*

**Contreras, R.N.** 2017. Nursery and Garden Tours on the Big Island of Hawaii. American Society of Horticultural Science Annual Conference. Kailua-Kona, HI. ***Coordinator on behalf of Nursery Working Group***

*PRIOR TO PROMOTION TO ASSOCIATE PROFESSOR*

**Contreras, R.N.** and W. Dai. 2013. The Role and Importance of Polyploidy in Ornamental Plant Breeding. American Society of Horticultural Science Annual Conference. Palm Desert, CA. ***Coordinator***

**Contreras, R.N.** and J. Altland. 2012. Invasive Plants: Breeding, Production, Ecology, and Management. American Society of Horticultural Science Annual Conference. Miami, FL. ***Coordinator***

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**3. Grant and Contract Support.** I have generated $3,474,037 in extramural support since 2009, of which $1,514,529 came to my program.

Organization Funded Received by my program

***Grants***

USDA-SCRI 100,000 0

USDA-ARS-Northwest Nursery Res. Cntr. 72,000 72,000

USDA-ARS-SCA 25,000 25,000

Horticultural Research Institute 100,442 65,442

American Rhododendron Society 1,000 1,000

USDA-ARS-U.S. National Arboretum 12,658 12,658

USDA-ARS-Small Fruit Crop Germplasm Comm 17,500 17,500

American Penstemon Society 1,713 1,713

Agriculture Research Foundation 51,117 45,617

Oregon Department of Agriculture 691,937 691,937

Schmidt Family Charitable Foundation 164,375 164,375

California Dept. Food and Agriculture 309,348 14,240

Center for Applied Nursery Research 2,500 2,500

USDA-Spec Crop Block Grant 999,992 20,256

OSU Research Office (Accelerator) 15,000 15,000

***Subtotal*** **2,659,555 1,244,211**

***Fees/Donations***

JLPN Liners 500 500

Bailey Nurseries 1,500 1,500

Heritage Seedlings 3,250 3,250

Fall Creek Nursery 3,500 3,500

Oregon Department of Agriculture 2,050 2,050

Univ. of Georgia Turfgrass Program 5,000 5,000

Online Courses 1,591,619 936,245

***Subtotal*  1,607,419 952,045**

***Contracts***

Landscape Plant Development Center (LPDC) 90,500 90,500

CREES with USDA (Carolyn?)

**Total 4,357,474 2,005,885**

**a. Competitive grants**

**Oregon Specialty Crop Block Grant 2022**

**ODA nursery grants 2023 x 2**

**Frank and Evelyn Schmidt Trust 2023**

**HRI 2023. $20,000.**

**NNCRC 2023?**

**NNCRC 2022?**

Thompson et al. 2022. Increasing resiliency through greater urban tree diversity. USDA-SCRI Planning Grant. $50,000

**Contreras, R.N.** and K. Hummer.2022. Ploidy in *Vaccinium* species. USDA-ARS Small Fruit Crop Germplasm Committee. $16,473.

**Contreras, R.N.** 2022. Continued efforts to develop and evaluate sterile triploid maples with verticillium resistance. Schmidt Family Charitable Foundation - $12,500

**Contreras, R.N.** 2022. Tree form hybrid hibiscus may reduce labor associated with training. Schmidt Family Charitable Foundation - $12,000

**Contreras, R.N.** 2022. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $39,668.

**Contreras, R.N.** 2022. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $29,390.

**Contreras, R.N.** 2022. Optimizing propagation and production of Amur maples through cutting and micropropagation to facilitate introducing sterile, disease resistant cultivars. Ag Research Foundation - $15,000

**Contreras, R.N.**, G. Langellotto, J. Lambrinos.2021. Fertility, population dynamics, and pollinator attractiveness of standard and “sterile” cultivars of *Buddleia*. Horticultural Research Institute - $35,442.

**Contreras, R.N.** 2021. Developing large populations of hexaploid althea. USDA-Northwest Nursery Crop Research Center - $24,000.

**Contreras, R.N.** 2021. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $29,026.

**Contreras, R.N.** 2021. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $29,390.

**Contreras, R.N.** 2021. Continued efforts to develop and evaluate sterile triploid maples. Schmidt Family Charitable Foundation - $12,500

**Contreras, R.N.** 2020. Optimizing micropropagation of Amur and Norway maple. OSU Research Office Advantage Accelerator - $15,000.

**Contreras, R.N.** 2020. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $29,125.

**Contreras, R.N.** 2020. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $29,862.

**Contreras, R.N. 2020.** Mutation breeding to develop new shade trees.J. Frank Schmidt Family Charitable Foundation - $8,000

**Contreras, R.N. 2020.** Continued efforts to develop and evaluate sterile triploid maples with verticillium resistance. J. Frank Schmidt Family Charitable Foundation - $12,500

Oki, L., K. Reid, D. Haver, S. Kim, L. Nackley, **R. Contreras**, Y. Sun, L. Rupp, and U. Schuch. 2020. USDA-Specialty Crop Multistate Program - $999, 992.

**Contreras, R.N. 2019.** Equipment upgrade to conduct breeding using ploidy manipulation and genome size determination. USDA-Northwest Nursery Crop Research Center - $24,000.

Oki, L., K. Reid, **R. Contreras**, and D. Haver. 2019. Horticultural Research Institute - $35,000.

**Contreras, R.N. 2019** Improving nursery profitability by engineering superior substrates. USDA-ARS - $25,000.

**Contreras, R.N.**, G. Langellotto, J. Lambrinos.2019. Fertility, population dynamics, and pollinator attractiveness of standard and “sterile” cultivars of *Buddleia*. Horticultural Research Institute - $30,000.

**Contreras, R.N.** 2019. Evaluating a diverse germplasm collection of maples for breeding and introduction. J. Frank Schmidt Family Charitable Foundation - $5,000.

**Contreras, R.N.** 2019. Continued efforts to develop and evaluate sterile triploid maples. J. Frank Schmidt Family Charitable Foundation - $10,000.

**Contreras, R.N.** 2019. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $20,000.

**Contreras, R.N.** 2019. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $30,001.

**Contreras, R.N.** 2018. Infrastructure for development and evaluation of shade trees. J. Frank Schmidt Family Charitable Foundation - $5,000.

**Contreras, R.N.** 2018. Evaluating triploid amur, norway, and trident maples. J. Frank Schmidt Family Charitable Foundation - $10,000.

**Contreras, R.N.** 2018. Developing triploid forms of maples to breed for reduced invasiveness. USDA-Northwest Nursery Crop Research Center - $24,000.

**Contreras, R.N.** 2018. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $28,158

**Contreras, R.N.** 2018. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $30,000.

**Contreras, R.N.** 2017. Developing tetraploid forms of maples to breed for reduced invasiveness. USDA-Northwest Nursery Crop Research Center - $24,000.

**Contreras, R.N.** 2017. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $23,600.

**Contreras, R.N.** 2017. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $35,125.

**Contreras, R.N.** 2017. Induced polyploidy in three maple species to breed for sterile triploids. J. Frank Schmidt Family Charitable Foundation - $12,000.

Oki, L., J. Sisneroz, K. Reid, **R. Contreras**, D. Haver, and D. Fujino. 2016. Landscape Plant Performance: Water Use and Disease Resistance Assessments and New Cultivar Selections. California Department of Food and Agriculture, Specialty Crop Block Grant Program - $309,348.

**Contreras, R.N.** 2016. Evaluating five improved genotypes of cotoneasters for container production in southeastern U.S. Center for Applied Nursery Research - $2,500.

**Contreras, R.N.** 2016. Assessing genome size in maples: an express route to improved cultivars with reduced fertility. J. Frank Schmidt Family Charitable Foundation - $10,000.

**Contreras, R.N.** 2016. Induced polyploidy in three maple species to breed for sterile triploids. J. Frank Schmidt Family Charitable Foundation - $5,000.

**Contreras, R.N.** 2016. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $23,402.

**Contreras, R.N.** 2016. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $34,260.

***PRIOR TO PROMOTION***

**Contreras, R.N.** 2015. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $23,225.

**Contreras, R.N.** 2015. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $33,610.

**Contreras, R.N.** 2015. Combining weeping and purple foliage traits in katsuratree. J. Frank Schmidt Family Charitable Foundation - $6,000.

**Contreras, R.N.** 2015. Induced polyploidy in five maple species to breed for sterile triploids. J. Frank Schmidt Family Charitable Foundation - $5,000.

**Contreras, R.N.** 2014. Developing garden-worthy varieties using interspecific hybridization in subgenus *Dasanthera* and subgenus *Saccanthera*, respectively. American Penstemon Society - $750.

**Contreras, R.N.,** J. Perkins, S. Perkins, J. Loureiro. 2014. Counting Chromosomes of Species in *Rhododendron* Subgenus *Rhododendron* Section *Schistanthe* (*Vireya*) Having Flow Cytometry Scores Well Above the Range Normally Expected for Diploid Species in *Rhododendron* Subgenus *Rhododendron*. - $1,000

**Contreras, R.N.** 2014. Induced polyploidy in five maple species to breed for sterile triploids. J. Frank Schmidt Family Charitable Foundation - $4,500.

**Contreras, R.N.** 2014. Combining weeping and purple foliage traits in katsuratree. J. Frank Schmidt Family Charitable Foundation - $5,000.

**Contreras, R.N.** 2014. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $20,000.

**Contreras, R.N.** 2014. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $18,000.

**Contreras, R.N.** 2013.Evaluation of *Cotoneaster* spp.: Landscape performance, fireblight resistance, and ploidy levels. USDA-ARS-USNA - $12,658

**Contreras, R.N.** 2013. Developing garden-worthy varieties using interspecific hybridization in subgenus *Dasanthera* and subgenus *Saccanthera*, respectively. American Penstemon Society - $963.

**Contreras, R.N.** 2013. Developing sterile forms of economically important nursery crops. Oregon Department of Agriculture - $20,000.

**Contreras, R.N.** 2013. Retaining an industry-wide benefit by the OSU Ornamental Plant Breeding Program. Oregon Department of Agriculture - $10,000.

**Contreras, R.N.** 2013. Developing novel, disease resistant forms of nursery crops. Oregon Department of Agriculture - $20,000.

**Contreras, R.N.** 2013. Induced polyploidy in five maple species to breed for sterile triploids. J. Frank Schmidt Family Charitable Foundation - $8,000

**Contreras, R.N.** 2013. Combining weeping and purple foliage traits in katsuratree. J. Frank Schmidt Family Charitable Foundation - $2,500.

**Contreras, R.N.** 2012. In vitro chromosome doubling of common cherrylaurel and Norway maple. Agriculture Research Foundation - $12,367.

**Contreras, R.N.** 2011. Induced polyploidy in six maple species to breed for sterile triploids. Oregon Department of Agriculture - $15,868.

**Contreras, R.N.** 2011. Development of tetraploid norway maple cultivars. J. Frank Schmidt Charitable Foundation - $7,500.

**Contreras, R.N.** 2011. Mapping the woody plants of Oregon State University. J. Frank Schmidt Charitable Foundation - $5,000.

**Contreras, R.N.** 2010 – 13. Cultivar development for the LPDC. Landscape Plant Development Center - $90,500. (Contract covering 0.25 FTE and OPE plus funds for supplies)

Pellett, H. and **R.N. Contreras**. 2010. Development of new, superior cultivars of landscape plants. Oregon Department of Agriculture - $30,000

**Contreras, R.N.**, S. Doane, and M. Friddle.2010. Development of sterile cherrylaurel cultivars. Oregon Department of Agriculture - $20,570

**Contreras, R.N.** 2009. Development of tetraploid norway maple cultivars. J. Frank Schmidt Charitable Foundation - $6,375.

**Contreras, R.N.** and T. Rinehart. 2009. Development of tetraploid *Hydrangea macrophylla* cultivars. Oregon Department of Agriculture - $21,500.

**Contreras, R.N.** 2009. Development of a sterile form of norway maple (*Acer platanoides*). Agricultural Research Foundation - $11,250.

***Non-competitive***

**Contreras, R.N.** 2023. Evaluating physiology and gene expression following induced polyploidy of specialty crops. USDA-ARS NACA. $64,145

**Contreras, R.N.** 2013. Ploidy manipulation of *Vaccinium arboreum* ‘Sparkleberry’. Fall Creek Nursery - $3,500.

**Contreras, R.N.** 2011. RAPD screening of red maple cultivars. Bailey Nursery, Inc. - $1,000.

**Contreras, R.N.** 2011. Treatment of *Stewartia pseudocamellia* and *Styrax japonicus* with oryzalin and ethyl methanesulfonate to develop polyploids and induce variation. Heritage Seedlings - $3,250.

**Contreras, R.N.** 2010. Evaluation of *Pennisetum* spp. selections for the Pacific Northwest. University of Georgia Turfgrass Program - $5,000.

**Contreras, R.N.** 2010-11. Evaluation of applications submitted to ODA for exemptions under ODA603-052-1200. ODA - $2,050.

**4. Patent awards, cultivar releases, and inventions**

1. *Vaccinium ovatum* ‘Cascade Jewel’. Applied for release March 2023.
2. *Hibiscus syriacus* ‘Flamingo’. Released December 21, 2022. PPAF February 27, 2023.
3. *Cotoneaster* ×*suecicus* ‘Emerald Beauty’ USPP32,308. Released May 21, 2019. USPP granted October 13, 2020.
4. *Cotoneaster* ×*suecicus* ‘Emerald Sprite’ USPP31,719. Released August 30, 2018. USPP granted May 5, 2020.
5. *Ribes sanguineum* ‘Oregon Snowflake’ USPP26,763. Released March 31, 2014. USPP granted May 31, 2016.

**5. Other information appropriate to the discipline**

a. Professional Meeting Participation

III International Symposium on Germplasm of Ornamentals, 2020

Third International Symposium on Woody Ornamentals of the Temperate Zone, 2016

ii. National Association of Plant Breeders, 2014

iii. 13th International Workshop on Fire Blight, 2013

iv. American Society for Horticultural Science, 2008 – 2013, 2017 – 2023

v. Southern Nursery Association Research Conference, 2004 − 2008, 2010, 2012 – 2015, 2019

b. Memberships

i. American Society for Horticultural Science

ii. International Society for Horticultural Science

iii. International Plant Propagators’ Society

iv. Gamma Sigma Delta

v. Pi Alpha Xi

vi. American Conifer Society

vii. American Penstemon Society

viii. American Rhododendron Society

c. Professional development workshops

1. American Society for Horticultural Science, Leadership Fellow, Class I, 2021-22
2. Inclusive Teaching Workshop: College of Agricultural Sciences. Oregon State University. 2021
3. Black Minds Matter. Oregon State University Educational Opportunities Program and Advancing Academic Equity for Student Success 2021
4. Search Advocate continuing education 2020.
5. Search Advocate Training. Panel discussion for continuing education. Office of Equity and Inclusion at OSU – 2015.
6. Search Advocate Training. Office of Equity and Inclusion at OSU – 2014
7. Leading Coalitions Workshop. Institute for Conservation Leadership – 2011

**D. Service**

1. University Service

a. **Department**

1. Chair, Ad Hoc Committee for Strategic Planning, 2021-2022
2. Chair, Space Committee, 2021 – current
3. Chair of peer review of teaching committee Lloyd Nackley – Fall 2020
4. Search Committee Skinkis Lab FRA – 2019
5. Promotion and Tenure Committee – 2017 – 2019.
6. Chair of peer review of teaching committee Alec Kowalewski – Fall 2016
7. Southern Oregon Research and Extension Center – Assistant Professor of Viticulture Search Committee 2016
8. Peer review of teaching committee Shawn Mehlenbacher – Spring 2015
9. Chair of the peer review of teaching committee Kelly Donegan - Winter 2015
10. Chair of the peer review of teaching committee Alec Kowalewski - Fall 2014
11. Co-Chair Nursery Crops Production and Management Search Committee 2014; member of revised committee 2015-16
12. Horticulture Administrative Assistant Search Committee 2014
13. Department Head Search Committee 2012-13
14. Co-Chair Turf Specialist Search Committee 2012
15. Horticulture Curriculum Committee 2009 – present
16. IPSI Curriculum Committee 2011 – 2012
17. Established and organized Travel Seminar 2011
18. Internal Manuscript Review (2011 – 3, 2012 – 1, 2013 – 5, 2014 – 3, 2015 – 2, 2016 – 3; 2017 – 5; 2018 – 2; 2019 – 2; 2020 – 1; 2021 – 1)

b. **College of Agricultural Sciences**

Visioning Committee for Plant Innovation Complex

Greenhouse Advisory Committee 2022 –

Caneberry Crop Advisory Committee 2022 –

CAS Thematic Area Development – Agricultural Competitiveness and Resilience Theme Group – 2020

Dean of College of Agricultural Sciences, Search Committee 2017-18.

RM Wade Award for Distinguished Teaching, Selection Committee 2017

CAS Faculty Awards Review Committee 2016

Soil Fertility Search Committee, Search Advocate; Department of Crop and Soil Sciences – 2015

Achievement Rewards for College Scientists Selection Committee 2014 – 2015

Curriculum and Assessment Committee 2013 – 2018

Hazelnut Variety Advisory Committee 2013 – present

Steering Committee for Collaborative Megaproject: *Breeding plants to address climate change* 2012 – 2015

PBG Undergraduate Coordinator 2011 – 2016

Variety Release Committee 2010 – 2015

c. **University**

STEM Leaders mentor 2022

Faculty Senate 2021-2023

URSA Engage mentor 2019, 2020

Faculty Student Mentor Program 2018 – 2019

Chair Graduate Council 2017 – 2018

10-year program review of graduate program in History of Science 2017

10-year program review of graduate program in Chemical Engineering 2017

Search Committee for Associate Dean of the Graduate School 2016.

Review Committee Oregon Lottery Graduate Scholarship 2016, 2017

Frolander Outstanding GTA Selection Committee 2015

Reviewer OSU Research Equipment Reserve Fund (RERF) grant applications Spring 2015.

Graduate Council 2014 – 2019

Campus Planning Committee 2012 – 2018

Graduation Marshall 2013 – 2018

Faculty Senate 2013

**2. Professional Service – *National and International***

1. Evaluation Committee in search for Research Leader, USDA National Clonal Germplasm Repository, Corvallis - 2023
2. ASHS National Issues Committee 2022 – current
3. USDA-ARS National Program Review Panel: NP301A Panel 1d – National Plant Germplasm System Super Panel – Gene Banks 4: Clonal, Tropical/Subtropical, 2023
4. Reviewed application for promotion to Professor, Ohio State University, 2022
5. Review of ARS Research Project Plan in the National Program: 301, 2022
6. American Society for Horticultural Science Mentor – 2022 (1 mentee), 2023 (1 mentee)
7. Vice President, Research Division American Society for Horticultural Science, 2021-23
8. Reviewed application for promotion to Associate Professor with indefinite tenure, University of Hawaii at Manoa, 2021
9. American Conifer Society – Scholarship Committee, 2020 -
10. Vice President Elect – Research Division American Society for Horticultural Science, 2020-21
11. Judge for The Paul Thomas Pi Alpha Xi Photo Contest, 2020
12. Reviewed application for promotion to Associate Professor with indefinite tenure, University of Maine, 2019
13. Scientific Committee and Editorial Board for ISHS 3rd International Symposium on Germplasm of Ornamentals in Seoul, South Korea – 2020
14. External reviewer for SPARK Technology Commercialization Fund at Univ Connecticut – 2019
15. Pi Alpha Xi National President 2018 – 2020
16. Consulting Editor of J. Amer. Soc. Hort. Sci. - Genetics and Germplasm – 2017-
17. ASHS Outstanding Graduate Educator Selection Committee – 2016-19
18. Chair Nursery Working Group of ASHS − 2016-17
19. Chair-elect Nursery Working Group of ASHS − 2015-16
20. USDA-NIFA-AFRI grant review panel (Plant Breeding for Agricultural Production) 2015
21. Pi Alpha Xi Ad Hoc Committee on Chapter Application Process 2015
22. Editorial Board Acta Horticulturae Proceedings of III International Symposium on Woody Ornamentals of the Temperate Zone. Minneapolis, MN. 2016
23. Scientific Committee member: III International Symposium on Woody Ornamentals of the Temperate Zone. Minneapolis, MN. 2016
24. External reviewer HATCH project for Stan Hokanson, Univ. Minnesota 2014
25. Editorial Board Acta Horticulturae Proceedings 13th ISHS Fire blight Workshop 2013
26. ASHS Nominations and Elections Committee 2012 – 2014
27. Chair USDA Woody Landscape Plant Crop Germplasm Committee 2013-14
28. Secretary USDA Woody Landscape Plant Crop Germplasm Committee 2012-13
29. Co-coordinated Workshop Sponsored by Ornamental Plant Breeding Working Group. *The Role and Importance of Polyploidy in Ornamental Plant Breeding*. 2013 Amer Soc Hort Sci Annual National Conf.
30. Co-coordinated Workshop Sponsored by Ornamental Plant Breeding and Invasive Plants Research Working Groups. Invasive Plants: Breeding, Production, Ecology, and Management. 2012 Amer Soc Hort Sci Annual National Conf.
31. Chair Ornamental Plant Breeding Working Group of ASHS − 2011-12
32. Chair-elect Ornamental Plant Breeding Working Group of ASHS − 2010-11
33. Manuscript Reviewer
34. Ornamental Plant Research (2023 – 1)
35. Crop Science (2020 – 1)
36. J. Plant Pathology (2017 – 2; 2020 – 1)
37. PLOS ONE (2016 – 1)
38. ActaHorticulturae (2014 ISHS - Symposium 15, Ornamental Horticulture in the Global Greenhouse) 2014 – 1
39. Plant Science (2013 – 1)
40. J. Amer. Soc. Hort. Sci. (2012 – 2; 2013 – 2; 2014 – 3; 2015 – 1; 2016 – 1; 2017 – 5; 2017-Current, Consulting Editor for Genetics and Breeding & Reviewer)
41. HortScience (2010 – 4; 2011 – 3; 2012 – 5; 2013 – 4; 2014 – 2; 2015 – 2; 2016 – 3; 2017 – 5; 2018 – 1; 2019 – 4; 2020 – 3; 2021 – 2; 2022 – 2)
42. HortTechnology (2011 – 1; 2013 – 1; 2019 – 2)
43. African J. Biotechnol. (2012 – 1)
44. Euphytica (2014 – 1; 2017 – 1)
45. Silvae Genetica (2015 – 1)
46. Member USDA Woody Landscape Plant Crop Germplasm Committee 2011 – present
47. Chair of Judges Panel for Bryson James Ph.D. Student Competition at the Southern Nursery Association Research Conference 2012

3. **Service to the Public, professionally related**

* 1. Science Night at Bessie Coleman Elementary School, Corvallis, OR. *Engaging K-5 students and parents in Horticulture: Monarchs and Milkweed!* March 10, 2023.
  2. Review of applications for exemption of butterfly bush cultivars under the amendment to ODA 603-052-1200 (2010 – present)
  3. ODA Nursery Advisory Committee 2010 – 2012 (*ex officio* member)
  4. International Plant Propagators' Society 2013 National Meeting Planning Committee 2011 – 2013; 2023 Western Region Planning Committee.
  5. Judge for the 2012, 2013, 2015 Yard Garden and Patio Show

E. **AWARDS**

1. 2021 American Society for Horticultural Science - Outstanding Cross-Commodity Publication Award
2. 2019 Oregon Association of Nurseries President’s Five Star Award
3. 2018 Oregon Association of Nurseries Distinguished Education Award
4. 2018 Western Region Award for Excellence in College and University Teaching in the Food and Agricultural Sciences. Presented by U.S. Department of Agriculture, National Institute of Food and Agriculture, Division of Community and Education
5. 2016 Oregon Association of Nurseries President’s Five Star Award
6. 2015 R.M. Wade Award for Excellence in Teaching and Registry of Distinguished Teachers
7. 2013 College of Agricultural Sciences Savery Outstanding Young Faculty Award

F. **Diversity, equity and inclusion**

My goal is to create an environment in which students and staff feel included. While attending a mentor training program I was struck by the statement that we have our “DEI” in the wrong order. It does no good to create a diverse environment only to alienate the underrepresented members due to a lack of inclusion or equity. Horticulture is a largely monocultured discipline with regard to race and I hope to change our small corner of that. Our student population is not extremely diverse but what I have tried to do is engage those underrepresented students to check in and make sure they feel like they have a home in our Department, at Oregon State University, and in Corvallis. After starting this dialogue with one student he shared some personal experiences in which he had felt explicitly excluded by a random member of the OSU community. This was an excellent opportunity for us to establish where we stand and that my research program values him, his perspective, and we want him working with us. That student is starting a MS program this fall. This single instance does not change the world, but it does change that one student’s perspective on his college experience. It also encapsulates how important the frank and open dialogue is. Oregon State, Corvallis, Oregon, and Horticulture are largely white – so let’s be open and honest about it by identifying the status quo, where we want to get with regard to diversity, and how we plan to get there. Personally, I plan to continue fostering the relationships one at a time with students in the Department and also reaching out to colleagues at HBCU institutions for recruitment.