

Clarice J. Coyne
United States Department of Agricultural – Agricultural Research Service
Plant Germplasm Introduction and Testing Unit
Washington State University
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Education

1973-1975 University of California, Riverside, Plant Science
1976-1977 California State University, Chico, Plant Science
1977-1979 University of California, Davis, concentration Agronomy, Bachelor of Science, Plant Science 1981
1988-1989 Oregon State University, concentration: Genetics, M.S. Horticulture 1989
1991-1995 Oregon State University, concentration: Genetics, Ph.D. Horticulture; 1995

Positions

February 1995-to present. Adjunct Scientist, Department of Crop and Soil Sciences & Adjunct Professor, Department of Horticulture, Washington State University, Pullman, WA.

December 1998- to present. Member, The Graduate School, Faculty Washington State University.

June, 1998-to March 202. Geneticist and Curator, USDA-ARS, Plant Germplasm Introduction and Testing Research Unit.

January 2019- to August 2022. Interim Agronomist, USDA-ARS, Plant Germplasm Introduction and Testing Research Unit.

February 1995- June 1998. Research Geneticist. USDA-ARS, Grain Legume Genetics and Physiology unit Pullman, Washington. Post-doctoral researcher studying genetic resistance to common root rot in pea.

September 1991- January 1995. Graduate Research Assistant, Oregon State University, Corvallis, OR.

September 1989- August 1991. Plant Breeding Research Assistant, raspberries, Sweetbriar Development (now part of Driscoll's), Watsonville, CA.

January 1988-August 1989. Graduate Research Assistant, Oregon State University, Corvallis, OR.

Synergistic Activities

Principal Investigator or co-principal investigator on projects to develop agronomic, genetic and genomic resources for the cool season food legumes: lentil, pea, faba bean and chickpea. Extramural research support career total \$5.2M. Past Technical Editor for the journal Crop Science. Editor-in-Chief, Legume Science, 2024-26.

Scholarly Productivity

107 peer-reviewed publications & 11 book chapters
Google scholar: 6297 citations, h-index 39, i10-index 93

Honors and Awards

2020 Fellow, American Association for the Advancement of Science

2019 Fellow, Crop Science Society of America
 2018 Plenary Speaker, International Food Legume Research Conference, Marrakech, Morocco
 2016 Research, Education, and Economics (REE) Mission Area Merit Award, ARS Legume and Oilseed Plant Breeding Team
 2015 Meritorious Service Award in recognition of research excellence in Genetics and Genomics of Food Legumes, North American Pulse Improvement Association
 Gamma Sigma Delta, Agriculture Honor Society, inducted 1994.
 California State Scholarship, four years university tuition and fees, 1973.

Professional Memberships and Committees

Agronomy Society of America
 Crop Science Society of America
 American Association for the Advancement of Science
 North American Pulse Improvement Association, Board of Directors, 2005- 2013.
 Pulse Crop Working Group
 USDA ARS National Plant Germplasm System Committees
 Plant Germplasm Operating Committee
 Pisum Crop Germplasm Committee
 Food Legume Crop Germplasm Committee

Agronomy Society of America, Crop Science Society of America Committees

Group	Position	Term Start	Term End
C - Crop Science Editorial Board	CSSA Technical Editor, Div. C-1, C-8	2019-01-01	2021-12-31
C - Frank N. Meyer Medal for Plant Genetic Resources Committee	Chair	2018-01-01	2021-12-31
C - Crop Science Editorial Board	CSSA Technical Editor, Div. C-1, C-8	2016-01-01	2018-12-31
C - Editorial Affairs, Policies, & Practices Committee	CSSA Technical Editor	2016-01-01	2018-12-31
C - Frank N. Meyer Medal for Plant Genetic Resources Committee	Member	2016-01-01	2017-12-31
C - Div. C-8, Plant Genetic Resources Officers	Past Chair, Div. C-8	2016-01-01	2016-12-31
C - International Year of Pulses Planning Committee	Member	2015-01-01	2016-12-31
ACS - Ad Hoc Awards Committee	Member	2015-01-01	2015-12-31
C - Program Planning Committee	Chair, Div. C-8	2015-01-01	2015-12-31
C - Div. C-8, Plant Genetic Resources Officers	Chair, Div. C-8	2015-01-01	2015-12-31
C - Nominations for President-Elect Committee	Chair, Div. C-8	2015-01-01	2015-12-31
C - Nominations Committee for Div. C-8 Officers	Chair	2015-01-01	2015-12-31
C - Div. C-8, Plant Genetic Resources Officers	Chair-Elect, Div. C-8	2014-01-01	2014-12-31
C - Ron Phillips Plant Genetics Lectureship	Chair	2014-01-01	2014-12-31

Publications – last 5 years (peer-reviewed)

- Guerra García A, Trněný O, Brus J, Renzi JP, Kumar S, Bariotakis M, Clarice J. Coyne CJ, Stergios Pirintsos S, Chitikineni A, Caron CT, Bett KE, Varshney R, Berger J, von Wettberg JB, Smýkal P. 2023. Macroecological patterns and genetic diversity of lentil crop progenitor (*Lens orientalis* (Boiss.) Schmalh.). Plant Biology (in press)
- Johnson J.P., L. Piche, H. Worrall, S.A. Atanda, C.J. Coyne, R. McGee, K. McPhee, and N. Bandillo. 2023. Effective Population Size Estimation in Field Pea (*Pisum Sativum* L.). Heredity (submitted).
- Khan AW, Garg V, Gupta S, Sun S, Dudchenko O, Roorkiwal M, Chitikineni A, Bayer PE, Shi C, Upadhyaya HD, Baruch K, Yang B, Coyne CJ, Nguyen HT, Ronen G, Lieberman E, Siddique KHM, Veneklaas E, Xin L, Edwards D, Varshney RK. 2023. *Cicer* super-pangenome provides insights into species evolution and agronomic trait loci for crop improvement in chickpea (*Cicer arietinum*). Nature Genetics (submitted)
- Weeden N.F., M. Lavin, S. Abbo, C.J. Coyne, and K. McPhee. 2023. A hypervariable intron of the STAYGREEN locus provides excellent discrimination among *Pisum fulvum* accessions and reveals evidence for a relatively recent hybridization event with *Pisum sativum*. Frontiers in Plant Science 14: 1233280. doi: 10.3389/fpls.2023.1233280.
- Mugabe D. Frieszell C, Warburton ML, Coyne CJ, Sari H, Uhdre R, Wallace L, Ma Y, Zheng P, McGee RJ, Ganjyal G. 2023. Kabuli chickpea seed quality diversity and preliminary GWAS. Agrosystems, Geosciences, Environment 6(4), p.e20437.
- Amin, M.N., Islam, M.M., Coyne, C.J., Carpenter-Boggs, L. and McGee, R.J., 2023. Spectral indices for characterizing lentil accessions in the dryland of Pacific Northwest. *Genetic Resources and Crop Evolution*, <https://doi.org/10.1007/s10722-023-01614-8>.
- Rahman, M., Porter, L.D., Ma, Y., Coyne, C.J., Zheng, P., Chaves-Cordoba, B., Naidu, R.A. 2022. Resistance in pea (*Pisum sativum*) genetic resources to the pea aphid (*Acyrtosiphon pisum*). Entomologia Experimentalis et Applicata 170(8), pp.755-769.
- Atanda S.A., J. Steffes, Y. Lan, Md. A. Al Bari, J. Kim, M. Morales, J. Johnson, R.A. Saldares, H. Worrall, L.Piche, A. Ross, M.A. Grusak, C. Coyne, R. McGee, J. Rao, N. Bandillo. 2022. Multi-trait genomic prediction improves selection accuracy for enhancing seed mineral concentrations in pea (*Pisum sativum* L.) The Plant Genome e20260. <http://doi.org/10.1002/tpg2.20260>
- Renzi, J.P., J. Brus, C. Coyne, J. Berger, E. von Wettberg, N. Matthew, S. Ureta, F. Hernández, P. Smýkal. 2022. How Could the Use of Crop Wild Relatives in Breeding Increase the Adaptation of Crops to Marginal Environments? Frontiers in Plant Science doi.org/10.3389/fpls.2022.886162
- Das S, Porter LD, Ma Y, Coyne CJ, Chaves-Cordoba B, Naidu RA. 2022. Resistance in Lentil (*Lens culinaris*) Genetic Resources to the Pea Aphid (*Acyrtosiphon pisum*). Entomologia Experimentalis et Applicata 170: 755-769.
- Heineck G., Altendorf K., Coyne C.J., Ma Y., McGee R., Main D., Porter L. 2022. Phenotypic and genetic characterization of the Lentil Single Plant population for resistance to root rot caused by *Fusarium avenaceum*. Phytopathology 112(9), pp.1979-1987.
- Ramsay, L., Koh, C. S, Kagale, S., Gao, D., Kaur, S., Haile, T., Gela, T. S., Chen, L., Cao, Z., Konkin, D. J., Toegelová, H., Doležel, J., Rosen, B. D., Stonehouse, R., Humann, J. L., ... Bett, K. E. Ramsay, Larissa, Chu Shin Koh, Sateesh Kagale, Dongying Gao, ..., Coyne C.J., Rebecca McGee, ..., Kirstin E. Bett. 2021. Genomic rearrangements have consequences for

- introgression breeding as revealed by genome assemblies of wild and cultivated lentil species. Nature Genetics (Submitted) bioRxiv doi.org/10.1101/2021.07.23.453237
- Bari M.A.A, Worral H., Szwiec S., Ma Y., Zheng P., Main D., Coyne C., McGee R., Bandillo N. 2021. Harnessing genetic diversity in the USDA pea (*Pisum sativum* L.) germplasm collection through genomic prediction. Frontiers in Genetics 12, 707754. doi: [10.3389/fgene.2021.707754](https://doi.org/10.3389/fgene.2021.707754)
- Volk G.M., Byrne P.F., **Coyne C.J.**, Flint-Garcia S., Reeves P.A., Richards C. 2021. Integrating genomic and phenomic approaches to support plant genetic resources conservation and use. Plants 10(11), p.2260.
- Rajendran K, **CJ Coyne**, P Zheng, G Saha, D Main, N Amin, Y Ma, T Kisha, KE Bett, RJ McGee, S Kumar. 2021. Genetic diversity and GWAS of an ICARDA lentil (*Lens culinaris* Medik.) reference plus collection using genotyping by sequencing (GBS). Plant Genetic Resources doi.org/10.1017/S147926212100006X.
- Weeden N. F., **C.J. Coyne**, M. Lavin, K. McPhee. 2021. Distinguishing among *Pisum* accessions using a hypervariable intron within Mendel's green/yellow cotyledon gene. Genetic Resources and Crop Evolution 68:2591–2609.
- Agarwal, C., W. Chen, **C.J. Coyne** and G. Vandemark. 2020. Identifying sources of resistance in chickpea to seed rot and seedling damping-off caused by metalaxyl-resistant *Pythium ultimum*. Crop Science (accepted Nov. 25, 2020)
- Wright D., S. Neupane, T. Heidecker, T. Haile, **C.J. Coyne**, R.J. McGee, S. Udupa, F. Henkrar, E. Barilli, D. Rubiales, T. Gioia, R. Mehra, A. Sarker, R. Dhakal, B. Anwar, D. Sarker, A. Vandenberg and K. E. Bett. 2020. Understanding photothermal interactions will help expand production range and increase genetic diversity of lentil (*Lens culinaris* Medik.) Plants, People, Planet DOI: 10.1002/ppp3.10158.
- Coyne C.J.**, S. Kumar, E.B. von Wettberg, E. Marques, J.D. Berger, R.J. Redden, N.T.H. Ellis, J. Brus, L. Zablatzka and P. Smýkal. 2020. Potential and limits of exploitation of crop wild relatives for pea, lentil and chickpea improvement. Legume Science 2020:36. doi.org/10.1002/leg3.36
- Hellwig T. Abbo S., Sherman A., **Coyne C.**, Saranga Y., Lev-Yadun S., Main D., Zheng P., Ophir R. 2020. Limited divergent adaptation despite a substantial environmental cline in wild pea. Molecular Ecology doi.org/10.1111/mec.15633.
- Ma Y., A. Marzougui, **C.J. Coyne**, S. Sankaran, D. Main, L.D. Porter, D. Mugabe, J.A. Smitchger, C. Zhang, M.N. Amin, N. Rasheed, S. Ficklin & R.J. McGee. 2020. Dissecting the genetic architecture of Aphanomyces root rot resistance in lentil by QTL mapping and genome-wide association study. International Journal of Molecular Sciences 21:2129. doi.org/10.3390/ijms21062129.
- Hellwig T., Flor A., Saranga Y., **Coyne C.**, Main D., Sherman A., Ophir R., Abbo S. 2020. Environmental and genetic determinants of amphicarp in *Pisum fulvum*, a wild relative of domesticated pea. Plant Science 298:110566.
- Bauchet G.J., K. Bett, C. Cameron, J.D. Campbell, E.K.S. Cannon, S.B. Cannon, J.W. Carlson, A. Chan, A. Cleary, T.J. Close, D.R. Cook, A.M. Cooksey, **C. Coyne**, S. Dash, R. Dickstein, A. Farmer, D. Fernandez-Baca, S. Hokin, E.S. Jones, Y. Kang, M.J. Monteros, M. Muñoz-Amatriain, K. Mysore, C.I. Pislariu, C. Richards, A. Shi, C. Town, M. Udvardi, E.B. von Wettberg, N.D. Young, P. Zhao. 2019. The future of legume genetic data resources: challenges, opportunities, and priorities. Legume Science 1:e16. DOI: 10.1002/leg3.16
- Coyne C.J.**, L. Porter, G. Boutet, Y. Ma, R.J. McGee, A. Lesné, A. Baranger, M.-L. Pilet-Nayel. 2019. Confirmation of Fusarium root rot resistance QTL *Fsp-Ps 2.1* of pea under controlled conditions. BMC Plant Biology 19:98. doi.org/10.1186/s12870-019-1699-9

- Mugabe D., C.J. Coyne, J. Piakowski, P. Zheng, Y. Ma, R.J. McGee, D. Main, G. Vandemark, H. Zhang, S. Abbo. 2019. QTL analysis of cold tolerance in chickpea. Crop Science 59:573-582. doi: 10.2135/cropsci2018.08.0504.*
- Kreplak J., M.-A. Madoui, P. Cápál, P. Novák, K. Labadie, G. Aubert, P. Bayer, K.G. Kishore, R.A. Symes, D. Main, A. Klein, A. Bérard, I. Fukova, C. Fournier, L. d'Agata, C. Belser, W. Berrabah, H. Šimková, H.T. Lee, A. Kougbeadjo, M. Térézol, C. Huneau, C .J. Turo, N. Mohellibi, P. Neumann, M. Falque, K. Gallardo-Guerrero, R. McGee, B. Tar'an, A. Bendahmane, J.-M. Aury, J. Batley, M.-C. Le Paslier, T.H.N. Ellis, T. Warkentin, **C. J. Coyne**, J. Salse, D. Edwards, J. Lichtenzweig, J. Macas, J. Doležel, P. Wincker, J. Burstin. 2019. The reference genome of the first model for genetics, *Pisum sativum* L. Nature Genetics 51:1411–1422 (ARIS #363738)*
- Marzougui A., C. Zhang, Y. Ma, R.J. McGee, **C.J. Coyne**, D. Main, S. Sankaran. 2019. Advanced imaging for quantitative evaluation of Aphanomyces root rot disease resistance in lentil. Frontiers in Plant Science 10:383. doi: 10.3389/fpls.2019.00383*