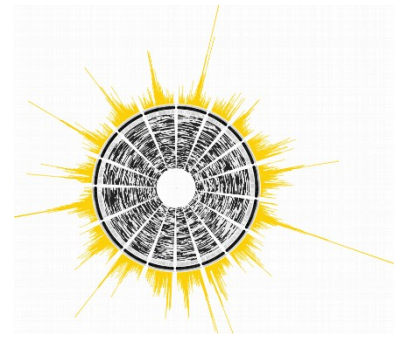


# Nolan C. Kane

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## Positions

**Assistant Professor**, University of Colorado, Boulder, 2013-present.

**Post-doctoral Fellow**, University of British Columbia, Vancouver, Canada, 2008-2013.

## Education

Ph.D. in Evolution, Ecology and Behavior, Indiana University in Bloomington. “Genetics and ecology of adaptation and speciation in *Helianthus*” with Loren H. Rieseberg, 2001-2007.

Sc. B Biology, *magna cum laude*, Brown University, Honors dissertation, 1995-1999.

## Awards and Fellowships

- 2018 Outstanding paper of the year for 2017, Crop Sciences Society, C08 Division, for the paper “Accelerating Silphium Domestication: An Opportunity to Develop New Crop Ideotypes and Breeding Strategies”
- 2013 Most cited paper in *Botany*, “Progress towards a reference genome for sunflower”
- 2008 Sigma Xi, Full Member
- 2002 NSF Evolution, Development and Genomics, IGERT fellowship
- 2001 NSF Graduate Research Fellowship
- 1999 Sigma Xi
- 1999 Phi Beta Kappa

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## RESEARCH

### Grants

- 2018 Refining Genomic Tools for Sclerotinia Resistance and Agronomic Breeding of Sunflower-towards Dissection of the Resistance Phenotype. USDA#58-3060-8-019 \$45,014.00.
- 2017 Using Genomic Selection (GS) to optimize Prediction of *Sclerotinia* Phenotypes for More Efficient Breeding. USDA #58-5442-4-021 A3. co-PI for genomics and bioinformatics, in collaboration with PI- Brent Hulke, USDA-ARS, Fargo, ND. Total budget \$313,883 \$85,565 to CU
- 2016 Using Genomic Selection (GS) to optimize Prediction of *Sclerotinia* Phenotypes for More Efficient Breeding. USDA #58-5442-4-021 A2. co-PI for genomics and bioinformatics, in collaboration with PI- Brent Hulke, USDA-ARS, Fargo, ND. Total budget \$228,318, \$130,800 to CU
- 2016 *Silphium* of the future: developing resources and methods to cross the bridge from wild species to domesticated crop. sole PI. The Land Institute, a non-profit research organization based in Salina, KS. CU: \$250,500
- 2015 Using Genomic Selection (GS) to optimize Prediction of *Sclerotinia* Phenotype

- for More Efficient Breeding. USDA #58-5442-4-021 A1. co-PI for genomics and bioinformatics, in collaboration with PI- Brent Hulke, USDA-ARS. CU: \$53,898
- 2015 NSF Dimensions Award 1542629, Biodiversity Gradients in Obligate Symbiotic Organisms: A Case Study in Lichens in a Global Diversity Hotspot. co-PI for genomics and bioinformatics, in collaboration with PI E. Tripp, CU and co-PI C. McCain, CU, James Lendemer (PI, NYBG) \$1,795,204 total, CU: \$1,035,332
- 2014 Using Genomic Selection (GS) to optimize Prediction of *Sclerotinia* Phenotypes for More Efficient Breeding. USDA #58-5442-4-021. co-PI for bioinformatics and genomics, with PI Brent Hulke, USDA-ARS \$135,336 total, CU: \$61,750
- 2013 Genomic Investigation of Genetic Rescue in Natural Populations. Genomics co-PI, PI – Andrew Martin, CU Boulder) University of Colorado Seed Grant CU: \$40,000
- 2009 Genome Canada, *Genome of Sunflower*. Genome Canada. co-PI, bioinformatics. With PI L. Rieseberg, UBC, co-PI J. Burke, UGA, co-PI P. Vincourt, INRA. \$10,481,589

**Publications**    **h-index: 33**    **i10-index: 57**    **Total citations: 3494**    **Total papers: 89**

Peer reviewed papers 38-72 and non-peer reviewed paper 15-17 were published after joining the faculty at the University of Colorado in August, 2013.

\* indicates CU graduate student author        \*\* indicates CU undergraduate student author

**Peer reviewed publications**

72. Stewart\*, C.R.A., Lendemer, J.C., Keepers\*, K.G., Pogoda\*, C.S., Kane, N.C., McCain, C.M. and Tripp, E.A., 2018. *Lecanora markjohnstonii* (Lecanoraceae, lichenized Ascomycetes), a new sorediate crustose lichen from the southeastern United States. *The Bryologist*, 121:498-513.
71. Hübner, S., Bercovich, N., Todesco, M., Mandel, J.R., Odenheimer, J., Ziegler, E., Lee, J.S., Baute, G.J., Owens, G.L., Grassa, C.J. Ebert, D.P., Ostevik, K.L., Moyers, B.T., Yakimowski, S., Masalia, R.R., Gao, L., Calic, I., Bowers, J.E., **Kane, N.C.**, Swanevelter, D.Z.H., Kuback T., Munos, S., Langlade, N.B., Burke, J.M., and Rieseberg, L.H. 2019. Sunflower pan-genome analysis shows that hybridization altered gene content and disease resistance. *Nature plants* 5:54-62.
70. Reinert, S., Money, K. L., Rockstad, G. B., **Kane, N. C.**, Van Tassel, D. L., and Hulke, B. S. 2018. Two contrasting laboratory methods improve *Silphium integrifolium* Michx. germination rate to agronomically acceptable levels. *Euphytica*, 214: 156.
69. \*Smith, C. C. R., Flaxman, S. M., Scordato, E. S., **Kane, N. C.**, Hund, A. K., Sheta, B. M., & Safran, R. J. 2018. Demographic inference in barn swallows using whole genome data shows signal for bottleneck and subspecies differentiation during the Holocene. *Molecular ecology* 27:4200-4212.
68. \*Smith, C. C. R., \*Tittes, S., \*\*Mendieta, J. P., \*\*Collier-zans, E., Rowe, H. C., Rieseberg, L. H. and Kane, N. C. 2018. Genetics of alternative splicing evolution during sunflower domestication. *Proceedings of the National Academy of Sciences* 115:6768-6773.
67. \*Brigham, L. M., \*Allende, L. M., \*\*Shipley, B. R., \*\*Boyd, K. C., \*\*Higgins, T. J., \*Kelly, N., \*\*Stewart, C. A., \*Keepers, K. G., \*Pogoda, C. S., Lendemr, J. C., Tripp, E. A., and **Kane, N. C.** 2018. Genomic insights into the mitochondria of 11 eastern North American species of *Cladonia*. *Mitochondrial DNA Part B* 3:508-512.

66. \*Pogoda, C. S., \*Keepers, K. G., \*\*Hamsher, S. E. \*\*Stepanek, J. G., and **Kane, N. C.** 2018. Comparative analysis of the mitochondrial genomes of six newly sequenced diatoms reveals group II introns in the barcoding region of *cox1*. *Mitochondrial DNA Part A*, 1-9
65. \*Funk, E.R., \*Adams, A. A., \*\*Spotten, S. M., \*\*Van Hove, R. A., \*\*Whittington, K. T., \*Keepers, K. G., \*Pogoda, C. S., Lendemer, J. C., Tripp, E. A., and **Kane, N. C.** 2018. The complete mitochondrial genomes of five lichenized fungi in the genus *Usnea* (Ascomycota: Parmeliaceae). *Mitochondrial DNA Part B* 3:305-308.
64. \*Pogoda, C.S., \*Keepers, K.G., Lendemer, J.C., **Kane, N.C.** and Tripp, E.A., 2018. Reductions in complexity of mitochondrial genomes in lichen-forming fungi shed light on genome architecture of obligate symbioses. *Molecular ecology* 27:1155-1169.
63. Pisupati, R., Vergara, D., and **Kane, N.C.** 2018. Diversity and evolution of the repetitive genomic content in *Cannabis sativa*. *BMC Genomics* 19: 156.
62. Gao, Q.M., **Kane, N. C.**, Hulke, B.S., Reinert, S., \*Pogoda, C., \*Tittes, S. and Prasifka, J.R. 2018. Genetic architecture of capitate glandular trichome density in florets of domesticated sunflower (*Helianthus annuus* L.). *Frontiers Plant Science* 8:2227.
61. Semenov, G. A., Scordato, E. S., Khaydarov, D. R., \*Smith, C. C., **Kane, N. C.**, and Safran, R. J. 2018. Effects of Assortative Mate Choice on the Genomic and Morphological Structure of a Hybrid Zone Between Two Bird Subspecies. *Molecular Ecology* 26:6430-6444.
60. Scordato, E.S., \*Wilkins, M.R., Semenov, G., Rubtsov, A.S., Kane, N.C. and Safran, R.J., 2018. Genomic variation across two barn swallow hybrid zones reveals traits associated with divergence in sympatry and allopatry. *Molecular Ecology* 26:5676-5691.
59. Vergara, D., Bidwell, L.C., Gaudino, R., Torres, A., Du, G., Ruthenburg, T.C., deCesare, K., Land, D. P., Hutchison, K. E. and **Kane, N. C.** 2017. Compromised external validity: Federally produced *Cannabis* does not reflect legal Markets. *Scientific Reports* 7:46528.
58. Badouin, H., Gouzy, J., Grassa, C.J., Murat, F., Staton, S.E., Cottret, L., Lelandais-Brière, C., Owens, G.L., Carrère, S., Mayjonade, B., Legrand, L., Gill, N., **Kane, N. C.**, Bowers, J. E., Hubner, S., Bellec, A., Bérard, A., Bergès, H., Blanchet, N., Boniface, M., Brunel, D., Catrice, O., Chaidir, N., Claudel, C., Donnadieu, C., Faraut, T., Fievet, G., Helmstetter, N., King, M., Knapp, S. J. Lai, Z., Le Paslier, M., Lippi, Y., Lorenzon, L., Mandel, J. R., Marage, G., Marchand, G., Marquand, E., Bret-Mestries, E., Morien, E., Nambeesan, S., Nguyen, T., Pegot-Espagnet, P., Pouilly, N., Raftis, F., Sallet, E., Schiex, T., Thomas, J., Vandecasteele, C., Varès, D., Vear, F., Vautrin, S., Crespi, M., Mangin, B., Burke, J. M., Salse, J., Muñoz, S., Vincourt, P., Rieseberg L. H., and Langlade, N. B. 2017. The sunflower genome provides insights into oil metabolism, flowering and Asterid evolution. *Nature* 546:148-152.
57. Van Tassel, D.L., Albrecht, K.A., Bever, J.D., Boe, A.A., Brandvain, Y., Crews, T.E., Gansberger, M., Gerstberger, P., González-Paleo, L., Hulke, B.S. and **Kane, N.C.** 2017. Accelerating domestication: An opportunity to develop new crop ideotypes and breeding strategies informed by multiple disciplines. *Crop Science*. 57:1274-1284.
56. Leff\*, J. W., Lynch\*, R. C., Kane, N. C., and Fierer, N. 2017. Plant domestication and the assembly of bacterial and fungal communities associated with strains of the common sunflower, *Helianthus annuus*. *New Phytologist* 214:412-423.
55. Vergara, D., Baker\*\*, H., Clancy\*\*, K., Keepers\* K. G., Mendieta\*\*, J. P., Pauli\*\*, C. S., Tittes\*, S. B., White\*, K. H., and **Kane, N. C.** 2017. Genetic and Genomic Tools for *Cannabis*. *Critical Reviews in Plant Sciences* 35:364-377.

54. Lynch\*, R.C., Vergara, D., Tittes\*, S., White\*, K., Schwartz, C.J., Gibbs, M.J., Ruthenburg, T.C., Land, D.P. and **Kane, N.C.** 2017. Genomic and Chemical Diversity in Cannabis. *Critical Reviews in Plant Sciences* 35:349-363.
53. Grassa, C. J., Ebert, D. P., **Kane, N. C.**, and Rieseberg, L. H. 2016. Complete mitochondrial genome sequence of sunflower (*Helianthus annuus L.*). *Genome Announcements* 4:e00981-16.
52. Safran, R. J., Scordato, E. S. C., Hubbard\*, J. K., Jenkins, B. R., Albrecht, T., Flaxman, S. M., Pap, P., Shen, S., Chan, F., Parchman, T., and **Kane, N. C.** 2016. Genome-wide differentiation in closely related populations: the roles of selection and geographic isolation. *Molecular Ecology* 25: 3865–3883. (Cover photo)
51. Franks, S. J., **Kane, N. C.**, O'Hara, N. B., Tittes\*, S., and Rest, J. S. 2016. Rapid genome-wide evolution in *Brassica rapa* populations following drought revealed by sequencing of ancestral and descendant gene pools. *Molecular ecology* 25:3622-3631. (From the cover)
50. Keepers\*, K., Martin, A. P., and **Kane, N. C.** 2016. The complete mitochondrial genome of the Warm Springs pupfish, *Cyprinodon nevadensis pectoralis*. *Mitochondrial DNA* 1-2.
49. Vergara, D., White\*, K. H., Keepers\*, K. G., and **Kane, N. C.** 2016. The complete chloroplast genomes of *Cannabis sativa* and *Humulus lupulus*. *Mitochondrial DNA* 1-2.
48. Kantar, M. B., Sosa, C. C., Khoury, C. K, Castañeda-Álvarez, N. P., and **Kane, N. C.** 2015. Ecogeography and utility to plant breeding of the crop wild relatives of sunflower (*Helianthus annuus L.*). *Frontiers in plant science* 6:841.
47. Delmore, K. E., Hübner, S., **Kane N. C.**, Schuster, R., Andrew, R. L., Câmara, F., Guigó, R., Irwin, D. E. 2015. Genomic analysis of a migratory divide reveals candidate genes for migration and implicates selective sweeps in generating islands of differentiation. *Molecular Ecology* 24:1873-1888.
46. Baute, G. J., **Kane, N. C.**, Grassa, C. J., Lai, Z., Rieseberg, L. H. 2015. Genome scans reveal candidate domestication and improvement genes in cultivated sunflower, as well as post-domestication introgression with wild relatives. *New Phytologist* 206:830-838.
45. Whitney, K. D., Broman, K. W., **Kane, N. C.**, Hovick, S. M., Randell, R. A., Rieseberg, L. H. 2015. QTL mapping identifies candidate alleles involved in adaptive introgression and range expansion in a wild sunflower. *Molecular ecology* 24:2194-2211.
44. Lynch\*, R.C., Darcy\*, J.L., **Kane, N. C.**, Nemergut, D.R., and Schmidt, S.K. 2014. Metagenomic evidence for metabolism of trace atmospheric gases by high-elevation desert Actinobacteria. *Frontiers in Microbiology* 5:698.
43. Tittes\*, S., and **Kane, N. C.** 2014. The genomics of adaptation, divergence and speciation: a congealing theory. *Molecular ecology* 23:3938-3940.
42. Marchand, G., Huynh-Thu, V. A., **Kane, N. C.**, Arribat, S., Varès, D., Rengel, D., Balzergue, S., Rieseberg, L. H., Vincourt, P., Geurts, P., Vignes, M., Langlade, N. B. 2014. Bridging physiological and evolutionary time scales in a gene regulatory network. *New Phytologist* 203:685–696.
41. Gill, N., Buti, M., **Kane, N. C.**, Bellec, A., Helmstetter, N., Berges, H., Rieseberg, L. H. 2014. Sequence-Based Analysis of Structural Organization and Composition of the Cultivated Sunflower (*Helianthus annuus L.*) *Genome Biology* 3:295-319.



40. Bock, D. G., **Kane, N. C.**, Ebert, D. P, Rieseberg, L. H. 2014. Genome skimming reveals the origin of the Jerusalem Artichoke tuber crop species: neither from Jerusalem nor an Artichoke. *New Phytologist* 201:1021-1030.
39. Hodgins, K., Lai, Z., Oliveira, L., Still, D. W., Scascitelli, M., Barker, M., **Kane, N. C.**, Dempewolf, H., Kozik, A., Kesseli, R. V., Burke, J. M., Michelmore, R. W., Rieseberg, L. H. 2014. Genomics of Compositae crops: Reference transcriptome assemblies, and evidence of hybridization with wild relatives. *Molecular Ecology Resources* 14:166-177.
38. Natalia, L., Cossua, R. M., Barghinia, E., Giorania, T., Butia, M., Mascagnia, F., Gill, N., **Kane, N. C.**, Rieseberg, L., Cavallini, A. 2013. The repetitive component of the sunflower genome: comparative analyses using different approaches for assembling NGS reads. *BMC Genomics* 14: 686.
37. **Kane, N. C.**, Marek, L., Burke, J. M., Seiler G. and Rieseberg, L. H. 2013. Sunflower genetic, genomic and ecological resources. *Molecular Ecology Resources* 13:10-20. (Cover illustration)
36. Yang, J. Y., Scascitelli, M., Motilal, L. A., Sveinsson, S., Engels, J. M. M., **Kane, N. C.**, Dempewolf, H., Zhang, D., Maharaj, K., and Cronk, QCB. 2013. Complex origin of Trinitario-type *Theobroma cacao* (Malvaceae) from Trinidad and Tobago revealed using plastid genomics. *Tree Genetics and Genomes* 9:829-840.
35. Vines, T. H., Andrew, R. L., Bock, D. G., Franklin, M.T., Gilbert, K. J., **Kane, N.C.**, Kleynhans, E., Moore, J-S., Moyers, B. T. Renaut, S., Rennison, D. J., Veen, T. and Yeaman, S. 2013. Mandated archiving greatly improves access to research data. *FASEB* 27:1304-1308.
34. Bell, G. D. B., **Kane, N.C.**, Rieseberg, L. H., and Adams, K.L. 2013. RNA-seq analysis of allele-specific expression, hybrid effects, and regulatory divergence in hybrids compared with their parents from natural populations. *Genome Biology and Evolution* 5(7):1309-23.
33. Renaut, S., Grassa, C. J., Yeaman, S., Moyers, B. T., Lai, Z., **Kane, N. C.**, Bowers, J. E., Burke, J. M. and Rieseberg, L. H. 2013. Number and size of genomic islands of differentiation do not vary with geography of speciation. *Nature Communications* 4:1827.
32. Sveinsson, S., Gill, N, **Kane, N. C.**, and Cronk, Q. 2013. Transposon fingerprinting using low coverage whole genome shotgun sequencing in Cacao (*Theobroma cacao* L.) and related species. *BMC Genomics* 14:502.
31. Andrew, R. L., Bernatchez, L., Bonin, A., Carstens, B. C., Emerson, B. C., Garant, D., Giraud, T., **Kane, N. C.**, Rogers, S. M., Slate, J., Smith, H., Sork, V. L., Stone, G. N., Vines, T. H., Waits, L., Widmer, A., Rieseberg, L. H. 2013. A roadmap for molecular ecology. *Molecular Ecology* 22:2605-2626.
30. Andrew, R. L., **Kane, N. C.**, Baute, G. J., Grassa, C. J. and Rieseberg, L. H. 2013. Recent non-hybrid origin of sunflower ecotypes in a novel habitat. *Molecular Ecology*. 22:799-813.
29. Renaut, S., Grassa, C., Moyers, B., **Kane, N. C.** and Rieseberg, L.H. 2012. The population genomics of sunflowers and genomic determinants of protein evolution revealed by RNAseq. *Biology* 1: 575-596.
28. Koziol, L., Rieseberg, L. H., **Kane, N. C.**, and Bever, J. D. 2012. Reduced drought tolerance results from trade-off against resource allocation towards growth and fecundity during domestication and the evolution of weediness. *Evolution* 66(12):3803-14.



27. Rieseberg, L. H., Blackman, B. K., Scascitelli, M., and **Kane, N. C.** 2012. On the Origin of Sunflowers: Fossils, Genes, Genomes, and Hybridization. Proceedings of 18th International Sunflower Conference, 2012, Mar del Plata & Balcarce, Argentina.
26. Staton, S. E., Bakken, B. H., Ungerer, M. C., **Kane, N. C.**, Knapp, S. J., Rieseberg, L. H. and Burke, J. M. 2012. The sunflower (*Helianthus annuus* L.) genome reflects a history of biased accumulation of transposable elements. *The Plant Journal* 72:142-153.
25. Gilbert, K. J., Andrew, R. L., Bock, D. G., Franklin, M. T., **Kane, N. C.**, Moore, J-S., Moyers, B. T. Renaut, S., Rennison, D. J., Veen, T. and Vines, T. H. 2012. Recommendations for utilizing and reporting population genetic analyses: the reproducibility of genetic clustering using the program STRUCTURE. *Molecular Ecology* 21: 4925–4930.
24. Lai, Z., Zou, Y., **Kane, N. C.**, Choi, J., Wang, M. and Rieseberg, L. H. 2012. Preparation of normalized cDNA libraries for 454 Titanium transcriptome sequencing. *Methods in Molecular Biology* 888:119-33.
23. **Kane, N. C.**, Sveinsoon, S., Dempewolf, H., Yang, J. Y., Zhang, D., Engels, J. M. M. and Cronk, Q. 2012. Ultra-barcoding in cacao using whole chloroplast genomes and nuclear ribosomal DNA. *American Journal of Botany* 99:320-329.
22. Lai, Z., **Kane, N.C.**, Kozik, A., Hodgins, K. A., Dlugosch, K. M., Barker, M. S. Matvienko, M., Yu, Q., Turner, K. G., Pearl, S. A., Bell, G. D. B., Zou, Y., Grassa, C. Guggisberg, A., Adams, K. L., Anderson, J. V., Horvath, D. P., Kesseli, R. V., Burke, J. M., Michelmore, R. W., Rieseberg, L. H. 2012. Genomics of Compositae weeds: EST libraries, microarray, and evidence of introgression. *American Journal of Botany* 99:209-218.
21. Blackman, B. K., Scascitelli, M., **Kane, N. C.**, Luton, H., Bye, R. A., Lentz, D. L. and Rieseberg, L. 2011. H. Sunflower domestication alleles support single domestication center in eastern North America. *Proceedings of the National Academy of Sciences*, 34:14360-14365.
20. **Kane, N. C.**, Zhan, S., Barker, M. S. and Rieseberg, L. H. 2011. Molecular evolution across the Asteraceae: micro- and macroevolutionary processes. *Molecular Biology and Evolution*, 28:3225–3235.
19. Mayrose, M., **Kane, N. C.**, Mayrose I. and Rieseberg, L. H. 2011. Increased vigour in sunflower correlates with reduced defenses and altered gene expression during biotic and abiotic stress responses. *Molecular Ecology* 20:4683-4694.
18. **Kane, N. C.**, Gill, N., King, M.G. , Bowers, J.E., Berges, H., Gouzy, J., Bachlava, E., Langlade, N.B., Lai, Z., Stewart, M., Burke, J.M., Vincourt, P., Knapp, S.J. and Rieseberg, L.H. 2011. Progress towards a reference genome for sunflower. *Botany* 89:429-437. Most cited paper in *Botany* from 2011.
17. Strasburg, J. L., **Kane, N. C.**, Raduski, A. R., Bonin, A., Kozik, A., Michelmore, R. and Rieseberg, L. H. 2011. Effective population size is strongly correlated with rates of adaptive divergence among annual sunflowers. *Molecular Biology and Evolution* 28:1569-1580. Faculty of 1000, <http://f1000.com/10407956><http://f1000.com/10407956>
16. Dempewolf, H., **Kane N. C.** Ostvik K. L., Geleta, M., Barker, M. S., Lai, Z., Stewart, M. L., Bekele, E., Engels, J. M. M., Cronk, Q. C. B., and Rieseberg, L. H. 2010. Establishing genomic tools and resources for *Guizotia abyssinica* (L.f.) Cass. – the development of a library of expressed sequence tags, microsatellite loci and the sequencing of its chloroplast genome. *Molecular Ecology Resources* 10:1048-1058.

15. Molecular Ecology Resources Primer Development Consortium. 2010. Permanent Genetic Resources added to the Molecular Ecology Resources Database 1 February 2010–31 March 2010. *Molecular Ecology Resources* 10:751-754.
14. Barker, M. S., Dlugosch, K. M., Dinh, L., Challa, S., **Kane, N. C.**, King, M. G. and Rieseberg, L. H. 2010. EvoPipes.net: Bioinformatic pipelines and forums for ecological and evolutionary genomics. *Evolutionary Bioinformatics* 6:143-149.
13. **Kane, N. C.**, King, M. G., Barker, M. S., Raduski, A., Karrenberg, S., Yatabe, Y., Knapp, S. J. and Rieseberg, L. H. 2009. Comparative genomic and population genetic analyses indicate highly porous genomes and high levels of gene flow between divergent *Helianthus* species. *Evolution* 63:2061-2075.
12. Barker, M. S., **Kane, N. C.**, Kozik, A., Michelmore, R. W., Knapp, S. J., Kesseli, R. K., Still, D. W., Bradford, K. J., and Rieseberg, L. H. 2008. Multiple paleopolyploidizations during the evolution of the Compositae reveal parallel patterns of duplicate gene retention after millions of years. *Molecular Biology and Evolution*. 25:2445-2455.
11. **Kane, N. C.** and Cronk, Q. 2008. Botany Without Borders, Barcoding in focus. *Molecular Ecology* 17:5175-5176.
10. Lai, Z. **Kane, N. C.**, and Rieseberg, L. H. 2008. Natural variation in gene expression between wild and weedy populations of *Helianthus annuus*. *Genetics* 179:1881-1890.
9. **Kane, N. C.** and Rieseberg, L. H. 2008. Genetics and the evolution of weediness in *Helianthus annuus*. *Molecular Ecology* 17: 384-394.
8. Yatabe, Y., **Kane, N. C.** Scotti-Saintagne, C. and Rieseberg, L. H. 2007. Rampant gene exchange across a strong reproductive barrier between the annual sunflowers, *Helianthus annuus* and *H. petiolaris*. *Genetics* 175: 1883-1893.
7. **Kane, N. C.** and Rieseberg, L. H. 2007. Selective sweeps reveal candidate genes for adaptation to drought and salt tolerance in common sunflower, *Helianthus annuus*. *Genetics* 175:1823-1824.
6. Ludwig, F., Rosenthal, D. M., Johnston, J. A., **Kane, N.**, Gross, B. L., Lexer, C., Dudley, S. A., Rieseberg, L. H. and Donovan, L. A. 2004. Selection on leaf ecophysiological traits in a desert hybrid *Helianthus* species and early generation hybrids. *Evolution* 58:2682-2692.
5. Weinig, C., Gravuer, K., **Kane, N. C.** and J. Schmitt. 2004. Testing adaptive plasticity to UV: costs and benefits of stem elongation and light-induced phenolics. *Evolution* 58:2645-2656.
4. Gross, B. L. , **Kane, N. C.**, Lexer, C. Ludwig, F., Rosenthal, D. M., Donovan, L. A. and Rieseberg, L. H. 2004. Reconstructing the origin of *Helianthus deserticola*: Survival and selection on the desert floor. *The American Naturalist* 164:145-156.
3. Huber, H., **Kane, N. C.**, Heschel, M. S. von Wettberg, E. J. Banta, J., Leuck, A. and Schmitt, J. 2004. Frequency and microenvironmental pattern of selection on plastic shade-avoidance traits in a natural population of *Impatiens capensis*. *The American Naturalist* 163:548-563.
2. Weinig C., Dorn L.A., **Kane N.C.**, German Z.M., Hahdorsdottir S.S., Ungerer M.C., Toyonaga Y., Mackay T.F.C., Purugganan M.D., Schmitt J. 2003. Heterogeneous selection at specific loci in natural environments in *Arabidopsis thaliana*. *Genetics* 165:321-329.
1. Weinig, C., Ungerer, M. C., Dorn, L. A., **Kane, N. C.**, Toyonaga, Y, Halldorsdottier, S. S., Mackay, T. F. C., Purugganan, M. D. and Schmitt, J. 2002. Novel loci control variation in reproductive timing in *Arabidopsis thaliana* in natural environments. *Genetics* 162:1875–

1884.

***Non-peer-reviewed scientific publications***

17. Rieseberg, L., Geraldes, A., Chambers, K. and **Kane, N.** 2018. Editorial 2018. *Molecular Ecology*, 27:1-34.
16. Gray, H. B., Clancy\*\*, K., Clarke, R. C deCesare, K., Fike, J., Gibbs, M. J., Grotenhermen, F., **Kane, N. C.**, Keepers\*, K. G., Land, D., Lynch\*, R. C., Mendieta\*\*, J. P., Merlin, M., Müller-Vahl, K., Pauli\*\*, C. S., Pearson, B. J., Rhan, B., Ruthenberg, T. C., Schwartz, C. J., Tittes\*, S. B., Vergara, D., White\*, K. H., Trigliano, R. N. 2017. Current and future needs and applications for *Cannabis*. *Critical Reviews in Plant Sciences*. 35:425-426.
15. Rieseberg, L., Vines, T. and **Kane, N.** 2014. Editorial 2014. *Molecular Ecology* 23:1-15.
14. Rieseberg, L., Vines, T. and **Kane, N.** 2013. Editorial 2013. *Molecular Ecology*, 22:1-14.
13. Rieseberg, L., Vines, T. and **Kane, N.** 2012. Editorial 2012. *Molecular Ecology* 21:1-22.
12. Rieseberg, L., Vines, T. and **Kane, N.** 2011. Editorial – 20 years of Molecular Ecology. *Molecular Ecology* 20:1-21.
11. Geraldes, A. and **Kane, N. C.** 2010. Pushing north one bottleneck at a time: site frequency spectra tell the history of Sitka spruce. *Molecular Ecology* 19:3837–3839.
10. Moyers, B. and **Kane, N. C.** 2010. Genetics of adaptation during colonization. *Molecular Ecology* 19:1270-1272.
9. Rieseberg, L., Vines, T. and **Kane, N.** 2010. 2010 Editorial and Retrospective. *Molecular Ecology* 19:1-22.10.
8. Hudson, M. E., and **Kane, N. C.** 2009. Plant genomes do a balancing act. *Molecular Ecology* 18:2743-2745.
7. **Kane, N. C.** and King, M. 2009. Using parentage analysis to examine gene flow and spatial genetic structure. *Molecular Ecology*. 18:1551-1552.
6. Rieseberg, L., Vines, T. and **Kane, N.** 2009. 2009 Editorial and Retrospective. *Molecular Ecology* 18: 1-13.
5. **Kane, N. C.** and Baack, E. J. 2007. Hybridization and the origin of weedy rice. *Molecular Ecology* 16: 4423-4425.
4. Ortiz-Barrientos, D. and **Kane, N. C.** 2007. The genetics of speciation. *Molecular Ecology* 16: 2852-2854.
3. **Kane, N. C.**, Gross, B. L., and Rieseberg, L. H. 2006. Transgressive segregation (plant breeding). pp. 331-334 in “McGraw-Hill Yearbook of Science & Technology.” McGraw-Hill, New York.
2. **Kane, N. C.** and Rieseberg, L. H. 2005. Maize genetics: The treasure of the Sierra Madre. *Current Biology* 15: R137-R139.
1. **Kane, N. C.**, Gross, B. L., and Rieseberg, L. H. 2002. Book review: Hey, J. Genes, categories, and species - The evolution and cognitive cause of the species problem. *Plant Systematics and Evolution* 234:237-239.

**Presentations**



### ***Invited talks***

39. **Kane, N. C.** 2017. *Cannabis* Used in Research Does Not Reflect Legal Markets. CannMed 2017 conference, Harvard Medical School, Boston, Massachusetts.
38. **Kane, N. C.** 2017. *Cannabis* genetics, evolution and phytochemistry. Departmental Seminar. University of Northern Colorado, Greeley, Colorado.
37. **Kane, N. C.** 2017. *Cannabis* genetics, evolution and phytochemistry. Boulder Cannabis Industry Meetup, Boulder, Colorado.
36. **Kane, N. C.** 2017. Genetic Regulation and Evolution of Alternative Splicing Changes during Sunflower Domestication. Plant and Animal Genome XXIII Conference, San Diego, California.
35. **Kane, N. C.** 2016. Alternative splicing evolution during sunflower domestication. Colorado State University, Ft. Collins, Colorado.
34. **Kane, N. C.** 2015. The evolutionary impact of hybridization. University of Wyoming, Laramie, Wyoming.
33. **Kane, N. C.** 2015. Disease resistance and introgression. National Sclerotinia Initiative, St. Paul, Minnesota.
32. **Kane, N. C.** 2015. Genomic diversity of *Cannabis*. Plant and Animal Genome XXIII Conference, San Diego, California.
31. **Kane, N. C.** 2014. The origins of cultivated *Cannabis*. Cannabis Grand Cru. Aspen, CO.
30. **Kane, N. C.** 2014. The evolutionary importance of hybridization. University of Arizona, Tucson, Arizona.
29. O'Hara, N.B., Franks S.J., **Kane, N.C.**, Tittes, S., Amidi-Abraham, G., Rest, J.S. Genomic signatures of rapid evolution in drought response and disease susceptibility in an annual plant, *Brassica rapa*. Society for Molecular Biology and Evolution (SMBE), Puerto Rico.
28. **Kane, N. C.** 2014. Population genomic approaches shed light on the hybrid origins of modern sunflowers. 2<sup>nd</sup> Plant Genomics Congress, USA, St. Louis, Missouri.
27. **Kane, N. C.** 2013. The role of hybridization during domestication and feralization. SMBE meeting, Chicago, Illinois.
26. **Kane, N. C.** 2013. The evolutionary importance of hybridization. Colorado State University, Fort Collins, Colorado.
25. **Kane, N. C.** 2013. The evolutionary importance of hybridization. University of Minnesota, St. Paul, Minnesota.
25. **Kane, N. C.** 2013. The evolutionary importance of hybridization. University of Colorado, Boulder, Colorado.
24. **Kane, N. C.** 2013. The evolutionary importance of hybridization. University of Nevada, Reno, Nevada.
23. **Kane, N. C.** 2013. Hybridization and introgression associated with range expansion and invasion in sunflowers. Plant and Animal Genome XXI Conference, San Diego, California.
22. **Kane, N. C.** 2013. Sunflower genome update. Plant and Animal Genome XXI Conference, San Diego, California.
21. **Kane, N. C.** 2012. Hybridization and the origins of novelty. Iowa State University, Ames, Iowa.

20. **Kane, N. C.** 2012. Hybridization and the origins of novelty. Washington State University, Pullman, Washington.
19. **Kane, N. C.** 2012. Hybridization and the origin of novelty. University of Arkansas, Fayetteville, Arkansas.
18. **Kane, N. C.** 2012. Hybrid origins of modern chocolate, cultivated sunflowers and several invasive plants. University of Connecticut, Storrs, Connecticut.
17. **Kane, N. C.**, Grassa, C. J., Gill, N., Bowers, J., Berges, H., Gouzy, J., King, M. G., Bachlava, E., Langlade, N., Burke, J. M., Vincourt, P., Knapp, S. J., and Rieseberg, L. H. 2012. The sunflower genome and its evolution. Plant and Animal Genome XX. San Diego, California.
16. **Kane, N. C.** 2011. Crop-wild hybridization is associated with evolution of weedy sunflowers. ESA, Austin, Texas.
15. **Kane, N. C.**, Grassa, C., Andrew, R., Renaut, S., Rieseberg, L. H. 2011. Genetic underpinnings of divergence and adaptation in *Helianthus*. Symposium talk, Botany 2011, St. Louis, MO.
14. **Kane, N. C.**, King, M. G., Rieseberg, L. H., Andrew, R. 2011. Gene flow, hybridization and adaptation in wild, domesticated, and weedy sunflowers. Symposium, International Botanical Congress, Melbourne, Australia.
13. Rieseberg, L. H., **Kane, N. C.**, Andrew, R., Renaut, S., Scasitelli, M., Strasburg, J. 2011. The nature of species boundaries in plants. Keynote symposium, International Botanical Congress, Melbourne, Australia.
12. **Kane, N. C.**, Grassa, C., Andrews, R. and Rieseberg, L. H. 2011. RAD sequencing in sunflowers: Genomics, evolution and ecology. 2011 RAD Sequencing symposium. Portland, Oregon.
11. **Kane, N. C.** 2011. Next-gen sequencing illuminates the nature of species and speciation. Boyce Thompson Institute, Ithaca, New York.
10. **Kane, N. C.** 2011. Evolutionary genomics of adaptation and speciation in sunflowers. University of Vermont, Burlington, Vermont.
9. Rieseberg, L. H., **Kane, N. C.**, 2011. Physical mapping and sequencing of the sunflower genome. Oral presentation. Plant and Animal Genome XIX, San Diego, California.
8. Rieseberg, L. H., **Kane, N. C.**, 2011. The nature of species boundaries in plants. Plant and Animal Genome XIX, San Diego, California.
7. **Kane, N. C.** 2010. The sunflower genome and related genomic resources. J. Craig Venter Institute, Rockville, Maryland.
6. **Kane, N. C.** 2010. Sequencing the sunflower genome. Oral presentation. Plant and Animal Genome XVIII, San Diego, California.
5. Dlugosch, K. M., Lai, Z., **Kane, N. C.**, Mayrose, M. and Rieseberg, L. H. 2009. The evolution of genomic responses to stress in Compositae weeds. International Plant Molecular Biology Congress, St. Louis.
4. **Kane, N. C.** Barker, M. S. and Rieseberg, L. H. 2008. Molecular evolution across the Asteraceae: micro- and macroevolutionary processes. Plant and Animal Genome XVI, San Diego, California.
3. **Kane, N. C.** and Rieseberg, L. H. 2006. The genetics of drought tolerance, salt tolerance, and weediness in *Helianthus annuus*. Plant and Animal Genome XIV, San Diego, California.

2. **Kane, N. C.** 2006. Selective sweeps, gene flow and species boundaries in *Helianthus annuus*. AGA Symposium, Speciation Genetics, Vancouver, British Columbia.
1. **Kane, N. C.** and Brunick, B. 2005. Analysis of phenotypic variation in sunflowers. Compositae genome meetings, Athens, Georgia.

### ***Contributed talks and posters***

28. Safran, R., Scordato, E. and **Kane, N. C.** 2016. Divergent phenotypes and their influence on genome-wide divergence in barn swallows. Evolution 2016, Austin, TX.
27. Scordato, E., Safran, R., **Kane, N. C.** 2016. Genomic basis of hybridization in two barn swallow contact zones. Spotlight session talk. Evolution 2016, Austin, TX.
26. Franks, S.J., **Kane, N. C.** 2016. Selection causes rapid genome-wide evolution in *Brassica rapa* following a climatic change. Talk. Evolution 2016, Austin, TX.
25. Goebel, A., **Kane, N. C.**, and Tittes, S. 2016. Studying adaptation of sunflowers in Great Sand Dunes National Park using genotyping-by-sequencing. Poster. Evolution 2016, Austin, TX.
24. Keepers, K., **Kane, N. C.**, and Martin, A. 2016. A Rescue in the Desert: Fitness in Inbred Fish Recovered After Admixture. Poster. Evolution 2016, Austin, TX.
23. Collier-Zans, E. and **Kane, N. C.** 2016. Recombination in the chloroplasts of the Andean subtribe Iochrominae (Solanaceae). Poster. Evolution 2016, Austin, TX.
22. Franks, S.J., **Kane, N. C.**, 2014. Genome-wide analysis reveals rapid genetic changes in natural *Brassica rapa* populations following drought. Evolution, Raleigh, North Carolina, June 23.
21. Grassa, C. J., Ebert, D. P., **Kane, N. C.** and Rieseberg, L. H. 2013. Cytoplasmic genomes of sunflowers: Assembly, evolution, structure, and function. Poster P0442. Plant and Animal Genome XXI. San Diego, California.
20. Baute, G. J., **Kane, N. C.**, Grassa, C. J., and Rieseberg, L. H. 2013. The genetics of domestication and improvement in sunflowers (*Helianthus annuus*). Poster P0444. Plant and Animal Genome XXI. San Diego, California.
19. Gill, N., **Kane, N. C.**, Berges, H., Burke, J. M., Vincourt, P., Knapp, S. J., and Rieseberg, L. H. 2012. A sequence-based physical map of the sunflower (*Helianthus annuus* L.) genome. Poster P0700. Plant and Animal Genome XX. San Diego, California.
18. Grassa, C. J., **Kane, N. C.**, Bowers, J., Knapp, S. J., Burke, J. M., and Rieseberg, L. H. 2012. Ultra- high density genetic map of sunflower. Poster P0701. Plant and Animal Genome XX. San Diego, California.
17. Andrew, R. L., **Kane, N. C.**, Grassa, C. J., Baute, G. J., and Rieseberg, L. H. 2012. Genome-wide patterns of divergence between sunflower ecotypes. Poster P0072. Plant and Animal Genome XX. San Diego, California.
16. **Kane, N. C.**, Whitney, K., Bonin, A. and Rieseberg, L. H. 2010. Genomics of invasiveness in *Helianthus*. Oral presentation. Evolution 2010, Portland, Oregon.
15. **Kane, N. C.** and Rieseberg, L. H. 2009. Genes under selection during domestication and adaptation in *Helianthus*. Oral presentation. Evolution 2009, Moscow, Idaho.
14. **Kane, N. C.** 2008. Chloroplast genome sequencing using Solexa and SOLiD. Oral presentation. Botany 2008, Vancouver, BC.

13. **Kane, N. C.**, Barker, M. S. and Rieseberg, L. H. 2007. Molecular evolution across the Asteraceae: micro- and macroevolutionary processes. Oral presentation. ESEB meeting, Uppsala, Sweden.
12. Barker, M. S., **Kane, N. C.** and Rieseberg, L. H. 2007. Widespread paleopolyploidy across the Viridiplantae. Poster presentation. AGA meeting, Bloomington, Indiana.
11. Barker, M. S., **Kane, N. C.** and Rieseberg, L. H. 2007. Widespread paleopolyploidy across the Viridiplantae. Oral presentation. BSA meetings, Chicago, Illinois.
10. Barker, M. S., **Kane, N. C.** and Rieseberg, L. H. 2007. Widespread paleopolyploidy across the Viridiplantae. Poster presentation. MBE meetings, Halifax, Canada.
9. **Kane, N. C.** 2007. The evolution of agricultural weed ecotypes of *H. annuus*. Oral presentation. UBC, Vancouver, Canada.
8. **Kane, N. C.** and Rieseberg, L. H. 2005. Selective sweeps reveal candidate genes for adaptation to drought and salt tolerance in *Helianthus annuus*. Oral presentation. Evolution 2005. Fairbanks, Alaska.
7. **Kane, N. C.** 2004. Selective sweeps, linkage disequilibrium, and speciation. Poster presentation. Evolution of Gene Regulation Minisymposium, Eugene, Oregon.
6. **Kane, N. C.** 2004. Documenting selective sweeps in wild sunflowers: genetics of adaptation. Oral presentation. IGERT seminar series, Indiana University, Bloomington, Indiana.
5. **Kane, N. C.**, Gross, B. L. and Rieseberg, L. H. 2003. Reconstructing the hybrid origins of *Helianthus deserticola*: selection experiments on the desert floor. Oral presentation. Evolution 2003, Chico, California.
4. **Kane, N. C.** 2002. Molecular evolution of genes in pathways. Poster presentation. Mini-symposium on the Microevolution of Development, Indiana University, Bloomington, Indiana.
3. **Kane, N. C.** 2001. Genetics of speciation and divergence in *Helianthus*. Poster presentation. Evolution of gene networks 2001 conference, Eugene, Oregon.
2. **Kane, N. C.**, Dorn, L. A. and Schmitt, J. 2000. Novel phenotypes for novel environments: responses to seasonal cues in *Arabidopsis* recombinant inbreds. Oral presentation. Evolution 2000, Bloomington, Indiana.
1. **Kane, N. C.**, Dorn, L. A. and Schmitt, J. 1999. Maternal environmental effects in *Arabidopsis* recombinant inbreds. Poster presentation. XVI International Botanical Congress, St. Louis, Missouri.

### **Selected popular press coverage**

Fall 2016. *Boulder Magazine* "A map into uncharted territory."

February 17, 2016 *Colorado Arts and Sciences Magazine* "Greenhouses grow better students, biologists say."

June 2015. *National Geographic* "Science Seeks to Unlock Marijuana's Secrets" (Cover)

February 6, 2014. *Boulder Weekly* "Professor launches plan to map Cannabis genome."

February 10, 2014. *Daily Camera* "CU-Boulder prof pursues deepest-ever exploration of the Cannabis genome." Front page, two photos, Sunday edition.

January 14, 2010. *Science Daily* "Sunflower genome holds the promise of sustainable agriculture".

January 13, 2010. *Vancouver Sun* "Scientists seek sunflowers' secrets: Cracking the plant's DNA

code could lead to food, energy improvements.”

## TEACHING

### **Undergraduate courses:**

*Evolution*, EBIO 3080-001, University of Colorado, Spring 2014, Spring 2015, Spring 2017.

*Genomics*, EBIO 4460-020, University of Colorado, Fall 2013-2017.

*Plant Evolution* University of British Columbia, 2009.

### **Graduate courses**

*Evolutionary Genomics*, EBIO 6300, University of Colorado, Spring 2015, Spring 2017.

*Comparative Genomics*, EBIO 6210, University of Colorado, Spring 2014.

*Genomics*, EBIO 5460-001, University of Colorado, Fall 2013-2016.

### **Short courses**

Workshop *Next generation sequencing data in ecology and evolution*, Ottawa, 2012.

# MENTORING

## **Postdoctoral mentoring**

Daniela Vergara *Evolutionary genomics of Cannabis* (2014-)  
Qingming Gao *Quantitative genetics for sunflower breeding and improvement* (2017-)  
Stephan Reinert *Using genomic tools to domesticate a new species, Silphium integrifolium* (2017-)  
Ryan Lynch *Major lineage diversification in Cannabis* (2014)

## **Graduate students (primary mentor)**

Silas Tittes *Adaptation to urban environments* (2014- )  
Kristin White *Evolution of separate sex chromosomes* (2015- )  
April Goebel *The genetics of survival and adaptation during habitat restoration* (2015- )  
Cloe Pogoda *Genetic underpinnings of domestication and improvement in sunflower* (PhD, 2014-2018)  
Ryan Lynch *Genomics of adaptation and diversification* (PhD, 2014-2015, now at: Medicinal Genomics)

## **Graduate students (coadvised)**

Kyle Keepers *Evolutionary genetics of pupfish* (2013- )  
Chris Smith *Demography, genetics, and speciation* (2015- )

## **Graduate students committee mentor, CU**

Blake Steverson (2014-2017)	Robert Roscow (2014-2016)
Jon Leff (2014-2017)	Margaret Mitter (2015- )
E. L. "Abbey" Paulson (Ph.D., 2013-2016)	Lara Vimarcati (2014- )
Tobin Hammer (2014- )	Marek Romášek (2014-2016)
Aaron Wacholder (2013-2017)	Katherine B. Wolfson (M.S., 2014-2015)
Jared Stewart (2014-2017)	Sean Streich (2015- )
Sierra Stowell (Ph.D., 2013-2016)	Alexandra Alexiev (2016- )
Mathew Sharples (2014- )	Rachel E. Thayer, (2013- )
Topher Weiss-Lehman (2014-2017)	Chelsea Pretz (2016- )
Jack Darcy (2014-2017)	Carly Stewart (2016- )
Eric Funk (2017- )	Kathryn Grabenstein (2016- )
Amy Benefield (2017- )	
David Zonana (2015- )	

## **Graduate students committee member, other institutions**

Anna Schwabe (University of Northern Colorado, 2016- )

## **Graduate student independent study:**

Sean Streich (Spring 2017)  
Carly Anderson (Spring 2017)  
Kristin White (Spring 2017)

## **Undergraduate independent study and/or UROP students**

Sarah Michaud (Spring 2013)	2015)
John "Pablo" Mendieta (2014-2015, UROP)	Tyler Underwood (Spring 2015) Allen DeHoff
Brian Smart (Spring 2015)	(Spring 2017-Fall 2017)
Alyssa Countway (Spring 2017, Summer	Surabhi Nair (Spring 2017, Summer 2017)

Tianna Meyers (Summer 2017-Fall 2017)  
Ayushi Sinha (Summer 2015)  
Mathew Bell (Fall 2015)  
Halie Baker (Fall 2015-Fall 2016)

Christopher Pauli (Fall 2014-Spring 2017)  
Kayla Clancy (Fall 2014-Spring 2016)  
Dustin Bailey (Fall 2018)

**Honors undergraduates:**

Erin Collier-Zahns *Recombination in the Chloroplasts of the Florally Diverse Andean Subtribe Iochrominae (Solanaceae)*, (*summa cum laude* Fall 2015)

John Paul Mendieta *Transposable Element Abundance and Variability in 28 Different Species in the Family Solanaceae*, (*magna cum laude* Fall 2015)

Christopher Pauli *Differential mRNA Expression of Cannabis Treated with Colloidal Silver* (*summa cum laude* Spring 2017)

Dustin Bailey *Genetic tools for understanding and breeding new crops from wild relatives* expected 2019.

## SERVICE

### **Scientific Journal Editorships**

News and Views Editor, <i>Molecular Ecology</i>	2006-present
News and Views Editor, <i>Molecular Ecology Resources</i>	2009-present
Advisory Board member, <i>Evolutionary Applications</i>	2011-present
Board of Advisors to the Editors, <i>New Phytologist</i>	2012-present

### **Reviewer**

American Journal of Botany, Annals of Botany, BAOJ Biotechnology, BMC Evolutionary Biology, BMC Genomics, Cannabis and Cannabinoid Research, Conservation Genetics, Evolution, Evolutionary Applications, Genetic Resources and Crop Evolution, Genetics, Genome Biology and Evolution, Helia, Journal of Applied Research on Medicinal and Aromatic Plants, Journal of Cell Biology and Genetics, Journal of Heredity, Journal of Molecular Evolution, Marine Genomics, Molecular Biology and Evolution, Molecular Ecology, Molecular Ecology Resources, Nature Communications, New Phytologist, Oecologia, Philosophical Transactions of the Royal Society, Plant Biology, PLoS One, Theoretical and Applied Genetics.

### **Grant reviewer**

National Science Foundation, Israel Science Foundation

### **Professional Societies**

Botanical Society of America, Ecological Society of America, Society for the Study of Evolution

### **Community service**

2018-Board of Directors of the Industrial Hemp Research Foundation  
2015-Board member, Agricultural Genomics Foundation.  
2014-2016. Science fair judge, Foothill Elementary, Boulder, CO.

### **Outreach**

2014-2016. Yearly talks to 1-3 grade classrooms at Foothill Elementary, Boulder, CO.  
2014. Public discussion “The future of Cannabis research at CU.” Boulder, CO.  
2013. Public talk “Whole genome sequencing reveals the origins of modern chocolate”. Sigma Xi *Cafe Scientifique*, Boulder, Colorado.  
2012. Full day, hands-on student workshop on “Next generation sequencing data in ecology and evolution”, sponsored by the Canadian Institute of Ecology & Evolution (CIEE) and Canadian Society for Ecology & Evolution (CSEE). July 11, 2012, Ottawa.  
2011. Three exhibits on domestication and speciation in *Helianthus* and *Guizotia*, Beaty Biodiversity Museum, Vancouver.  
2011. Blog article on the use of  $F_{st}$  vs Jost's D for population genetics on The Molecular Ecologist, <http://www.molecularecologist.com/>  
2006. Lecture and discussion on domestication and speciation in sunflowers, Trout Creek public high school, Trout Creek, Utah.

### **University service**

EBIO Executive Committee 2016-2017  
EBIO graduate Committee 2015-2016



Curriculum Committee 2014-2016  
IQ Biology graduate admissions committee 2014-2016  
Biofrontiers Task Force 2013-2016  
Population Geneticist search committee 2014-2015