

**Andrea T. Kramer**  
**Curriculum Vitae**  
**May 2021**

**I. Personal Data:**

Andrea Tietmeyer Kramer  
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**II. Education:**

1996-2000 B.A. in Biology and Environmental Studies. Macalester College, St. Paul Minnesota  
2003-2009 Ph.D. in Biological Sciences. University of Illinois at Chicago, Ecology and Evolution Group.  
Dissertation Title: Ecological genetics of *Penstemon* in the Great Basin, U.S.A.

**III. Professional experience and appointments:**

2021 – present: David Byron Smith Family Curator of Natural Areas  
2019 – present: Director of Restoration Ecology, Chicago Botanic Garden  
2012 – present: Conservation Scientist, Restoration Ecology, Chicago Botanic Garden  
2012 – Present: Adjunct Assistant Professor of Biological Sciences, Northwestern University  
2008 – 2013: Executive Director, Botanic Gardens Conservation International (U.S.)  
2003 – 2007: Research assistant and Ph.D. candidate, Chicago Botanic Garden  
2001 – 2003: Endangered Plant Specialist, Chicago Botanic Garden  
2000 – 2001: Endangered & Native Plant Research Intern, Chicago Botanic Garden  
1999 – 2000: Environmental Education & Restoration Intern, Dodge Nature Center, Minnesota  
1997, 1999: Summer Research Assistant, Cedar Creek Natural History Area, University of Minnesota

**IV. Peer-reviewed Publications:**

Foxx A.J.\*, **A.T. Kramer** 2021. [Hidden variation: cultivars and wild plants differ in trait variation with surprising root trait outcomes](#). *Restoration Ecology* 29:e13336

Griffith, M.P., F. Cartwright, M. Dosmann, J. Fant, E. Freid, K. Havens, B. Jestrow, **A. Kramer**, T.M. Magellan, A.W. Meerow, A. Meyer, V. Sanchez, E. Santiago-Valentín, E. Spence, J.A. Sutasche-Sustache, J. Francisco-Ortega, S. Hoban. 2021. [Ex situ conservation of large and small plant populations illustrates limitations of common conservation metrics](#). *International Journal of Plant Sciences*

Seglias, A.E.\*, Finch, J.\*, **A. T. Kramer**. 2020. [Germination behaviour of forbs native to the southwestern United States following exposure to short-term seed bank conditions \(-20°C\)](#). *Seed Science Research* 30:81 – 91.

Wood, J.\*, J. D. Ballou, T. Callicrate, J. B. Fant, M. P. Griffith, **A. T. Kramer**, R. C. Lacy, A. Meyer, S. Sullivan, K. Traylor-Holzer, S. K. Walsh, and K. Havens. 2020. [Applying the zoo model to conservation of threatened exceptional plant species](#). *Conservation Biology*. Online early. DOI: 10.1111/cobi.13503

St. Clair, A.B.\*, Dunwiddie, P.W., Fant, J.B., Kaye, T.N., **Kramer, A.T.** 2020. [Mixing source populations increases genetic diversity of restored rare plant populations](#). *Restoration Ecology*. 28(3): 583-593.

Zeldin, J., T. Lichtenberger\*, A. Foxx\*, E. R. Williams, and **A. T. Kramer**. 2020. [Intraspecific functional trait structure of restoration-relevant species: implications for restoration seed sourcing](#). *Journal of Applied Ecology*. 57(5): 864-874.

Griffith, M. P., T. Clase, P. Toribio, Y. E. Piñeyro, F. Jimenez, X. Gratacos, V. Sanchez, A. Meerow, A. Meyer, **A. T. Kramer**, J. Fant, K. Havens, T. M. Magellan, M. Dosmann, and S. Hoban. 2020. Can a botanic garden metacollection better conserve wild plant diversity? A case study comparing pooled collections to an ideal sampling model. *International Journal of Plant Sciences* 181(5): 485-496.

- Balazs, K. R.\*, **A. T. Kramer**, S. M. Munson, N. Talkington\*, S. Still, and B. J. Butterfield. 2020. The right trait in the right place at the right time: Matching traits to environment improves restoration outcomes. Ecological Applications. 30(4): e02110.
- Kildisheva, O. A.\*, T. E. Erickson, **A. T. Kramer**, J. Zeldin, and D. J. Merritt. 2019. Optimizing physiological dormancy break of understudied cold desert perennials to improve seed-based restoration. Journal of Arid Environments 170:104001.
- Finch, J.\*, J. L. Walck, S. N. Hidayati, **A. T. Kramer**, V. Lason\*\*, and K. Havens. 2019. [Germination niche breadth varies inconsistently among three \*Asclepias\* congeners along a latitudinal gradient](#). Plant Biology 21(3). 425-438.
- Kramer, A. T.**, B. Crane, J. Downing, J. L. Hamrick, K. Havens, A. Highland, S. Jacobi, T. N. Kaye, E. Lonsdorf, J. Ramp, A. Novy, P. E. Smouse, D. W. Tallamy, A. White\*, and J. Zeldin. 2019. [Sourcing native plants to support ecosystem function in different planting contexts](#). Restoration Ecology 27:470-476.
- Winkler, D. E., D. M. Backer, J. Belnap, J. B. Bradford, B. J. Butterfield, S. M. Copeland, M. C. Duniway, A. M. Faist, S. E. Fick, S. L. Jensen, **A. T. Kramer**, R. Mann, R. T. Massatti, M. L. McCormick, S. D. P. Seth M. Munson, A. A. Pfennigwerth, A. M. Pilmanis, B. A. Richardson, E. Samuel, K. See, K. E. Young, and S. C. Reed. 2018. Beyond traditional ecological restoration on the Colorado Plateau. Restoration Ecology 26:1055-1060.
- Kildisheva, O. A.\*, T. E. Erickson, D. J. Merritt, M. D. Madsen, K. W. Dixon, J. Vargas\*\*\*, R. Amarteifio\*\*, and **A. T. Kramer**. 2018. Do Abrasion- or Temperature-Based Techniques More Effectively Relieve Physical Dormancy in Seeds of Cold Desert Perennials? Rangeland Ecology & Management 71:318-322.
- White, A.\*, J. B. Fant, M. Skinner, K. Havens, and **A. T. Kramer**. 2018. Strategic issue: Restoring species diversity: Assessing capacity in the United States native plant industry Restoration Ecology 26:605-611.
- Barak, R.\*, T. Lichtenberger\*\*, A. Wellman-Houde\*\*, **A. T. Kramer**, and D. J. Larkin. 2018. [Cracking the case: Seed traits and phylogeny predict time to germination in prairie restoration species](#). Ecology and Evolution 8: 5551– 5562.
- Seglias, A.\*, A. Bilge, E. Williams, and **A. T. Kramer**. 2018. [Phylogeny and source climate impact seed dormancy and germination of restoration-relevant forb species](#). PLoS ONE online Feb 5, 2018. <https://doi.org/10.1371/journal.pone.0191931>.
- Kramer, A. T.**, T. E. Wood, S. Frischie\*, and K. Havens. 2018. Considering ploidy when producing and using mixed-source native plant materials for restoration. Restoration Ecology 26:13-19.
- Fant, J. B., K. Havens, **A.T. Kramer**, S. K. Walsh, T. Callicrate, R. C. Lacy, M. Maunder, A. H. Meyer, and P. P. Smith. 2016. What to do when we can't bank on seeds: What botanic gardens can learn from the zoo community about conserving plants in living collections. American Journal of Botany 10.3732/ajb.1600247 DOI.
- Larkin, D. J., S. K. Jacobi, A. L. Hipp, and **A.T. Kramer**. 2016. [Keeping All the PIECES: Phylogenetically Informed Ex Situ Conservation of Endangered Species](#). PLoS ONE 11: e0156973.
- Hintz, L.\*\*, A. Foxx\*, M. Eshleman\*, T.E. Wood and **A.T. Kramer**. 2016. Population differentiation in early life history traits of *Cleome lutea* var. *lutea* in the Intermountain West. Western North American Naturalist. 76(1): 6-17.
- Riebkes, J. L.\*\*, R. S. Barak\*, and **A. T. Kramer**. 2015. Evaluating seed viability in prairie forbs: a test of three methods Native Plants Journal 16(2):96-106.
- Barak, R. S.\*, J. B. Fant, **A. T. Kramer**, and K. A. Skogen. 2015. Assessing the value of potential “native winners” for restoration of cheatgrass-invaded habitat. Western North American Naturalist 75(1):58–69.
- Basey, A. C.\*, J. B. Fant, and **A.T. Kramer**. 2015. Producing native plant materials for restoration: ten rules to maximize and maintain genetic diversity. Native Plants Journal 16(1): 37-53.
- Kramer, A.T.**, D. Larkin, and J. B. Fant. 2015. Assessing potential seed transfer zones for five forb species in the Great Basin. Natural Areas Journal 35:174-189.
- Kramer, A.T.** and K. Havens. 2015. Report in brief: Assessing botanical capacity to address grand challenges in the United States. Natural Areas Journal 35:83-89.
- Havens, K., P. Vitt, S. Still, **A.T Kramer**, J. B. Fant, and K. Schatz. 2015. Seed sourcing for restoration in an era of climate change. Natural Areas Journal 35:122-133.
- Griffith, M.P., M. Calonje, A.W. Meerow, F. Tut, **A.T. Kramer**, A. Hird, T.M. Magellan, C.E. Husby. 2015. Can a botanic garden cycad collection capture the genetic diversity in a wild population? International Journal of Plant Sciences 176:1-10.

- Havens, K., **A. Kramer**, E. Guerrant. 2014. Getting Plant Conservation Right (Or Not): The Case of the United States. International Journal of Plant Sciences **175**: 3-10.
- Fant, J. B., **A. Kramer**, E. Sirkin, and K. Havens. 2013. Genetics of reintroduced populations of the narrowly endemic thistle, *Cirsium pitcheri* (Asteraceae). Botany **91**:301-308.
- Cires, E., Y. Smet, C. Cuesta, P. Goetghebeur, S. Sharrock, D. Gibbs, S. Oldfield, **A. Kramer**, and M.-S. Samain. 2013. Gap analyses to support *ex situ* conservation of genetic diversity in *Magnolia*, a flagship group. Biodiversity and Conservation **22**:567-590.
- Kramer, A.T.**, J. Fant and M.V. Ashley. 2011. Influences of landscape and pollinators on population genetic structure: examples from three *Penstemon* (Plantaginaceae) species in the Great Basin. American Journal of Botany. **98**(1): 109-121.
- Sundberg, M., P. DeAngelis, K. Havens, K. Holsinger, K. Kennedy, **A. Kramer**, R. Muir, M. Olwell, K. Schirenbeck, L. Stritch, and B. Zorn-Arnold. 2011. Perceptions of Strengths and Deficiencies; Disconnects between Graduate Students and Prospective Employers. BioScience **61**(2): 133-138.
- Britton, K.O., P. White, **A. Kramer**, Hudler, G., 2010. A new approach to stopping the spread of invasive insects and pathogens: early detection and rapid response via a global network of sentinel plantings. New Zealand Journal of Forestry **40**: 109-114.
- Kramer, A.T.** and K. Havens. 2009. Plant conservation genetics in a changing world. Trends in Plant Science. **14**(11): 599-607.
- Wilk, J.A., **A.T. Kramer**, M.V. Ashley. 2009. High variation in clonal growth versus sexual reproduction in populations of the wild strawberry, *Fragaria virginiana* (Rosaceae). Annals of Botany. **04**(7):1413-1419.
- Vitt, P., K. Havens, **A.T. Kramer**, D. Sollenberger, E. Yates. 2009. Assisted migration of plants: changes in latitudes, changes in attitudes. Biological Conservation. **43**(1): 18-27.
- Kramer, A.T.**, J.L. Ison, M.V. Ashley, and H.F. Howe. 2008. The paradox of forest fragmentation genetics. Conservation Biology **22**(4): 878 - 885.
- Kramer, A.T.** and J.B. Fant. 2007. Isolation and characterization of microsatellite loci in *Penstemon rostriflorus* (Plantaginaceae) and cross species amplification. Molecular Ecology Notes **7**(6): 998-1001.
- Davis, M.A., C. Curran, **A. Tietmeyer**, and A. Miller. 2005. Dynamic tree aggregation patterns in a species-poor temperate woodland disturbed by fire. Journal of Vegetation Science **16**: 167-174.

\*Graduate student

\*\*Undergraduate student

\*\*\*High school student

## V. Other Publications:

- Kramer, A.T.**, B. Zorn-Arnold and K. Havens. 2013. Applying Lessons from the U.S. Botanical Capacity Assessment Project to Achieve 2020 Global Strategy for Plant Conservation Targets. Annals of the Missouri Botanical Garden **99**: 172-179.
- Hird, A. and **A.T. Kramer**. 2013. Achieving Target 8 of the Global Strategy for Plant Conservation: Lessons Learned from the North American Collections Assessment. Annals of the Missouri Botanical Garden **99**:161-166.
- Hird, A., **A. Kramer**, R. Mims. 2012. Care for the Rare. Public Garden **27**(3):30-31
- Kramer, A.** 2012. International collaboration for conservation. Public Garden **27**(1):13-16.
- Kramer, A.**, and V. Pence. 2012. The challenges of *ex situ* conservation for threatened oaks. International Oaks (Journal of the International Oak Society). **23**: 91-108.
- Kramer, A.** 2011. Assessing and integrating conservation through collections. The Botanic Garden (BGANZ) November 2011.
- Kramer, A.** and A. Hird. 2011. What is the conservation value of botanic garden plant collections? A baseline assessment for the world and North America. Public Garden **26**: 22-24.
- Kramer, A.** and A. Hird. 2011. Building an international sentinel plant network. BGjournal **8**: 3-6.
- Kramer, A.** 2011. A renewed Global Strategy for Plant Conservation and other COP 10 outcomes. Australasian Plant Conservation **19**(4): 26-28.
- Kramer, A.** and K. Havens. 2011. Assessing botanical capacity in the United States: gaps identified and strategic recommendations made to maximize conservation success. Australasian Plant Conservation **19**(3): 21-23.
- Kramer, A.**, A. Hird, K. Shaw, M. Dosmann, and R. Mims. 2011. *Conserving North America's Threatened Plants: Progress report on Target 8 of the Global Strategy for Plant Conservation*. 28 pp. + appendices. Botanic Gardens Conservation International U.S., Glencoe, IL.

- Kramer, A.T.**, Havens, K., Zorn-Arnold, B., 2010. *Assessing botanical capacity to address grand challenges in the United States*, 64 pp. plus appendices. Chicago Botanic Garden and Botanic Gardens Conservation International US, Glencoe, IL.
- Kramer, A.T.** 2010. Measuring botanic garden contributions to plant conservation and education in the United States. *BGjournal* 7(2): 24-28.
- Kramer, A.T.**, with Center for Plant Conservation Staff and Science Advisors. 2006. Genetic Considerations in Ecological Restoration (Annotated Bibliography). Online at [http://www.centerforplantconservation.org/GCERB/CPC\\_GCERBRefTopicList.asp](http://www.centerforplantconservation.org/GCERB/CPC_GCERBRefTopicList.asp).
- Tietmeyer, A.** 2004. The Institute for Plant Conservation at the Chicago Botanic Garden. *Samara* (International Newsletter of the Partners of the Millennium Seed Bank Project) 6: 7.
- Tietmeyer, A.** and P. Bristol. 2002. Potential Invasibility of Crabapple Species and Cultivars in the Chicago Region. *Malus* 16: 3-11.

#### Posters

- Lythgoe, Ashlyn\*\*, Sam Kilgore, **Andrea Kramer**. 2020. The impact of short-term storage conditions on germination of *Viola pedatifida*. Midwest Ecology and Evolution Conference. Western Illinois University. March 1, 2020. Macomb, IL, USA.
- Winkler, D.E., Backer, D., Belnap, J., Bradford, J., Butterfield, B., Copeland, S., Duniway, M., Faist, A., Fick, S., Jensen, S., **Kramer, A.**, Mann, R., Massatti, R., McCormick, M., Munson, S., Olwell, P., Parr, S., Pfennigwerth, A., Pilmanis, A., Richardson, B., Samuel, E., See, K., Young, K., Reed, S.C.. 2019. Opportunities for success: the future of ecological restoration on the Colorado Plateau. SER2019: 8th World Conference on Ecological Restoration. Poster Presentation. September 2019. Cape Town, South Africa.
- Lichtenberger, T.\*, Zeldin, J., Williams, E.W., Foxx, A.J. and **Kramer, A.T.** 2018. [Micropropagation of Colorado Plateau native forb species: A valuable tool for research in restoration ecology](#). Ecological Society of America Annual Meeting. New Orleans, LA. August 2018.
- Lichtenberger, T\*, E. Williams and **A Kramer**. 2016. Impact of Functional Trait Diversity on Prairie Ecosystem Restoration. Northwestern University Undergraduate Research and Arts Expo. June 1. Evanston, IL. TIED FIRST PLACE POSTER IN SCIENCE AND ENGINEERING. <https://undergradresearch.northwestern.edu/congratulations-our-2016-expo-winners>.
- Hintz, L. M.\*\* Eshleman, **A.T. Kramer**. 2014. Intraspecific variation for early life history traits in *Cleome lutea*: implications for restoration seed sourcing. REU symposium. August. Chicago IL
- Hird, A., **A.T. Kramer**, R. Mims. 2012. Care for the Rare – Interpretation for Conservation at Botanic Gardens. American Public Gardens Association Annual Conference. Columbus, Ohio.
- Kramer, A.T.**, B. Zorn-Arnold, K. Havens. 2010. Assessing botanical capacity to address grand challenges in the United States. 4<sup>th</sup> Global Botanic Gardens Congress. Dublin, Ireland.
- Kramer, A.T.**, B. Zorn-Arnold, K. Havens. 2010. Assessing botanical capacity to address grand challenges in the United States. American Public Gardens Association Annual Conference. Atlanta, Georgia.
- Kramer, A.T.**, B. Zorn-Arnold, K. Havens. 2010. Assessing botanical capacity to address grand challenges in the United States. National Native Seed Conference. Snowbird, Utah.
- Kramer, A.T.**, J.B. Fant, R. Tonietto and M.V. Ashley. 2007. Understanding genetic diversity to guide restoration practice. University of Illinois, Chicago. Biological Sciences Graduate Research Symposium. Chicago, Illinois.
- Kramer, A.T.**, J.B. Fant, R. Tonietto and M. Ashley. 2006. Plant population genetics in the Great Basin (U.S.): Outbreeding depression and implications for restoration. Janet Meakin Poor Research Symposium. Chicago Botanic Garden, Illinois.
- Kramer, A.T.**, J.B. Fant, R. Tonietto and M. Ashley. 2006. Plant population genetics in the Great Basin (U.S.): Outbreeding depression and implications for restoration. EPA STAR Fellows Conference. Washington, D.C.
- Tonietto, R., J.B. Fant, and **A.T. Kramer**. 2006. Intra-specific differences in *Penstemon* floral morphology. Midwest Ecology and Evolution Conference. St. Louis University, Missouri.
- Tonietto, R., J.B. Fant, and **A.T. Kramer**. 2006. Intra-specific differences in *Penstemon* floral morphology. Graduate Women in Science Conference. Madison, Wisconsin.
- Fant, J.B. and **A.T. Kramer**. 2004. Post Fire Restoration of the Great Basin: Seed Ecology. Janet Meakin Poor Research Symposium. Chicago Botanic Garden, Illinois.
- Fant, J.B. and **A.T. Kramer**. 2004. Post Fire Restoration of the Great Basin: Seed Ecology. Intermountain Native Plant Summit. Boise State University, Idaho.

- Bristol, P. and **A. Tietmeyer**. 2002. Potential Invasibility of Crabapple Species and Cultivars in the Chicago Region. International Symposium: Invasive Plants: Global Issues, Local Challenges. Chicago, Illinois.
- Vitt, P., K. Bradford, and **A. Tietmeyer**. 2001. Demographics of state-threatened *Viola conspersa*. Janet Meakin Poor Research Symposium. Chicago Botanic Garden, Illinois
- Tietmeyer, A.**, A. Day, and M.A. Davis. 1997. Effects of Habitat Fragmentation on Oak Savanna Bird Species. Pew Undergraduate Research Symposium. St. Louis, Missouri.

#### **VI. Presentations and Organized Symposia:**

- White, A.B.\* J. Fant, K. Havens, M. Skinner, and **A. Kramer** 2018 Assessing capacity of the U.S. native plant production industry to support the restoration of species diversity. Natural Areas Conference. Bloomington, IN. October 2018.
- Kucera, K.\*, K. Gunnell, S. Jensen, M. Landeen, and **A. Kramer** 2018. Variation in seed germination requirements and response to gibberellic acid among populations of *Penstemon pachyphyllus*: Implications for the production of genetically diverse mixed-source seed lots. Natural Areas Conference. Bloomington, IN. October 2018.
- Zeldin, J., Lichtenberger, T\*. Williams, E.W. Foxx, A.J.\* and **Kramer, A.T.** 2018. Within- and between-population trait variation in high-priority native forb species for restoration use in the Colorado Plateau Ecological Society of America Annual Meeting. New Orleans, LA. August 2018.
- Zeldin, J.\*, J. Fant, and **A.T. Kramer**. 2017. *Thinking outside the box when producing materials to restore locally rare plant species: micropropagation of Cirsium hillii in the Chicago Region*. Natural Areas Conference, Ft Collins, CO. October 2017.
- Woolridge, C\*., J.B. Fant, and **A.T. Kramer**. 2017. *Predictive provenancing: can southern-sourced seeds be used in Midwest restoration efforts?* Natural Areas Conference, Ft Collins, CO. October 2017.
- Patterson, M. and **A.T. Kramer**. 2017. Meeting multiple management priorities with limited resources when making post-fire management decisions in the Intermountain West. Natural Areas Conference, Ft Collins, CO. October 2017.
- Kramer, A.**, S. Still, N Talkington\*, and T. Wood. 2017. *Using past seeding treatments to inform future sourcing in the Colorado Plateau*. Colorado Plateau Native Plant Program annual conference. Monticello, UT. February 28, 2017.
- Kramer, A.**, S. Still, N Talkington\*, and T. Wood. 2017. *Using past seeding treatments to inform future sourcing in the Colorado Plateau*. National Native Seed Conference. Washington, DC. February 15, 2017.
- White, A., J. Fant, and **A. Kramer**. 2017. *Restoring species diversity: uncovering gaps in the native seed market*. National Native Seed Conference. Washington, DC. February 15, 2017.
- Woolridge, C\*., E. Dangremond, J. Fant, and **A. Kramer**. 2017. *Predictive provenancing: can southern-sourced seeds be used in Midwest restoration efforts?* National Native Seed Conference. Washington, DC. February 15, 2017.
- Seglias, A.\* and **A. Kramer**. 2017. *Does frozen storage change the germination performance of native Southwestern forb species?* National Native Seed Conference. Washington, DC. February 15, 2017.
- Seglias, A\*., and A. Kramer. 2016. *Is species identity or source climate a better predictor of seed germination requirements for native forb species in the Colorado Plateau*. Natural Areas Conference. Davis, California, USA. October 20, 2016.
- Woolridge, C\*., E. Dangremond, J. Fant, and A. Kramer. 2016. Testing a predictive provenancing approach for five tallgrass prairie species used in Midwest restoration efforts. Natural Areas Conference. Davis, California, USA. October 20, 2016.
- Producing native plant materials for restoration: ten rules to collect and maintain genetic diversity*. Webinar for the Great Basin Fire Science Exchange (available on YouTube). February 8, 2016.
- Restoring diversity in changing environments*. Invited seminar to the Illinois Natural History Survey. Champaign, IL. November 10, 2015.
- Producing native plant materials for restoration: ten rules to collect and maintain genetic diversity*. (with J. Fant and A. Basey). Society for Ecological Restoration. Manchester, U.K. August 25, 2015.
- Using the past to inform future seed sourcing in the Colorado Plateau*. (with N. Talkington, A.J. Foxx, S. Still). Ecological Society of America. Baltimore, MD, USA. August 12, 2015.
- White, A., J. Fant, and A. Kramer. 2015. *Restoring species diversity: Are vulnerable plant species falling through the cracks?* National Native Seed Conference. Santa Fe, NM, USA. April, 2015.

*Closing the loop: using restoration monitoring to inform future sourcing decisions.* National Native Seed Conference. Santa Fe, NM, USA. April, 2015.

*Planning for pollinators with native plant materials development, production, and use in restoration.* Organize and present in symposium. Peggy Olwell, Kay Havens, Andrea Kramer, Brett Blaauw, Randy Mandel. National Native Seed Conference. Santa Fe, NM, USA. April 18, 2015.

*Using the past to inform future seed mixes for pollinator health* (with K. Seltmann, S. Still, N. Talkington, T. Wood). National Native Seed Conference. Santa Fe, NM, USA. April 18, 2015.

*Restoration research at Chicago Botanic Garden Society for Ecological Restoration Midwest.* Glencoe, IL, USA. March 28, 2015.

*Restoring diversity in changing environments.* Chicago Botanic Garden research seminar. Glencoe, IL, USA. March 18, 2015.

*Variation in population level rooting traits in Elymus elymoides and its potential ecological role.* Botanical Society of America (presentation by MS Student A. Foxx). Boise, ID, USA. July 26-30, 2014.

*Producing plant material for reintroduction: ten rules to maximize genetic diversity.* (with A. Basey and J. Fant). Center for Plant Conservation National Symposium. Chanhassen, MN, USA. May 7, 2014.

*Using today's restorations to inform tomorrow's native plant material development and sourcing decisions.* Colorado Plateau Native Plant Program Annual Meeting. Grand Junction, CO, USA. April 8-10, 2014.

*Genetics primer to producing seed for restoration in a changing climate.* Invited Presentation, Climate Change Task Force & Natural Resources Management Team joint meeting. Chicago, IL, USA. December 2013.

*A test of potential seed transfer zones for restoration in the Great Basin: examples from Penstemon and Eriogonum.* (with D. Larkin and J. Fant) Society for Ecological Restoration World Conference, Madison, WI, USA. October 2013.

*Genetic impacts of moving and mixing seeds between ecoregions: examples from 3 Penstemon species.* 12<sup>th</sup> Biennial Conference of Science and Management on the Colorado Plateau, Flagstaff, AZ, USA. September 2013.

*Getting plant conservation right: successes, challenges and opportunities for the future.* Invited Presentation, Smithsonian Botanical Symposium. Washington, DC, USA. April 2013.

*A genetics primer to producing seed for restoration.* National Native Seed Conference. Santa Fe, NM, USA. April 2013.

*Use of early seral species to improve restoration success.* Organized symposium. Brett Wolk, Shauna Uselman, Beth Leger, Ann Hild, Cara MacMillan, Walter Henes. National Native Seed Conference. Santa Fe, NM, USA. April 2013.

*Current issues in botany: botanical capacity shortcomings.* (with K. Havens). Invited presentation, Pennsylvania Botany Symposium. Powdermill Nature Reserve, PA, USA. November 2012.

*Learning from native 'winners' in degraded sites in the Colorado Plateau.* Colorado Plateau Native Plant Program Annual Conference. Page, AZ, USA. March 2012.

*Conserving trees for tomorrow.* Public and donor seminars at the Morton Arboretum. Lisle, IL, USA. November 2011.

*Assessment toward evolution of the Plant Conservation Alliance's National Framework.* Webinar during bimonthly meeting of the Plant Conservation Alliance. November 2011.

*Assessing and integrating conservation through collections.* Keynote address Botanic Gardens of Australia and New Zealand Conference. Albury, Australia. October 2011.

*Harnessing the power of botanic gardens.* Keynote address to Botanic Gardens of Australia and New Zealand Conference. Albury, Australia. October 2011.

*Assessing and building capacity for plant conservation, research and education in the United States.* Invited seminar, Shanghai Chenshan Botanical Garden. Sonjiang, China. August 2011.

*Lessons from the U.S. Botanical Capacity Assessment Project – Building Links Between Stakeholders.* International Botanical Congress. Melbourne, Australia. July 2011.

*Applying lessons from the U.S. Botanical Capacity Assessment Project to achieving the 2020 GSPC targets.* Global Partnership for Plant Conservation Conference. Missouri Botanical Garden, St. Louis, MO, USA. July 2011.

*Botanic gardens in China – growing and partnering for MORE plant conservation.* American Public Gardens Association conference. Philadelphia, PA, USA. June 2011.

*Botanical Capacity in the United States: How do we measure up?* Invited presentation at the Arnold Arboretum of Harvard University. Boston, MA, USA. April 2011.



*The state of botanical conservation in the U.S.: shoring up our future and building on our past.* Invited presentation to U.S. Fish and Wildlife Service staff. Washington DC, USA. March 2011.

*Assessing botanical capacity to address grand challenges.* Invited seminar at the Morton Arboretum. Lisle, IL, USA. November 2010.

*International exchange and data sharing for ex situ plant conservation and research.* International symposium at Shanghai Chenshan Botanical Garden. Shanghai, China. October 12, 2010.

*Ecological genetics of Penstemon in the Great Basin, USA.* Australian Network for Plant Conservation Conference. Perth, WA, Australia. September 2010.

*Assessing botanical capacity in the United States: gaps identified and recommendations made to maximize conservation success.* Australian Network for Plant Conservation Conference. Perth, WA, Australia. September 2010.

*Developing an international sentinel plant network to facilitate early detection and rapid response to invasive pests.* 4<sup>th</sup> Global Botanic Gardens Congress. Co-organized and presented at session. Mike Buffin, Kerry Britton, Matthew Jeb, Andrea Kramer. Dublin, Ireland. June 13-18, 2010.

*Strategic actions all botanic gardens can take to advance plant conservation.* American Public Gardens Association Annual Conference. Co-organized, moderated and presented in session. Christine Flanagan, Jim Boudreau, Andrea Kramer, Janet Marinelli. Atlanta, Georgia, USA. June 1-5, 2010.

*Genetic considerations in native plant materials development and use and Common garden studies and seed transfer guidelines.* National Native Seed Conference. Co-organized and presented in session. Deborah Rogers, Elizabeth Leger, Erin Espeland, Matthew Horning, Andrea Kramer, RC Johnson, Jay Kitzmiller, Andy Bower. Snowbird, UT, USA. May 2010.

*Plants and climate change.* Invited presentation for Casey Trees class on *Landscapes give back*. Washington, D.C., USA. January 2010.

*Genetic considerations that determine the success of native plantings: examples from Penstemon in the Great Basin.* Invited presentation to the American Seed Trade Association. Kansas City, MO, USA. November 2009.

*Global plant conservation science and outreach.* Co-organized and moderated day-long Janet Meakin Poor Research Symposium at Chicago Botanic Garden. Chicago, IL, USA. October 2009.

*Conserving native plant populations in a changing world.* Natural Areas Conference. Vancouver, WA, USA. September 2009.

*How much do living collections really aid conservation?* Co-organized and moderated session at American Public Gardens Association annual meeting. Andrea T. Kramer, Abby Hird, M. Patrick Griffith, David Aplin. St. Louis, MO, USA. June 2009.

*Plant conservation in a changing climate: a leading role for botanic gardens.* Invited Seminar (Mason Pharr Seminar). North Carolina State University, Raleigh, NC, USA. April 2009.

*Climate change and plants: Examples from Penstemon in the Great Basin.* Seminar to Bureau of Land Management staff. Washington, D.C., USA. February 2009.

*Ecological genetics of Penstemon in the Great Basin.* Ecology and Evolution Seminar, University of Illinois at Chicago, USA. January 2009.

*Plants in a changing climate.* Invited presentation at Association of Zoological Horticulture Annual Conference. Cleveland, OH, USA. October 2008.

*Conserving plant species with wide ecological amplitude in the face of climate change: common garden studies on Penstemon species in the western U.S.* 2nd World Botanic Garden Science Congress, Delft, The Netherlands. June 2008.

*Plants in a changing climate - how you can help plant for the planet.* Public presentation at U.S. Botanic Garden. Washington, D.C., USA. June 2008.

*Overview of Botanic Gardens Conservation International in the United States.* Presentation to the Plant Conservation Alliance. Arlington, VA., USA. February 2008.

*Conservation efforts at the Chicago Botanic Garden.* Presentation to Elderhostel Groups at Chicago Botanic Garden. Glencoe, IL, USA. October 2007.

*Successful restoration of plant communities: why pollinators matter.* Presentations to Chicago Botanic Garden board members and potential and current donors. Glencoe, IL, USA. July 2007.

*Ecotypes in Penstemon: Insights from Molecular and Quantitative Studies.* Ecology and Evolution Departmental Seminar, University of Illinois, Chicago, IL, USA. April 2006.

*Ecotypes in Penstemon: Insights from Molecular and Quantitative Studies*. Intermountain Native Plant Summit, Boise, ID, USA. April 2006.

*Effects of Habitat Fragmentation on Oak Savanna Bird Species*. Minnesota Academy of Science-Winchell Symposium. Winona, MN, USA. April 1998.

## VII. Media, Advocacy, and General Outreach

BBC Radio, Costing the Earth – guest on The World’s Toughest Plants. Aired May 30, 2017.

<http://www.bbc.co.uk/programmes/b08rq6dx>

Keep Growing. Giving Plants a Louder Voice on the Hill (contributor). Chicago Botanic Garden Member Magazine. Winter 2015.

Coauthored letter (signed by 29 scientists) sent to Congress addressing concerns about the use of native, ecologically appropriate seed in restoration seed mixes on federal lands. Fall 2014

Working to restore a rainbow of wildflowers in the Colorado Plateau. Chicago Botanic Garden Blog.

[http://my.chicagobotanic.org/science\\_conservation/working-to-restore-a-rainbow-of-wildflowers-in-the-colorado-plateau/](http://my.chicagobotanic.org/science_conservation/working-to-restore-a-rainbow-of-wildflowers-in-the-colorado-plateau/). December 5, 2014

Keep Growing. Putting the “Wild” Back in the West. Chicago Botanic Garden Member Magazine. Winter 2014.

ClimateWire: Scientists hunt for native plants to fight incendiary invader of the West.

<http://www.eenews.net/stories/1060004291>. August 11, 2014.

Al Jazeera America – television piece on seed banking and post-wildfire restoration featuring K. Havens and A. Kramer. October 2013.

Sowing seeds of rebirth. Chicago Tribune. October 31, 2013.

Simulating summer in the Plant Science Center. Chicago Botanic Garden Blog.

[http://my.chicagobotanic.org/science\\_conservation/simulating-summer](http://my.chicagobotanic.org/science_conservation/simulating-summer). February 25, 2013.

## VIII. Awards and Fellowships:

*Professional Citation*. 2012. American Public Gardens Association. Annual award for public garden professionals that embody great skills, innovation, and potential in botany, horticulture, conservation, gardening, research, extension, education, development, or administration

*Graduate Student Research Award*. 2007, 2008. University of Illinois Chicago, Biological Sciences Department.

*Science to Achieve Results Fellowship (STAR)*. 2005 – 2008. U.S. Environmental Protection Agency. (\$108,000).

*NSF Graduate Research Fellowship, Honorable Mention*. 2004, 2005. National Science Foundation.

*University Fellowship*. 2003 – 2005. University of Illinois, Chicago. (\$60,000).

## IX. Funding:

Institute of Museum and Library Services. 2019-2022. *Improving ex situ plant conservation: Extending zoo pedigree management approaches to rare, exceptional plant species in botanic gardens*. (\$731,633; A. Kramer co-PI).

National Science Foundation. 2018-2020. *REU Site: Plant Biology and Conservation Research Experiences for Undergraduates--From Genes to Ecosystems*. (\$384,054; A. Kramer co-PI).

US Forest Service. 2018-2022. *Assessing genetic diversity throughout the production of pooled-source seed for restoration use in Penstemon pachyphyllus in the Great Basin* (\$6,700; A. Kramer PI).

Institute of Museum and Library Services. 2016. *Safeguarding our Plant Collections*. (\$439,070 to Montgomery Botanical Center; A. Kramer co-PI).

Bureau of Land Management. 2016 – 2017. *National Native Seed Strategy and Native Plant Materials Development*. (\$370,000; A. Kramer co-PI).

National Science Foundation. 2016. MRI: Acquisition of a Ploidy Analyzer at Chicago Botanic Garden. (\$101,048; A. Kramer co-PI).

Bureau of Land Management. 2012 – 2016. *Native plant materials research, including work on “native winner” forb species and using historical restoration data to inform future restoration seed sourcing*. (\$795,000; A. Kramer co-PI).

United State Botanic Garden. 2013. *Care for the Rare and Assessing Collections for Conservation*. (\$84,000 to BGCI US; A. Kramer co-PI).

Fondation Franklinia. 2012-2013. *Conserving threatened exceptional species*. (\$33,000 to BGCI US; A. Kramer co-PI).



USDA APHIS Plant Protection and Quarantine. 2013-2014. *Enhancing the PlantSearch database to help APHIS-PPQ predict and prevent invasive plants and plant pests.* (\$45,000 to BGCI US; A. Kramer co-PI).

Stanley Smith Horticultural Trust. 2013. *Enhancing the PlantSearch database.* (\$20,000 to BGCI US; A. Kramer PI).

USDA APHIS Plant Protection and Quarantine. 2012-2013. *Enhancing the PlantSearch database to help APHIS-PPQ predict and prevent invasive plants and plant pests.* (\$45,000 to BGCI US; A. Kramer PI).

United State Botanic Garden. 2012. *North American Collections Assessment and Care for the Rare.* (\$85,000 to BGCI US; A. Kramer PI).

Wallace Genetic Foundation. 2011-2012. *Enable strategic and sustainable plant conservation action* (\$45,000 to BGCI US; A. Kramer PI).

United State Botanic Garden. 2011. *North American Collections Assessment.* (\$80,000 to BGCI US; A. Kramer PI).

USDA APHIS Plant Protection and Quarantine. 2010-2011. *Enhancing the utility of botanic garden plant collections databases to help APHIS-PPQ predict and prevent invasive plants and plant pests.* (\$80,000 to BGCI US; A. Kramer PI).

United State Botanic Garden. 2010. *Mid-Atlantic Seeds of Success Project and North American Collections Assessment.* (\$75,000 to BGCI US; A. Kramer PI).

Wallace Genetic Foundation. 2009-2010. *Empowering botanic gardens to protect plants and promote sustainability in a rapidly changing climate.* (\$45,000 to BGCI US; A. Kramer PI).

United State Botanic Garden. 2009. *Mid-Atlantic Seeds of Success Project.* (\$62,000 to BGCI US; A. Kramer PI).

United States Forest Service. 2009-2012. *Challenge cost share agreement for ex situ conservation of red listed oak species.* (\$10,000 to BGCI US; A. Kramer PI).

National Fish and Wildlife Foundation. 2009 – 2012. *Ex situ conservation of four Red Listed Oak species.* (\$15,000 to BGCI US, A. Kramer PI).

National Fish and Wildlife Foundation. 2009 – 2011. *Assessment towards evolution of the Plant Conservation Alliance National Framework.* (\$30,000 to BGCI US, A. Kramer PI).

Bureau of Land Management. 2009-2010. *Restoration on the Colorado Plateau.* (\$80,000 to Chicago Botanic Garden; A. Kramer collaborator).

National Fish and Wildlife Foundation. 2009-2010. *Restoration on the Colorado Plateau.* (\$49,937 to Chicago Botanic Garden; A. Kramer collaborator).

Center for Invasive Plant Management (CIPM). 2006 – 2007. *Impact of invasive plants on pollinators* (\$5,000 to Chicago Botanic Garden; A. Kramer, co-PI).

Bureau of Land Management (BLM). 2005 – 2007. *Plant-pollinator interactions* (\$43,000 to Chicago Botanic Garden; A. Kramer, co-PI).

Bureau of Land Management (BLM). 2005 – 2007. *Genetic diversity in seed collections* (\$20,000 to Chicago Botanic Garden; A. Kramer, co-PI).

National Fish and Wildlife Foundation. 2005 – 2006. *Marker development for threatened species* (\$10,000 to Chicago Botanic Garden; A. Kramer, co-PI).

## **X. Teaching and Mentoring Experience:**

### **Postdoctoral reserachers**

2019-present: Co-advisor: Marcello De Vitis, in collaboration with Ball Horticultural Company.

### **Graduate students**

2019-present: Advisor: Alexis Balog, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2018-present. Committee member: Samantha Danguilan. M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2018-present. Advisor: Matthew Evans, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2018-2020. Co-advisor: Sam Kilgore, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2017-2020. Advisor: Taran Lichtenberger, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2017-2020. Advisor: Katie Kucera, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2017-2018. Committee member: Nora Gavin-Smyth, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2016-2018. Advisor: Nathan Lamb, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2015-2018. Committee member: Jordan Wood, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2015-present. Advisor: Adrienne Ernst, Ph.D. Student, Northwestern University Plant Biology and Conservation Doctoral program.

2015-2017. Advisor: Jacob Zeldin, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2015-2017. Co-advisor: Christopher Woolridge, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2014-2019. Committee member: Jessa Finch, Ph.D. Student, Northwestern University Plant Biology and Conservation Doctoral program.

2014-2017. Committee member: Becky Barak, Ph.D. Student, Northwestern University Plant Biology and Conservation Doctoral program.

2014-2020. Advisor: Alicia Foxx, Ph.D. Student, Northwestern University Plant Biology and Conservation Doctoral program.

2014-2017. Advisor: Alex Seglias, M.S. Student, Northwestern University Plant Biology and Conservation Masters program.

2014-2017. Co-advisor: Abbey White, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2013-2015. Advisor: Maggie Eshleman, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2013-2015. Advisor: Nora Talkington, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2013-2015. Co-advisor: Adrienne Basey, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2012-2015. Committee member: Theresa Melhem, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2012-2014. Committee member: Maria Wang, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2012-2014. Advisor: Stephanie Frischie, M.S. Student Northwestern University Conservation and Land Management Masters program.

2012-2014. Advisor: Alicia Foxx, M.S. Student Northwestern University Plant Biology and Conservation Masters program.

2012-2014. Committee member: Janet Backs-Rizner, Ph.D. Student. University of Illinois at Chicago.

2012-2014. Committee member: Matt Rhodes. M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2012-2014. Committee member: Lindsey Darling, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

2011-2012. Committee member: Raakel Toppila, M.S. Student. Longwood Graduate Program, University of Delaware.

2009-2010. Committee member: Elizabeth Riley, M.S. Student. Northwestern University Plant Biology and Conservation Masters program.

### **Undergraduate students**

2020. NU URG co-mentor (with Marcello De Vitis, advised post-doc): Kyndall Hadley

2019. REU co-mentor (with Matt Evans, advised MS student): Paola Ramirez. REU co-mentor (with Sam Kilgore, advised MS student): Ashlyn Lithgoe. REU co-mentor (with Adrienne Ernst, advised PhD student): Kyla Knauf

2018. REU co-mentor (with K. Kucera, advised MS student): Emily Orr. REU co-mentor (with Taran Lichtenberber, advised MS student): Jennet Chang.

2017. REU co-mentor (with J. Fant and C. Woolridge, advised MS student): Ana Flores. REU co-mentor (with A. Foxx, advised PhD student): Brooke Allen. REU co-mentor (with N. Lamb, advised MS student): Jalen Holloway. REU co-mentor (with A. Ernst, advised PhD student): Renata Poulton Kamakura.
2016. REU co-mentor (with J. Fant and C. Woolridge, advised MS student): Michael Fuerte. REU co-mentor (with O. Kildisheva): Remy Amarteifo and Deidre Keating.
2015. REU co-mentor (with J. Fant and A. White, advised grad student): Patricio Ansal di and Lisa Cheung (NSF-funded REU) and NU URG mentor (with E. Williams): Taran Lichtenberger.
2014. REU co-mentor (with M. Eshleman and A. Foxx, advised grad students): Giselle Varrientos and Lisa Hintz.
2013. REU co-mentor (with B. Barak): Jessica Riebkes, Central College. *Seeding restorations: Evaluating seed viability to improve restoration outcomes*. Used for senior honors thesis, presented at the Annual Meeting of the Iowa Academy of Science in Fort Dodge, IA. April 11 & 12, 2014, and a paper (in press) in *Native Plants Journal*.

### High school students

2019. College First co-mentor: Fernando Lopez, Nana Afriyie, and Manal Amjad (with primary mentorship by Paola Ramirez, Matt Evans, Ashlyn Lithgoe, Sam Kilgore, Kyla Knauf, Adrienne Ernst)
2018. College First co-mentor: David Nguyen, Sacramento Herrera (with Taran Lichtenberger, Jennet Chang, Katie Kucera, Emily Orr). Summer research mentor: Rachael Rosenberg (with Katie Kucera, Emily Orr).
2017. College First co-mentor: Isaiah Spears, Giovannie Lozano, Kyrel McDavid, Raymond Diaz, Ra'ell Moore-Wilson (with Jeremie Fant, Olga Kildisheva, Alicia Foxx, Adrienne Ernst, Nathan Lamb, Brooke Allen, Ana Flores, Renata Poulton Kamakura)
2016. College First co-mentor: Jacky Vargas (with Olga Kildisheva, Remy Amarteifo, and Deidre Keating)
2015. College First co-mentor: Shannon Suty (with Taran Lichtenberger)
2014. Stevenson High School co-mentor: Kevin Cheng (with Jeremie Fant and Seana Walsh)
2014. College First co-mentor (with Lisa Hintz, Giselle Varrientos, Maggie Eshleman, and Alicia Foxx): Jada Washington and Ashley Garcia
2013. College First co-mentor: Edgar Padilla (with Becky Barak and Jessica Riebkes)
2013. Stevenson High School mentor: Tina Moazezi and Fabiola Yun
- 2005, 2006, 2009. Research co-mentor for College First high school students at Chicago Botanic Garden.

### Middle school student

- 2012, 2013, 2014. Science Fair Mentor: Grace Guarraia, Saints Faith, Hope and Charity School.

### Courses

- 2017, 2018, 2019. Northwestern University. Field and Laboratory Methods in Plant Biology and Conservation (PBC450): Seed biology module (2-days).
2014. Guest lecturer (one-day). Northwestern University (*Conservation Genetics*). On conservation of genetic diversity in *ex situ* collections.
2009. Guest lecturer (2-days) Northwestern University (*PBC 451 – BIO/SCI 335: Fundamentals of Plant Biology and Conservation*) on international plant conservation policy and the use of science to inform conservation policy and management decisions in the U.S.

### XI. Professional Service:

*Manuscript Reviewer* – American Journal of Botany, Biological Conservation, BioScience, Conservation Biology, Conservation Genetics, Diversity and Distributions, Ecological Applications, Ecological Restoration, Ecology and Evolution, Ecosphere, Evolutionary Applications, Horticulture Technology, Island Press, Journal of Applied Ecology, Journal of Heredity, Molecular Ecology, Natural Areas Journal, Oikos, Plant Biology, Plant Ecology, Seed Science Research, Restoration Ecology, Trends in Ecology and Evolution, Trends in Plant Science,

*External Reviewer* – Illinois Natural History Survey Research Program Leader Promotion external review

*Professional Society Memberships* – Botanical Society of America, Society for Ecological Restoration, Natural Areas Association

*Professional Service* – **Colorado Plateau Native Plant Program:** Member, Technical Committee (2012 - 2019); **American Public Gardens Association:** Chair plant conservation professional section (2010 – 2013); Co-

chair conservation track for Program Selection Committee (2009-2011); Vice-chair plant conservation professional section (2009 – 2010)