

Curriculum Vitae

NAME

Richard C. Pratt

ADDRESS

Department of Plant and Environmental Sciences
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ADMINISTRATIVE RESPONSIBILITY

Director, NMSU Semi-Arid Cropping Systems Research Innovation Program.

RESEARCH ACTIVITIES

Crop adaptation and management innovation to increase sustainability of agro-ecosystems subject to water constraints and changing climatic conditions. Utilization of genetic resources to develop “food-grade” (non-commodity) corn varieties for specialty markets. Characterization of southwestern landrace genetic resources. Evaluation of small grains heritage varieties for local identity preserved markets.

EDUCATION

<u>Degree</u>	<u>Year</u>	<u>Institution</u>	<u>Major</u>
Ph.D.	1985	Purdue University	Plant Breeding and Genetics
M.S.	1978	University of Arizona	Plant Sciences
B.S.	1976	University of Arizona	Horticulture

POSITIONS HELD

Professor and Director (2013 – present), Semi-Arid Cropping Systems Research Innovation Program, New Mexico State University, Las Cruces, NM.

Professor and Head (2011 - 2015) Department of Plant and Environmental Sciences, New Mexico State University, Las Cruces, NM.

Professor (2006 - 2011) Department of Horticulture and Crop Science, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, OH.

Associate Professor (1994 - 2006) Department of Horticulture and Crop Science, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, OH.

Assistant Professor (1987 - 1993) Department of Agronomy, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, OH.

TEACHING

At NMSU: Scientific Writing – How to be a Productive and Effective Writer (AGRO/HORT/SOIL 525/625), Agriculture in an Interconnected World (HON 321V), Special Topics (HORT 300) Special Problems (AGRO 449)

At OSU: Crop Breeding, Ecology of Tropical Food Crops, The Plant Genome, Special Topics (Population Genetics, Scientific Writing)

PROFESSIONAL ACTIVITIES (last ten years)

2018 – 2021	Secretary, Vice-Chair, Chair SCC-080, Plant Breeding Coordinating Committee
2017 – 2018	NMSU faculty mentor, Consortium for Advanced Bioeconomy Leadership Education (CABLE)
2013 – 2018	Member and Chair, Science Policy Committee, Crop Science Society of America
2009 – 2011	Chair, Crop Science Society of America, Chair, K-12 Education Committee
2006 – present	Member, Editorial Board, Compost Science and Utilization

AWARDS AND RECOGNITION (selected)

- Fellow, Crop Science Society of America – 2016
- International Service in Crop Science Award, Crop Science Society of America – 2006
- International Award of Merit, Gamma Sigma Delta, Honor Society of Agriculture – 2006
- African Crop Science Society Award (Fellow) – 2005

GRANTS RECEIVED (last ten years)

2022 – 2026	"Bridging Traditional Agriculture and Climate-Adaptive Organic Agriculture in the Southwest," USDA/National Institute of Food and Agriculture NIFA. PI Total Award: \$744,971.00. Principal Director.
2022 – 2023	"Cropping Systems-Convening Project," Santa Fe Community Foundation - Thornburg Foundation, \$15,000.00. Principal Investigator.
2020 – 2023	"Southwest Grain Collaborative – Cropping Systems Research Program," Private Foundations. \$192,571. Principal Investigator.
2018 – 2020	"A Participatory Plant Breeding Program to Achieve Improved Landrace Corn Production in Sustainable Southwestern Cropping Systems," Private Foundation. \$63,385. (Principal Investigators Pratt, R. and L. Grant).
2017 – 2020	"Consortium for Advanced Bioeconomy Leadership Education (CABLE)," Hall, D. (PD) et al. (twenty university consortium). USDA/NIFA \$3,000,000. Pratt, R. and Holguin, F. NMSU Faculty Mentors (to Co-Mentors \$40,000).
2017 – 2018	"Tepary Bean: A Prospective Non-thirsty Forage and Cover Crop," \$48,000, NMSU Competitive AES Graduate Assistantship Award. Principal Investigator.
2014 – 2018	"Breeding Non-Commodity Corn for Organic Systems," USDA/National Institute of Food and Agriculture OREI. \$1,900,687. Co-Principal Investigator (to Co-PI \$317,000).
2011 – 2015	"Strengthening Public Corn Breeding to Ensure Organic Farmers' Access to Elite Cultivars," USDA/National Institute of Food and Agriculture NIFA OREI. \$2,800,000. Co-Principal Investigator (to Co-PI: \$458,000).

REFEREED JOURNAL ARTICLES (last ten years)

- Pratt, R.C., B.J. Schutte, O.J. Idowu, M. Uchanski and L. Grant. 2022. Fall-sown small grain cover crops for weed suppression and soil moisture management in an irrigated organic agroecosystem. *Regen. Ag. Farm. Sys.* 38, <https://www.doi.org/10.1017/S174217052200028X>.
- Pratt, R.C., L. Grant, C. Velasco-Cruz, and L. Lauriault. 2022. Field performance of selected and landrace tepary bean varieties in diverse southwestern USA irrigated production environments. *Legume Sci.* 4(157), 1-8. <http://doi.org/10.1002/leg3.157>
- Pratt, R.C., C. Velasco-Cruz, M. Darapuneni, R. Montgomery, and L. Grant. 2021. Southwest-adapted maize germplasm as a potential genetic resource for selection of salinity tolerant cultivars. *Crop Science*. <https://doi.org/10.1002/csc2.20654>
- Montgomery, R.W., L. Grant, S. Hilborn, and R.C. Pratt. 2021. Rediscovering 'Mexican June' – A nearly extinct landrace maize variety. *Gen. Res. Crop Evol.* <https://doi.org/10.1007/s10722-021-01179-4>
- Nankar, A.N. and Pratt, R.C. 2021. Genotyping by sequencing reveals genetic relatedness of southwestern U.S. blue maize landraces. *Int. J. Mol. Sci.* 22: 3436. <https://doi.org/10.3390/ijms22073436>
- Hilborn, S., M. Petersen, and R.C. Pratt. 2021. Late summer organic tomato production with heat tolerant tomato cultivars. *Aust. J. Crop Sci.* 401- 408. <https://doi.org/10.21475/ajcs.21.15.03.p2892>
- Nankar, A.N., M.P. Scott and R.C. Pratt. 2020. Compositional analyses reveal relationships among components of blue maize grains. *Plants* 9: 1775. doi:10.3390/plants9121775
- Chimimba, J., R. Pratt, M. Cuellar, and E. Delgado. 2019. Quality parameters of masa and tortillas produced from blue maize (*Zea mays sp. mays*) landraces. *Jour. Food Sci.* 84(2):213-223 (DOI: 10.1111/1750-3841.14442)
- Huffman, R., C.A. Abel, L.M. Pollak, W. Goldstein, R.C. Pratt, M. Smith, K. Montgomery, S. Carlson, L. Grant, J. Edwards, P. Scott. 2018. Combining ability and environmental investigation of maize testcrosses in diverse organic production systems. *Crop Sci.* 58:1-11 (doi: 10.2135/cropsci2017.06.0364)

- Nankar, A.N., O. Holguin, P. Scott and R.C. Pratt. 2017. Grain and nutritional quality traits of southwestern U.S. blue maize landraces. *Cereal Chem. Jour.* 94:950-955. (<https://doi.org/10.1094/CCHEM-04-17-0079-R>)
- Nankar, A.N., L. Grant, P. Scott and R.C. Pratt. 2016. Agronomic and kernel compositional traits of blue maize landraces from the southwestern United States. *Crop Sci.* 56:2663-2674.
- Nankar, A.N., B. Dungan, N. Paz, N. Sudasinghe, T. Schaub, F.O. Holguin and R.C. Pratt. 2016. Quantitative and qualitative evaluation of kernel anthocyanins from southwestern United States blue corn. *J. Sci. Food Ag.* 96:4542-4552.
- Pratt, R.C., J.B. Holland, P.J. Balint-Kurti, N.D. Coles, J. Zwonitzer, M.A. Casey, and M.D. McMullen. 2015. Registration of the Ki14 × B73 recombinant inbred mapping population of maize. *Jour. Plant Reg.* 9: 262-265.
- Ryu, S.H., L. Werth, S. Nelson, J.S. Scheerens, and R.C. Pratt. 2013. Variation of kernel anthocyanin and carotenoid pigment content in borderland land races of maize. *Ec. Bot.* 67:98-109.
- Lyimo, H.J.F., Pratt, R.C. and R.S.O.W. Mnyuku. 2013. Infection process in resistant and susceptible maize (*Zea mays* L.) to *Cercospora zae-maydis*. *Plant Prot. Sci.* 49:11-18.
- Correa, V.R., D.R. Majerczak, E.-D. Ammar, M. Merighi, R.C. Pratt, S.A. Hogenhout, D.L. Coplin, and M.G. Redinbaugh. 2012. The bacterium *Pantoea stewartii* uses two different type III secretion systems to colonize its plant host and insect vector. *Appl. Environ. Microbiol.* 78:(17):6327-6336.
- Lyimo, H.J.F., R.C. Pratt, and R.S.O.W. Mnyuku. 2012. Composted cattle and poultry manure provide excellent fertility and improved management of gray leaf spot in maize. *Field Crops Research* 126:97-103.
- Lyimo, H.J.F., R.C. Pratt, and R.S.O.W. Mnyuku. 2012. Variation in aggressiveness among isolates of *Cercospora zae-maydis* in low-, medium- and high-altitude maize agro-ecologies of Tanzania. *Archives of Phytopathology and Plant Protection* 45:1076-1086.

BOOKS, BOOK CHAPTERS and REVIEW ARTICLES

chapters in edited books:

- Scott, P., R.C. Pratt, N. Hoffman, and R. Montgomery. 2018. Specialty Corns. p. 289-303. *In* S.O. Serna-Saldivar (ed.) *Corn Chemistry and Technology*. Elsevier, Duxford, UK. (3rd ed.)
- Goldstein, W.A., W.S., H. Burger, M. Messmer, L.M. Pollak, M.E. Smith, M.M. Goodman, F. J. Kutka, and R.C. Pratt. 2012. Maize: Breeding and Field Testing for Organic Farmers. p. 175-189. *In* E. Lammerts van Bueren and J. Myers (eds.) *Organic Crop Breeding*. Wiley-Blackwell, Hoboken, NY.
- Pratt, R.C. 2011. Tropical and Sub-Tropical Crops and Crop Production Systems. p. 489-516. *In* M. McMahon, A. Kofranek, and V. Rubatzky (eds.) *Plant Science: Growth, Development, and Utilization of Cultivated Plants*. Prentice Hall, NJ (5th ed.)
- Redinbaugh, M., and R.C. Pratt. 2009. Virus Resistance. p. 251-270. *In* J.L. Bennetzen and S.C. Hake (eds.) *Handbook of Maize: Its Biology*. Springer, New York. (2nd ed.)
- Pratt, R.C., D.M. Francis, and L.S. Barrero-Meneses. 2008. Genomics of Tropical Solanaceous Species: Established and Emerging Crops. p. 453-467. *In* P. Moore and R. Ming (eds.) *Genomics of Tropical Crops*. Springer/Verlag, Berlin/Heidelberg, Germany.
- Pratt, R.C. 2007. Tropical and Sub-Tropical Crops and Crop Production Systems. p. 411-440. *In* M. McMahon, A.M. Kofranek and V.E. Rubatzky (eds.) *Hartmann's Plant Science: Growth, Development, and Utilization of Cultivated Plants*. Pearson/Prentice Hall, NJ (4th ed.)
- Pratt, R.C., M.D. McMullen and R.A. Louie. 1993. Rationale for marker-assisted breeding of maize for virus resistance using restriction fragment length polymorphisms. p. 247-254. *In* G. Thottappilly, L.M. Monti, D.R.M. Raj and A.W. Moore (eds.) *Biotechnology: Enhancing research on Tropical Crops in Africa*. Technical Centre for Agricultural and Rural Coop., The Netherlands, and International Institute for Tropical Agriculture, Ibadan, Nigeria.
- Pratt, R. C. and G. P. Nabhan. 1988. Evolution and diversity of *Phaseolus acutifolius* Gray genetic resources. p. 409-440. *In* P. Gepts (ed.) *Genetic Resources, Domestication, and Evolution of Phaseolus Beans*. Nijhoff/Junk Publishers, Dordrecht, The Netherlands.

review articles (peer-reviewed):

- Brummer, C.E., W.T. Barber, S.M. Collier, T. S. Cox, R. Johnson, S.C. Murray, R.T. Olsen, R.C. Pratt, and A.-M. Thro. 2011. Plant breeding for harmony between agriculture and the environment. *Frontiers in Ecology and the Environment* 9 (10): 561-568.
- Poland, J.A., P.J. Balint-Kurti, R.J. Wisser, R.C. Pratt and R.J. Nelson. 2009. Shades of gray: the world of quantitative disease resistance. *Trends in Plant Science* 14:21-29.
- Pratt, R.C. and S.G. Gordon. 2006. Breeding for resistance to maize foliar pathogens. *In* Janick, J. (ed.) *Plant Breeding Reviews*. 27:119-173.

GERMPLASM RELEASES

Maize breeding populations: 11 Maize inbreds: Oh599, Oh603, Oh605, Oh610, GEMS:0002
 Maize RI mapping populations: 1 Common bean germplasm lines: 7

PATENTS

Rufener, G.K., A.J. Balducci, R.P. Mowers, R.C. Pratt, R.L. Louie, M. McMullen, J. Knoke. 1996. United States Patent No. 5,563,316 "Maize Chlorotic Dwarf Virus Resistant Maize and the Production Thereof."

PRESENTATIONS at INTERNATIONAL VENUES (last ten years)

- "NMSU OREI Corn Breeding: Temperate to Sub-tropical" Pratt, R. C., Maize Research Institute, Hongcheon, S. Korea, *Invited presentation*. January 18, 2016.
- "Public and Private Sector Breeding in the USA: Lessons from the Past, Present Transitions, and Future Directions" Pratt, R. C., Golden Seed Project Annual Symposium, Korea Institute of Planning and Evaluation in Food, Agriculture, Forestry, and Fisheries, Jeju Island, S. Korea, *Invited presentation*. January 22, 2016.
- "Crop Production and Water Issues in New Mexico" China Agricultural University, Beijing, China. June 12, 2014.

SERVICE ACTIVITIES (selected)

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| 2022 – present | Member, George Washington Carver Scholars Committee, National Association of Plant Breeders |
| 2019 – present | Member, Southwest Grain Collaborative Advisory Board |
| 2018 – present | Member, Secretary, Vice-Chair, Chair, Public Plant Breeding Coordinating Committee, SCC-080 |
| 2019 – 2022 | Member, Borlaug Scholars Committee, National Association of Plant Breeders |
| 2018 – 2021 | Member, NMSU Faculty Senate and Faculty Affairs Committee |
| 2018 – 2020 | Member, Chair, PES Awards Committee |
| 2017 – 2020 | Member, The William Conroy Honors College Advisory Board |
| 2014 – 2019 | Member, New Mexico Landrace Corn Project Advisory Board |
| 2016 – 2019 | Co-Coordinator for Master's International and Returning Peace Corps Volunteer Coverdell Scholars Program, and Coordinator of RPCV Graduate Assistantships |
| 2012 – 2017 | Advisor, PES/PES-EPPWS Graduate Student Organization |
| 2012 – 2015 | Member, NMSU Graduate School Council and Chair of Standards Committee |