William Tracy, Ph.D

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William F. Tracy is a professor in the department of agronomy at the University o Wisconsin-Madison. He is a sweet corn breeder and studies the genetics, biochemistry and physiology of sweet corn quality and productivity. He received a B.S. and M.S. in plant and soil science from the University of Massachusetts Amherst and a Ph.D. in Plant Breeding and Biometry from Cornell University. In 1984, after brief stints in industry at the International Plant Research Institute and Cargill Inc., Bill joined the department of agronomy at UW-Madison as an assistant professor. He served as department chair for 14 years and as interim dean of the college for 14 months. Bill and his team have developed sweet corn inbreds that are in commerce on every continent where sweet corn is grown. In 2014, Bill received the Genetics and Plant Breeding Award from the National Association of Commercial Plant Breeders and in in 2017, was named the Clif Bar and Organic Valley Chair in Breeding for Organic Systems. In 2018 he was elected fellow of the Crop Science Society of America and in 2020 a Fellow of The American Association for the Advancement of Science. In 2023 he received the Spitze Land Grant Faculty Award for Excellence.

EDUCATION:

Ph.D.	Cornell University, Major: Plant Breeding. Minors: Genetics, Agronomy.	May 1982
M.S.	University of Massachusetts, Amherst. Major: Plant and Soil Sciences. Minor: Botany	May 1979
B.S.	University of Massachusetts, Amherst. Major: Plant and Soil Sciences, Magna Cum Laude. Boston College, 1972–1974, Major: Biology.	May 1976

PROFESSIONAL EXPERIENCE:

Rank	Place	Date
Professor	Department of Agronomy-UW-Madison	7/1996–present
Chair	Agroecology master's degree program	9/2019–present
Department Chair	Department of Agronomy-UW-Madison	6/2004–2018
Interim Dean	College of Agricultural and Life Sciences	1/2011–3/2012
Friday Endowed Chair	College of Agricultural and Life Sciences	7/2009–6/2016
Associate Professor	Department of Agronomy-UW-Madison	7/1990–6/1996
Assistant Professor	Department of Agronomy-UW-Madison	9/1984–6/1990
Senior Corn Breeder	Cargill Incorporated, Grinnell, IA	7/1983-8/1984
Research Scientist	International Plant Research Institute, San Carlos, CA	1/1982–6/1983

AWARDS AND HONORS:

- Spitze Land Grant Faculty Award for Excellence, CALS UW-Madison 2023
- Clif Bar and Organic Valley Endowed Chair, CALS UW-Madison, 7/2016 – 2023.
- Fellow, American Association for the Advancement of Science, 2020
- Fellow, Crop Science Society of America, 2018
- 2014 National Public Plant Breeding Award. National Council of Commercial Plant Breeders.
- WALSAA 40 in 40 Award. 2012. Wisconsin Agricultural and Life Sciences Alumni Association.
- Friday Chair of vegetable research CALS UW-Madison 6/2009 – 6/2016
- Honored Instructor 2012, 2014, 2015 University Housing
- Jung Outstanding Teaching Award 2004 CALS UW-Madison
- Outstanding Teaching Award, 1997, Wisconsin Teacher Enhancement in Biology Program, University of Wisconsin-Madison

Research Interests: Sweet corn breeding and genetics for quality, productivity, and pest resistance. Breeding for organic and participatory systems. Genetics, genomics, biochemistry, and modification of endosperm starch biosynthesis. Origins and history of sweet corn. Planting breeding for organic systems.

Teaching Interests: Undergraduate and graduate instruction and advising in agronomy, agroecology, and plant breeding and plant genetics. Courses: Agronomy 100 "Principles and Practices of Crop Production; Agroecology 701 Introductory Agroecology; Plant Path 367 Introduction to Organic Agriculture.

Students advised:

Graduated			Current		
Ph.D.	M.S.	B.S.	Ph.D.	M.S.	B.S.
27	22	~400	4	7	~25

Professional Societies:

American Association for the Advancement of Science
American Society for Horticultural Science
Crop Science Society of America
American Society of Agronomy
International Sweet Corn Development Association
Maize Genetics Cooperative
Ecological Society of America

Germplasm Releases

(* developed under certified organic conditions).

- **Hybrids:** 'Sweet Success', 'Natural Sweet 9000', 'Radiance', *'Bling', *'My Fair Lady', *'Sweet Magnolia', *'Honey Crunch'
- **Open pollinated varieties:** *'Who Gets Kissed?', *'Sweet Kisses' '*Honey Badger', *'Quick Kiss', '*Olympic Sweet.'
- **Inbreds:** More than 50 released to commercial sector. 12 have attained some level of commercial success, current revenue generation for program, approximately $500,000/year)
- **Populations:** 'New Spanish Gold', 'Country Gentleman sh2' 'Golden Early Market sh2' 'Wisconsin Early Sugary Enhancer Synthetic', 'sh2Lancaster', 'sh2SSS', Mexican Dent sh2 (rust), Caribbean Flint sh2 (NCLB), Hawaiian temperate bt2 (rust), Red su1 (rust)
- **Genetic Stocks:** Wvg1, Wvg2, Wvg3, Wvg4, Wvg5, WVg7; W822GSe and W822Gse]

PUBLICATIONS:
Refereed Journals

Holland, J.B., Willcox, M.C., Samayoa-Lopez, F., Woore, M.S., Salazar-Vidal, M.N., Tracy, W.F. (2025) Oaxacan Green Dent maize is not from Oaxaca(CROP-2024-11-0838-OA.R1),

Branch, C., Baseggio, M., Resende, M., Tracy, W.F. (2024) The sugary enhancer1 (se1) Allele is Associated with Significant Decreases in Carotenoids and Tocotrienols in Yellow (Y1) sugary1 (su1) Sweet Corn. Journal of American Society of Horticultural Science.

Schattman, R.E. Merrill, S.C. Tracy, W.F. Lehmann, P. (2024) Shifts in geographic vulnerability of US corn crops under different climate change scenarios: corn flea beetle (Chaetocnema pulicaria) and Stewart's Wilt (Pantoea stewartii) bacterium. Environmental Entomology

DOI: 10.1093/ee/nvae099

McCluskey, C.A. Tracy, W.F. (2024) Data blanks by design: Intellectual property and restrictions on genetic diversity assessments of the maize standing crop in the USA Upper Midwest. Plants, People, Planet DOI:10.1002/ppp3.10531

Wilson, A.R., Fiore, I.G., McCluskey, C.A., Tracy, W.F. (2024) Genetic variation for endosperm carbohydrates and total soluble solids in shrunken2, sugary1, waxy1, and wild-type near-isogenic corn lines across three harvest dates. Crop Science http://dx.doi.org/10.1002/csc2.21239

Peixoto, A., Leach, K., Jarquin, D., Flannery, P., Zystro, J., Tracy, W.F., Lopes Bhering, L., Resende. M. (2024) Utilizing genomic prediction to boost hybrid performance in a sweet corn breeding program. Frontiers in Plant Science, section Plant Breeding. https://doi.org/10.3389/fpls.2024.1293307

Williams II, M.W., Hausman, N.E., Saballos, A., Landau, C.A., Brooks, M.D., Flannery, P., Tracy. W.F., Thompson, C.J. (2023) First report of severe tolpyralate sensitivity in corn (Zea mays) discovers a novel genetic factor conferring crop response to an herbicide. Pest Management Science. (wileyonlinelibrary.com) DOI 10.1002/ps.7896

Branch, C.A. & Tracy, W.F. (2023). Divergent selection for timing of vegetative phase change. Crop Science. 2023;1–9.

Yactayo-Chang, J.P., Boehlein, S., Beiriger, R.L., Resende M.F.R., Jr., Bruton, R.G., Alborn, H.T., Romero, M., Tracy, W.F, & Block. A.K. (2022). The Impact of Post-Harvest Storage on Sweet Corn Aroma. Phytochemistry Letters 52:33–39.

Colley, M.C., Dawson, J.C., McCluskey, C., Myers, J.R., Tracy, W.F., & Lammerts van Bueren, E.T. (2022). Exploring the emergence of participatory plant breeding in countries of the global North. The Journal of Agricultural Science. https://doi.org/10.1017/S0021859621000782

Colley, M.C., Tracy W.F., Lammerts van Bueren, E., Diffley, M., & Almekinders, C. (2022). How the seed of participatory plant breeding found its way in the world through adaptive management. Sustainability. 14 (2132), https:// doi.org/10.3390/su14042132

Finegan, C., Boehlein, S.K., Leach, K.A., Madrid, G., Hannah, C.L, Koch, K.E., Tracy, W.F., & Resende, M.F.R. Jr. (2022). Genetic Perturbation of the Starch Biosynthesis in Maize Endosperm Reveals Sugar-Responsive Gene Networks. Frontiers in Plant Science. Front. Plant Sci. https://doi.org/10.3389/fpls.2021.800326

Baseggio, M., Murray, M., Wu, D., Ziegler, K.N., Chamness, J., Buckler, E.S., Hamilton. J.P., Buell, C.R., Vatamaniuk, O.K., Buckler, E.S., Smith, M.E., Baxter, I., Tracy, W.F., & Gore, M.A. (2021). A genome-wide association study reveals an independent genetic basis of zinc and cadmium concentrations in fresh sweet corn kernels. G3-2021-402240

Hislop, L., Stephanie, E., Flannery, P.J., Baseggio, M., Gore, M.A, & Tracy, W.F. (2021). Sugarcane Mosaic Virus Resistance in the Wisconsin Sweet Corn Diversity Panel. Journal of American Society for Horticultural Science. J. Amer. Soc. Hort. Sci. 146(6):435–444

Hu, Y., Colantonio, V., Müller, B.S.F., Leach, K., Nanni, A., Finegan, C., Wang, B., Baseggio, M., Newton, C.J, Juhl, E.M., Hislop, L., Gonzalez, J.M., Rios, E.F., Hannah, L.C., Swarts, K., Gore, M.A,, Hennen-Bierwagen, T.A., Myers, A.M., Settles, A.M., Tracy, W.F., & Resende, M.F.R. Jr. (2021) .Genome assembly and population genomic analysis provide insights into the evolution of modern sweet corn. Nat Comm. 12, 1227

Ivancic, K., Locatelli, A., Tracy, W.F., & Picasso, V. (2021). Kernza intermediate wheatgrass (Thinopyrum intermedium) response to a range of vernalization conditions. Canadian Journal of Plant Science 10:1139.

McCluskey, C. & Tracy, W.F. (2021). Engaging Farmer Stakeholders: Maize Producers' Perceptions and Strategies for Managing On-Farm Genetic Diversity in the Upper Midwest. Sustainability, 13: 8843, https://www.mdpi.com/2071-1050/13/16/8843/htm

Revilla, P., Anibas, C.M. & Tracy, W.F. (2021). Sweet Corn research around the world 2015– 2020. Agronomy 11(34). https://doi.org/10.3390/agronomy11030534

Solemslie, R., du Toit, L.J., Tracy, W.F., & Stearns, T. (2021). Evaluation of steam treatments for Fusarium spp. and other fungi on sweet corn seed. Plant Disease Management Reports 15(CF017).

Zystro, J., Peters, T., Miller, K., & Tracy, W.F. (2021). Classical and genomic prediction of synthetic open pollinated sweet corn performance in organic environments. Crop Science. 61:3382–3391.

Zystro, J., Peters, T., Miller, K., & Tracy, W.F. (2021). Inbred and hybrid sweetcorn genotype performance in diverse organic environments. Crop Science. 61:2280-2293.

Moore, V.M., & Tracy, W.F. (2020). Combining ability of husk extension, maysin content, and corn earworm resistance. Journal of American Society of Horticultural Science 146:14-23.

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Renjie, L., Boehlein, S.K., Tracy, W.F., Resende, M.F. R. Jr., & Hudalla, G.A. (2020). Characterizing the Physical Properties and Cell Compatibility of Phytoglycogen Extracted from Different Sweet Corn Varieties. Molecules. 25: 367-351.

Zystro, J., Peters, T., Miller, K., & Tracy, W.F. (2020). Classical and genomic prediction of hybrid sweet corn performance in organic environments. Crop Science. 60:1698-1708.

Allam, M., Ordás, B., Djemel, A., Tracy, W.F., & Revilla, P. (2019). Linkage disequilibrium between fitness QTLs and the sugary1 allele of maize. Mole. Breeding 39(3) https://doi.org/10.1007/s11032-018-0911-1

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Gage, J.L., Vaillancourt, B., Hamilton, J.P., Manrique-Carpintero, N.C., Gustafson, T.J., Barry, K., Lipzen, A., Tracy, W.F., Mikel, M.A., Kaeppler, S.M., Buell, C.R., & de Leon, N. (2019). Multiple maize reference genomes impact the identification of variants by GWAS in a diverse inbred panel. Plant Genome doi:10.3835/plantgenome2018.09.0069.

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Shelton, A.C. & Tracy, W.F. (2017). Cultivar development in the US public sector. Crop Science. Crop Science 57: 1823-1835.

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De Vries, B.D., Shuler, S., and Tracy, W.F. (2016). Endosperm Carbohydrates in Pseudostarchy and Extreme-sugary Maize Inbreds During Kernel Development. Crop Science 56: 2448-2456.

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Shelton, A.C. and Tracy, W.F. (2016). Participatory plant breeding and organic agriculture: A synergistic model for organic variety development in the United States. Elem Sci Anth. 2016; 4(143). DOI: http://doi.org/10.12952/journal.elementa.000143

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De Vries, B.D. & Tracy, W.F. (2015). Characterization of endosperm carbohydrates in isa2-339 maize and interactions with su1-ref. Crop Science 55:2277-2286.

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Dodson, H.G. & Tracy, W. F. (2015). Endosperm carbohydrate composition and kernel characteristics of shrunken2-intermediate (sh2-i/sh2-i Su1/Su1), and shrunken2-intermediate, sugary1 (sh2-i/sh2-i su1/su1) in sweet corn (Zea mays) Crop Sci. 55:2647-2656.

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Tracy, W.F. 2020. Breeding organic sweet corn. Illinois Corn Breeders School. Champaign Illinois.

Tracy, W.F. 2020. Sweet Corn Endosperm Genetics: Examples of Plant Breeding Innovation in the Public Sector. College Station, TX

Tracy, W.F. 2020. Sweet Corn Endosperm Genetics: Examples of Plant Breeding Innovation in the Public Sector. Ithaca, NY

Tracy, W.F. 2020. Breeding Sweet Corn for Organic Cropping Systems. Champaign, IL.

Tracy, W.F. 2019. Manipulating Endosperm Starch Synthesis & Creating New Products, Chicago IL.

Tracy, W.F. 2019. 1838-1918-2018. The Creative Power of Selection History and Examples. St. Paul, MN.

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