

**BIOGRAPHICAL SKETCH: CAROLYN J. LAWRENCE**

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**Professional Preparation**

<b>Institution</b>	<b>Major</b>	<b>Degree</b>	<b>Year(s)</b>
Hendrix College	Biology	B.A.	1996
Texas Tech University	Biology	M.S.	1997
University of Georgia	Botany	Ph.D.	2003
Iowa State University	Bioinformatics	Postdoc	2003-2005

**Appointments**

Associate Professor	Depts. of Genetics, Development and Cell Biology & Agronomy	Iowa State University	2014-present
Research Geneticist	Corn Insects and Crop Genetics Research Unit	USDA-ARS	2005-2013

**Products (most relevant to proposal)**

Campbell, MS, Law, MY, Holt, C, Stein JC, Moghe GD, Hufnagel DE, Lei, J, Achawanantakun, R, Jiao, D, Lawrence CJ, Ware, D, Shiu, SH, Childs, K, L, Sun, Y, Jiang, N, & Yandell, M (2014) MAKER-P: a tool kit for the rapid creation, management, and quality control of plant genome annotations. *Plant Physiology* 164(2): 513–524.

Monaco, MK, Sen, TZ, Dharmawardhana, PD, Ren, L, Schaeffer, M, Naithani, S, Amarasinghe, V, Thomason, J, Harper, L, Gardiner, J, Cannon, EKS, Lawrence, CJ, Ware, D, & Jaiswal, P (2013) Maize Metabolic Network Construction and Transcriptome Analysis. *The Plant Genome*, 2013(6), doi:10.3835/plantgenome2012.09.0025.

Robbins, RJ, Amaral-Zettler, L, Bik, H, Blum, S, Edwards, J, Field, D, Garrity, G, Gilbert, JA, Kottmann, R, Krishtalka, L, Lapp, H, Lawrence, C, Morrison, N, Tuama, EO, Parr, C, San Gil, I, Schindel, D, Schriml, L, Vieglas, D, & Wooley, J (2012) RCN4GSC Workshop Report: managing data at the interface of biodiversity and (meta) genomics, March 2011. *Standards in Genomic Sciences*, 7, 159.

Cannon, EKS, Birkett, SM, Braun, Bremen L, Kodavali, S, Jennewein, DM, Yilmaz, A, Antonescu, V, Antonescu, C, Harper, LC, Gardiner, JM, Schaeffer, ML, Campbell, DA, Andorf, CM, Andorf, D, Lisch, D, Koch, KE, McCarty, DR, Quackenbush, J, Grotewold, E, Lushbough, CM, Sen, TZ, & Lawrence, CJ (2011) POPcorn: an online resource providing access to distributed and diverse maize project data. *International Journal of Plant Genomics*, 2011 doi: 10.1155/2011/923035.

Green, JM, Harnsomburana, J, Schaeffer, ML, Lawrence, CJ & Shyu, C-R (2011). Multi-source and ontology-based retrieval engine for maize mutant phenotypes. Database: the Journal of Biological Databases and Curation, 2011, doi:10.1093/database/bar012.

**Products (others of significance)**

Ghaffari, R, Cannon, EKS, Kanizay, LB, Lawrence, CJ & Dawe, RK (2012) Maize chromosomal knobs are located in gene-dense areas and suppress local recombination. *Chromosoma*, 122(1-2), 67-75.

Lushbough, C, Bergman, MK, Lawrence, CJ, Jennewein, D & Brendel, V (2010). BioExtract Server, an integrated workflow-enabling system to access and analyze heterogeneous, distributed biomolecular data. *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)*, 7, 12-24.

Sen, TZ, Andorf, CM, Schaeffer, ML, Harper, LC, Sparks, ME, Duvick, J, Brendel, VP, Cannon, E, Campbell, DA & Lawrence, CJ (2009). MaizeGDB becomes ‘sequence-centric’. *Database: The Journal of Biological Databases and Curation*, 2009, bap020.

- Lawrence, CJ, Harper, LC, Schaeffer, ML, Sen, TZ, Seigfried, TE & Campbell, DA (2008). MaizeGDB: The maize model organism database for basic, translational, and applied research. *International Journal of Plant Genomics*, 496957 doi: 10.1155/2008/496957.
- Lawrence, CJ & Walbot, V (2007). Translational genomics for bioenergy production from fuelstock grasses: maize as the model species. *The Plant Cell*, 19, 2091-2094.

### Synergistic Activities

2014-present	Organizer, Plant Phenotype Pilot Project for the NSF's Phenotype RCN
2013-present	Invited member, iPlant Scientific Advisory Board (one of seven)
2010-present	Elected member, Maize Genetics Executive Committee (current chair)
2013	Meeting Organizer, Big Data and Computing: Building a Vision for ARS Information Management (one of four)
2005-2013	Director, Maize Genetics and Genomics Database (MaizeGDB)

### Collaborators and Other Affiliations

**Collaborators:** V Amarasinghe, Oregon State; C Andorf, USDA-ARS; D. Andorf, ISU; C Antonescu, DFCI; V Antonescu, DFCI; H Bass, Florida State; P Becraft, ISU; M Bevan, John Innes; H Bik, Univ. New Hampshire; S Birkett, Pioneer; S Blum, CA Academy of Sci; BL Braun, AZ State; V Brendel, Indiana; T Brutnell, Boyce Thompson; B Buckner, Truman State; CR Buell, Michigan State; D Campbell, ISU; M Campbell, Univ. Utah; EKS Cannon, ISU; K Childs, Michigan State; K Cone, Univ. Missouri; P Dharmawardhana, Oregon State; RK Dawe, Univ. Georgia; J Dickerson, ISU; Q Dong, Univ. North Texas; J Duvick, ISU; J Edwards, Smithsonian; D Field, Centre for Ecology & Hydrology, UK; A Fu, ISU; J Gardiner, ISU; G Garrity, Michigan State; D Gessler, Univ. AZ; R Ghaffari, Univ. Georgia; J Gilbert, Argonne National Lab; S Goff, Univ. AZ; J Gray, Ohio State; J Green, Univ. Missouri; E Grotewold, Ohio State; S Hake, USDA-ARS; J Harnsomburana, Univ. Missouri; L Harper, USDA-ARS; E Huala, Carnegie; D Hufnagel, Michigan State; P Jaiswal, Oregon State; D Jennewein, Univ. SD; N Jiang, Michigan State; S Kaeppler, Univ. Wisconsin; L Kanizay, Univ. Georgia; K Koch, Univ. FL; S Kodavali, Microsoft; R Kottman, Max Planck; L Krishtalka, Univ. Kansas; S Kurtz, Universität Hamburg; H Lapp, NESCent; MY Law, Univ. Utah; J Lei, Michigan State; D Jiao, UT Austin; D Lisch, UC Berkeley; C Lushbough, Univ. SD; E Lyons, Univ. AZ; D McCarty, Univ. Florida; S McCouch, Cornell; T Mockler, Oregon State; G Moghe, Michigan State; M Monaco, CSHL; S Moose, Univ. Illinois; N Morrison, University Manchester, UK; L Mueller, Boyce Thompson; U Muppirala, ISU; S Naithani, Oregon State; D Nettleton, ISU; C Parr, Smithsonian; A Paterson, Univ. Georgia; T Peterson, ISU; J Quackenbush, DFCI; L Ren, CSHL; R Robbins, UCSD; S Rhee, Carnegie; D Rokhsar, JGI; M Sabharwal, ISU; M Sachs, USDA-ARS; I San Gil, Univ. NM; M Scanlon, Cornell; M Schaeffer, USDA-ARS; D Schindel, Smithsonian; S Schlueter, Purdue; P Schnable, ISU; L Schriml, Univ. MD; TZ Sen, USDA-ARS; SH Shiu, Michigan State; CR Shyu, Univ. Missouri; G Mendes Souza, Universidade de São Paulo; M Sparks, USDA-ARS; N Springer, Univ. Minnesota; J Stein, CSHL; L Stein, Ontario Institute for Cancer Res; N Stein, IPK; Y Sun, Michigan State; J Thomason, CSHL; M Timmermans, CSHL; ÉÓ Tuama, GBIF Secretariat, Denmark; D Viegles, Univ. Kansas; E Vollbrecht, ISU; V Walbot, Stanford; GL Wang, Ohio State; D Ware, USDA-ARS; J Wooley, UCSD; M Yandell, Univ. Utah; A Yilmaz, Ohio State; L Amaral-Zettler, MBL.

**Advisors:** M.S. Advisor: AS Holaday, Texas Tech; Ph.D. Advisors: RK Dawe & RL Malmberg, Univ. Georgia; Postdoctoral Advisor: V Brendel, Indiana Univ.

**Advisees:** Postdoctoral: VM Cruz, USDA-ARS; J Peterson, BASF Doctoral: Mingze Hu (current); K Wimalanathan, ISU (co-major professor, current); J Walsh, ISU (current); S Hill-Skinner, ISU (current); D Hessel, Pioneer; J Woody, Pioneer; G Kir, ISU; T Goodman, Vermillion High School; L Ye, Genome Sequencing Center at WashU; Matthew Wilkerson, Univ. NC; Masters: M Harvey, Monsanto.