

NORMAN B. BEST

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[Google Scholar Page](#)

Curriculum Vitae

RESEARCH EXPERIENCE

USDA-ARS Research Geneticist 2020-Present

USDA-NIFA Postdoctoral Fellow- University of Missouri 2019-2021

Fellowship Co-advisors: Paula McSteen, Ruthie Angelovici, and Robert Sharp

Post-Doctoral Researcher- University of Missouri 2017-2020

Advisor: Paula McSteen

USDA-NIFA Predoctoral Fellow- Purdue University 2017-2018

PhD Graduate Research Assistant- Purdue University 2011-2017

Thesis Title: Genetic and biochemical regulation of maize architecture

Thesis Co-advisors: Brian Dilkes and Guri Johal

Undergraduate Research Assistant- Purdue University 2010-2011

Advisor: Brian Dilkes

Undergraduate Research Assistant- Purdue University 2009-2010

Advisor: Burkhard Schulz

EDUCATION

Doctor of Philosophy, Purdue University August 2017

Bachelor of Science, Purdue University May 2011

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PUBLICATIONS

† Indicates co-first author

* Indicates corresponding authorship

Peer reviewed publications

Best NB, Addo-Quaye C, Kim BS, Weil CF, Schulz B, Johal G, Dilkes BP (2021) Mutation of the nuclear pore complex component, *aladin1*, disrupts asymmetric cell division in *Zea mays* (maize). *G3* 11:jkab106.

†Matthes MS, †**Best NB**, Robil JM, Malcomber S, Gallavotti A, McSteen P (2019) Auxin EvoDevo: Conservation and diversification of genes regulating auxin biosynthesis, transport, and signaling. *Molecular Plant* 12:298-320.

Yao H, Skirpan A, Wardell B, Matthes MS, **Best NB**, McCubbin T, Durbak A, Smith T, Malcomber S, McSteen P (2019) The *barren stalk2* gene is required for axillary meristem development in maize. *Molecular Plant* 12:374-389.

Yang J, Thames S, **Best NB**, Jiang H, Huang P, Dilkes BP, Eveland EL (2018) Brassinosteroids modulate meristem fate and differentiation of unique inflorescence morphology in *Setaria viridis*. *Plant Cell* 30(1):48–66.

Best NB, Johal G, Dilkes BP (2017) Phytohormone inhibitor treatments phenocopy brassinosteroid- gibberellin dwarf mutant interactions in maize. *Plant Direct* 2:1-18.

Best NB, Hartwig T, Budka JS, Fujioka S, Johal G, Schulz B, Dilkes BP (2016) *nana plant2* encodes a maize ortholog of the Arabidopsis brassinosteroid biosynthesis gene DWARF1, identifying developmental interactions between brassinosteroids and gibberellins. *Plant Physiology* 171(4): 2633–2647.

***Best NB**, Wang X, Brittsan S, Dean E, Helfers SJ, Homburg R, Mobley ML, Spindler TL, Xie B, Hasegawa PM, Joly RJ, Rhodes D, *Dilkes BP (2016) Sunflower ‘Sunspot’ is hyposensitive to GA₃ and has a missense mutation in the DELLA motif of *HaDELLA1*. *JASHS* 141(4): 889–894.

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Addo-Quaye C, Buescher E, Chaikam V, **Best NB**, Baxter I, Dilkes BP (2016) Forward genetics by sequencing EMS variation induced inbred lines. *G3*. g3.116.029660.

†**Best NB**, †Hartwig T, Budka JS, Bishop BJ, Brown E, Potluri DP, Cooper BR, Premachandra GS, Johnston CT, Schulz B (2014) Soilless plant growth media influence the efficacy of phytohormones and phytohormone inhibitors. *PLoS ONE*. 9(12):e107689.

Hartwig T, Corvalan C, **Best NB**, Budka JS, Zhu JY, Choe S, Schulz B (2012) Propiconazole is a specific and accessible brassinosteroid (BR) biosynthesis inhibitor for Arabidopsis and maize. *PLoS ONE* 7(5): e36625.

Technical publications

Best NB, Hartwig T, Budka JS, Schulz B, Weil C, Dilkes BP (2016) New *nana plant1 (na1)* allele. *Maize Genetics Cooperation Newsletter*. Vol. 90.

Best NB, Budka JS, Schulz B, Weil C, Dilkes BP (2014) New EMS-induced allele of *terminal ear1 (te1)* allele in the B73 background. *Maize Genetics Cooperation Newsletter*. Vol. 88.

GRANTS AND SCHOLARSHIPS

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| USDA-NIFA postdoctoral fellowship, Missouri | 2019-2021 |
| Douglas Randall travel award grant, Missouri | 2018 & 2020 |
| USDA-NIFA predoctoral fellowship, Purdue | 2017-2019 |
| Travel award grant, PGRSA Conference, Denver | 2012 |
| Undergrad research grant, School of Agriculture, Purdue | 2010 |
| Garden Club of Indiana scholarship, Purdue | 2010 |
| Muriel Rumsey Trust scholarship, Purdue | 2009 & 2010 |

TEACHING EXPERIENCE

Instructor Experience

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| Teaching Assistant BCHM290, Experimental Design, Purdue | 2016 |
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Teaching Assistant HORT301, Plant Physiology, Purdue 2013, 2014, & 2015

Teaching Assistant HORT201, Plant Propagation, Purdue 2014 & 2015

Lab research supervisor of four undergraduate students, HORT301, Purdue 2011 & 2012

Guest Teaching Lectures

BIO_SC 2200 Missouri, “Eukaryotic Linkage Mapping”, “Two and three point test crosses”,
“DNA structure and replication”, and “Transcription” 2019 & 2020

HORT 301 Purdue, “Floral organ development in Angiosperms” 2013-2016

BCHM 290 Purdue, “Modern biological data warehousing” and “Platt’s ‘Strong Inference’ and
the history of discovery in molecular biology” 2016, 2017

Students Directly Mentored

Paige Spencer, Freshman in Plant Sciences Student, Missouri 2019-2020

QTL mapping of auxin sensitivity in maize NAM RILs

Stephanie Sage, Undergraduate Researcher, Missouri 2019-2020

las1 interaction with meristem maintenance pathway in maize

Joseph Struttmann, Undergraduate Researcher, Missouri 2017-2020

TIR/AFB gene function in maize

Mika Nevo, REU summer intern, Missouri 2019

Next-generation sequence analysis of *tls4* mutant in maize

Austin Morgan, REU summer intern, Missouri 2018

Next-generation sequence analysis of *Sos3* mutant in maize

Rhea Sablani, REU summer intern, Missouri 2018

Next-generation sequence analysis of *lsn1* mutant in maize

Jenna Boehler, Freshman in Plant Sciences Student, Missouri 2017-2018

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Natural variation to auxin sensitivity in maize

Katharine Eastman, Undergraduate Researcher, Purdue University

2016-2017

Discovery of mutants defective in gravitropic growth of shoots in maize

HONORS AND AFFILIATIONS

Awards

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| 3 rd place poster presentation, MU Plant Research Symposium, Columbia | 2020 |
| Life Sciences Center Person of the Month, February, Columbia | 2020 |
| 2 nd place Ph.D./Post-Doc oral presentation, HLA Retreat, West Lafayette | 2016 |
| Teaching Academy Graduate Teaching Award, HLA Department, Purdue | 2015 |
| 1 st place Ph.D./Post-Doc oral presentation, HLA Retreat, West Lafayette | 2015 |
| 2 nd place Ph.D./Post-Doc poster presentation, HLA Retreat, West Lafayette | 2014 |
| 2 nd place oral presentation award, ASPB MW Meeting, Chicago | 2013 |
| 1 st place oral presentation award, PGRSA Conference, Denver | 2012 |
| 1 st place undergrad poster award, HLA Retreat, West Lafayette | 2011 |
| 2 nd place undergrad poster award, ASPB MW Meeting, West Lafayette | 2010 |

Professional Society Memberships

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| American Association for the Advancement of Science Member | 2014-Present |
| American Society of Plant Biologists Member | 2014-Present |
| Plant Growth Regulation Society of America Member | 2012-2013 |

Service and Leadership

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| Interdisciplinary Plant Group (IPG)- Executive Committee Member, Missouri | 2018-2020 |
| Interdisciplinary Plant Group (IPG)- Student/Post-Doc Org. Rep., Missouri | 2018-2020 |

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| Session Chair- IPG Retreat, Missouri | 2019 |
| Purdue Graduate Student Government Senator, Purdue | 2013 & 2014 |
| Graduate Student Affairs Committee Member, Purdue | 2013 & 2014 |
| Parking and Traffic Committee Member, Purdue | 2013 & 2014 |

PRESENTATIONS

Oral Presentations

- 2021 MU Division of Biological Sciences Seminar Series, Columbia: “Genetic and hormonal control of maize architecture”
- 2021 MU Division of Plant Sciences and Technology Seminar Series, Columbia: “Genetic and hormonal control of maize architecture”
- 2020 62nd Annual Maize Genetics Conference, Virtual: “The *lateral suppressor1* gene encodes a GRAS transcription factor required for axillary meristem development in maize”
- 2019 Plant Talks, Columbia: “The *lateral suppressor1* gene is required for axillary meristem development in maize.”
- 2019 Development Meeting, St. Louis: “The *lateral suppressor1* gene is required for axillary meristem development in maize.”
- 2017 Plant Talks, Columbia: “The nuclear pore complex component, *aladin1*, is necessary for asymmetric division in maize.”
- 2017 ASPB MW Meeting, West Lafayette: “The nuclear pore complex component *aladin* is necessary for tassel architecture and asymmetric cell division in maize.”
- 2016 58th Annual Maize Genetics Conference, Jacksonville: “Forward genetics identifies the nuclear pore complex component, *aladin*, as necessary for tassel architecture and asymmetric cell division in maize”
- 2016 HLA Annual Science Retreat, West Lafayette: “Forward genetics approach to identify *aladin* as a member of the nuclear pore complex in maize.”

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- 2015 HLA Annual Science Retreat, West Lafayette: “The genetic interactions between brassinosteroid and gibberellic acid biosynthetic mutants in maize are developmentally specific.”
- 2013 ASPB MW Meeting, Chicago: “Efficacy of propiconazole, a brassinosteroid inhibitor, on plant growth media substrates.”
- 2012 PGRSA Conference, Denver: “Propiconazole is a specific and accessible brassinosteroid (BR) biosynthesis inhibitor for Arabidopsis and maize.”
- 2012 HLA Annual Science Retreat, West Lafayette: “The fungicide propiconazole is a potent, specific, and affordable brassinosteroid inhibitor.”
- 2010 HLA Graduate seminar series, West Lafayette: “A pharmacological approach to isolate brassinosteroid mutants in maize.”