Brian Zebosi

Email: zebosibrian@gmail.com Contact: (515)-230-2175

EDUCATION

Iowa State University, Ames, Iowa Aug 2016-Present
Ph.D. Genetics and Genomics
Minor in Plant Breeding and Genetics

Makerere University, Kampala-Uganda Aug,2012-Dec 2015
Bsc. Agricultural Science – Soil Science Major

RESEARCH EXPERIENCE

Iowa State University Ames, Iowa
Graduate Research Assistant; Advisor: Dr. Erik Vollbrecht June 2017-Present
Research Projects

- **Characterization and mapping of *ramosa suppressor locus*12.2995* mutant, a novel allele of *opaque1* that regulates plant architecture in maize.**
  Mutant phenotyping, Fine mapping using bulk segregant analysis, identification, and annotation of Ethyl methanesulfonate (EMS) SNP using whole-genome sequencing and variant analysis, RNA expression analysis.
- **Characterization and mapping of *brassinosteroid-deficient semi-dwarf* mutants (*bds1* and *bds2*) that regulates plant architecture in maize.**
  Mutant phenotyping, positional cloning using bulk segregant analysis and whole-genome sequencing and variant analysis, RNA expression analysis, generation of *bds2* mutants using Ac/Ds transposon mutagenesis, genetic analysis between *bds1*; *bds2* double mutants, metabolite accumulation profiling analysis using targeted liquid chromatography/mass spectrometry.
- **Characterization of *cabbage1* and *cabbage2* that function redundantly to regulate plant growth and development.**
  Using reverse genetics to study the loss of function phenotypes and tissue-specific functions of *cabbage1* and *cabbage2* in maize.
- **Elucidate the individual and collective contributions of several *bri1* homologs to brassinosteroid signaling in maize.**
  Mutant phenotyping, using reverse genetics to stack various single mutants to generate all higher-order mutants (double, triple, quadruple and, quintuples) to dissect genetic interactions among bri1 receptors and RNA expression analysis.
- **Characterization and mapping tassel feminization and tassel branching modifiers**
  QTL experimental design, traits scoring, and QTL data analysis using R, SAS, and Windows QTL Cartographer.

Graduate Research Assistant, Advisor: Dr. Steve Whitham and Dr. Erik Vollbrecht Aug 2016-June 2017
Research Projects

- **Screening maize transgenic transposon events using fluorescent markers.**
- **Examining for foxtail-mosaic virus resistance across 25 maize Nested Associated Mapping (NAM) founder lines using western-blot and semiquantitative RT-PCR**.

Makerere University Kampala-Uganda
Research Assistant, Advisor: Dr. Moses M. Tenywa May 2015 – Aug 2016
Research Project

- **Research on Interdisciplinary project funded by International Institute of Tropical Agriculture (IITA).**
  Experimental design, laboratory routine soil and plant sample analysis, data analysis, mentoring, and supervising undergraduate students.

Makerere University Kampala-Uganda
Undergraduate Research Assistant, Advisor: Dr. Moses M. Tenywa March 2014 – May 2015
Research Project

- **Evaluating the effect of different farmer-choice soil amendments on local and improved African leaf vegetables**
  Experimental design, laboratory routine soil and plant sample analysis, data analysis using GenStat and SSPS

Iowa State University-Uganda Program Kamuli-Uganda
Service-learning intern April – August 2014
Research Projects

- **Community research and out-reach**
  Extension services, set up field farmer-led demonstration plots for participatory research, laboratory routine soil and plant sample analysis.

TEACHING EXPERIENCE

Graduate Teaching Assistant, Iowa State University — Ames, Iowa

- GENT 313 - Principle of Genetics — 2019 – Present
- BIO 211L - Principle of Biology Laboratory I — 2019

Teaching Assistant, Makerere University — Kampala-Uganda

- SOS1101 – Introduction to Soil Science – taught the practical sessions — Aug – Dec 2015
- SOS1102 – Introduction to Natural Resource Management - Fieldwork — Aug – Dec 2015
- SOS4702 – Advanced Soil Physics – Recitation and Practical sessions — Jan – May 2016

SCHOLARSHIPS AND AWARDS

- Iowa State University, Graduate College's Teaching -Research Award — Fall, 2021 – Spring, 2022
- Interdepartmental Genetics and Genomics Research Travel Award, $250 — 2021
- Maize Gene Structure Annotation Jamboree Award, $1,000 — 2020
- Interdepartmental Genetics and Genomics Research Travel Award, $250 — 2020
- Professional Advancement Grants Research Travel Award, $200 — 2020
- Interdepartmental Genetics and Genomics Research Travel Award, $250 — 2019
- Uganda National-Merit Undergraduate Scholarship — 2012 - 2016

PUBLICATIONS, ORAL AND POSTER PRESENTATION

- **Brian Zebosi,** (2021) Modulation of shoot architecture and Sex determination via brassinosteroid biosynthesis and signaling in maize. Invited talk. Genetics, Development, and Cell Biology (GDCB) - Graduate Student and PostDoc Seminar series, Iowa State University, Ames, IA, USA.
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2021): Characterization of *ramosa suppressor locus*12.2995*, a likely novel allele of *opaque1* that regulates plant architecture in maize. Poster presentation at 63rd Annual Maize Genetics Conference, Online, USA**.**
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2020): Characterization of brassinosteroid deficient semi-dwarf mutant (*bds1*), modulating shoot architecture in maize. Poster presentation at 62nd Annual Maize Genetics Conference, 2020, Sheraton Kona, Kailua-Kona, Hawaii, USA.
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2019): Characterization and cloning of a *semi-dwarf* (*sdw*)* mutant affecting plant architecture in maize. Poster presentation at 61st Annual Maize Genetics Conference, Union Station St. Louis, Missouri, USA**.**
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2019): Characterization of *ramosa suppressor locus*12.2995*, a likely novel allele of *opaque1* that regulates plant architecture in maize. Poster presentation at 61st Annual Maize Genetics Conference, Union Station St. Louis, Missouri, USA**.**
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2019): Characterization and cloning of a *semi-dwarf* (*sdw*)* mutant affecting plant architecture in maize. Poster presentation at Walter and Helen Parke Loomis Mini-Symposium (New Frontiers in Plant Hormone Research).
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2019): Characterization and cloning of a *semi-dwarf* (*sdw*)* mutant affecting plant architecture in maize. Poster presentation at 6th Annual R.F. Baker Iowa State Plant Breeding symposium.
- **Brian Zebosi,** Erica Unger-Wallace, Wimalanathan Kokulapalan, Erik Vollbrecht (2018): Characterization of *ramosa suppressor locus*12.2995*, mutants that regulates plant architecture in maize. Poster presentation at Annual R.F. Baker Iowa State Plant Breeding symposium.