Amy L. Scegura

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Curriculum Vitae

An adaptive, innovated, driven, and responsible soon-to-be graduate with five years of experience in agronomy, plant breeding, genetics, and data management applied to improving corn and pea. Hard working individual with hands-on experience, self-motivation, determined to accomplish any given task, detail-oriented, and passionate about plant breeding and genetics. Proficient at using PCR molecular markers for marker-assisted selection in pea, phenotypic characterization, and field equipment. Good understanding of data collection and management in field and greenhouse and applied breeding processes. Able to collaborate in team efforts to provide suggestion and support, but is a strong independent worker.

EDUCATION

Jan. 2016-Present — **M. Sc. in Plant Sciences (Plant Breeding and Genetics)**
North Dakota State University, Fargo, North Dakota
Thesis: *Marker-assisted Backcross Selection for Virus Resistance in Pea (Pisum sativum L.)*
Project advisor: Dr. Kevin McPhee, Ph.D.
Academic advisor: Dr. Juan Osorno, Ph.D.
Expected Gradation: December 2017
GPA: 4.0/4.0 Dean's List (three semesters)

Jan. 2014-Dec. 2015 — **B. Sc. in Crop and Weed Sciences (Agronomy)**
North Dakota State University, Fargo, North Dakota
Advisor: Dr. Edward Deckard, Ph.D.
Graduated Summa Cum Laude
Top 10 Senior in College of Agriculture, Food Systems, and Natural Resources
GPA: 4.0/4.0 Dean's List (four semesters)

Aug. 2012-Dec. 2013 — **B. Sc. in Agronomy**
Southwest Minnesota State University, Marshall, Minnesota
GPA: 3.84/4.0 Dean's List (three semesters)
Transferred to NDSU January 2014

RELATED RESEARCH & WORK EXPERIENCE

Jan. 2016-Present — **Graduate Research Assistant: Pulse Crops Breeding Program***
North Dakota State University, Fargo, North Dakota

- Lead and assisted with field activities including planning experiments, field preparation, seed preparation, planting, cross pollinate, data collection (i.e. disease notes including pea seed-borne

mosaic virus and powdery mildew, flowing date, physiological maturity, and plant morphology notes), phenotypic selection, harvest, clean seed, and prepare seed for winter nursery.

- Managed greenhouse activities including planting, watering, fertilization, emasculation/pollination of pea, maintain/organize plants on trellis, tissue sampling, inoculate plants with *Pea Seed-borne mosaic virus* (PSbMV), harvest, seed processing, and data collection.
- Managed laboratory activities including tissue sampling, use freeze dryer, DNA extraction, preform PCR, and analyze banding patterns.
- Employed molecular markers (SSRs) for identification of polymorphism between Lifter (PSbMV resistant pea line) and 8 parental lines (PSbMV susceptible pea lines), and polymorphism in lentil lines.
- Operate project equipment including ND state fleet vehicles, truck with trailer, load and unload equipment, tractor with attachments (planter, notched roller to pack field after planting, apply simulated hail treatments with flail mower, rototiller for plot maintenance, and stationary thresher), combine, and single plant thresher.
- Utilize Agrobase for data management.
- Utilize SAS and ASReml for data analysis, and some experience using Spotfire software.
- Attended and presented at conferences both nationally and internationally.
- Lead student workers in field, greenhouse, and lab while advisor was at NDSU before moving to Montana State University in Bozeman, Montana.

*All activities from January 2017 to present were completed independently after advisor left to MSU, Bozeman, MT. I received some assistance from NDSU staff to order supplies for laboratory, field 2017 experimental design, installing/learning to operate computer software, planting, and applying herbicide/pesticide during growing season.

Feb. 2014-Dec. 2015

Student worker: Pulse Crops Breeding Program

North Dakota State University, Fargo, North Dakota

- Assisted with seed laboratory activities including threshing seed, seed purification, and preparing seed for planting.
- Collect and enter data into Agrobase data system.
- Conduct Fusarium root rot experiments in the greenhouse to screen pea lines in the breeding program by culturing pathogen, counting spores, and inoculating seedlings roots after shoot emerges.
- Graft chickpea to clone F_1 plant to produce more seed in greenhouse.
- Helped current graduate students and overall breeding program in greenhouse with planting, fertilization, plant maintenance, tissue collection, and emasculation/pollination of pea, lentil, and chickpea.

May-Aug. 2015

Undergraduate Research Fellowship Intern: NDSU Pulse Crops Breeding Program

North Dakota State University, Fargo, North Dakota

- Conducted a chickpea simulated hail research project. The experiment set up as an RCBD with three application times during the growing season at vegetative, first flower, and pod fill to test yield loss. The project was funded by the National Crop Insurance Service.
- Collected and recorded data in tablet version of Agrobase for hail experiment (i.e. plant height before and after treatment, weighted biomass samples, and assessed stem, branch , and leaf damage) and agronomic notes in advanced yield trials (i.e. plant height, number of nodes to first flower, number of reproductive nodes, and number of pods per peduncle).
- Operate tractor with flail mower to apply treatments, and rototiller for plot maintenance.
- Utilized statistical analysis program in Agrobase for data analysis.
- Assisted in field and greenhouse activities including planting, plot maintenance, crossing pea, lentil, and chickpea, and harvest.
- Attended field day presentations at Extension Centers across North Dakota.

May-Aug. 2013 & 2014

Summer Field Intern: Corn Breeding Program

Dow AgroSciences, Olivia, Minnesota

- Assisted in lab with printing packets, input data, and maintain daily safety protocol.
- Assisted with field activities including planting, inoculating, stand counts, row banding, tissue sampling, rogueing, detassel corn, pollinating, collect flowering data, and plant and ear heights.
- Supervised/led crewmembers while row-banding, tissue sampling, and pollinating.
- Took leadership roles in my own project and was able to make decisions how to complete my assigned project during my second season of interning.

Lifetime

Farm hand

Scegura Family Farm, Avon, Minnesota

- Operate equipment to prepare for growing season. Activities include driving tractor with digger, disk, or rock wagon, bobcat to pick rocks, and basic equipment maintenance.
- Cut and rake hay during the summer.
- Take part in harvest operations using tractors, bobcat, and other farm equipment including gravity box and grain augers.
- Organize and collect data on livestock for future reference. Feed, bed, and monitor cattle during calving season.

OTHER WORK EXPERIENCE

Sept. 2012-Dec. 2013 (School Year)

Crew Leader
Hardee's, Marshall, Minnesota

- Maintained high standards and quality customer service.
- Served orders to guests and offer additional service.
- Maintained sanitation and safety standards in the store.
- Managed crew members when in charge of the store while managers were away.

CONFERENCE PRESENTATIONS

October 2016

Tenth Annual Canadian Pulse Research Workshop
Winnipeg, Manitoba, Canada
Poster presentation: 1st place
Marker-assisted backcross selection for virus resistance in pea.

October 2016

Second International Legume Society
Tròia, Portugal
Flash oral presentation
Marker-assisted backcross selection for virus resistance in pea.

April 2016

32nd Annual Plant Science Graduate Symposium
Fargo, North Dakota
Oral presentation: 2nd place
Effect of Simulated Hail Treatment on Yield Loss in Chickpea.

November 2015

NDSU Explore
Fargo, North Dakota
Poster presentation: 3rd place
Effect of Simulated Hail Treatment on Yield Loss in Chickpea.

COMMUNITY AND PROFESSIONAL ORGANIZATION INVOLVEMENT

Secretary: Graduate Student Association
Department of Plant Sciences, North Dakota State University, Fargo, North Dakota
January 2017-Present

Vice President/Secretary: International Student Organization
Southwest Minnesota State University, Marshall, Minnesota
Fall semester 2013

Secretary: International Student Organization
Southwest Minnesota State University, Marshall, Minnesota
Spring semester 2013

National Association of Plant Breeders Member: September 2015-Present
Gamma Sigma Delta Membership: April 2015-Present
ASA & CSSA Member: February 2015-Present

ACTIVITIES &VOLUNTEER

NDSU

- **The Big Event:** April 2014, 2015, and 2017
- **Great Plains Food Bank:** Fall 2015 and spring 2017
- **Community garden projects:** Summer of 2015 and 2016
- **Bible Study Leader:** Fall 2015-Spring 2016
- **Avenues of Scientific Discovery:** Spring 2016
- **Agronomy Club:** January 2014-December 2015
- **Welcome Week Leader/Move-in Crew:** August 2015/August 2014
- **Bethany Retirement Home on 42nd and University Drive:** 2015

SMSU

- **Access Opportunity and Success:** Fall 2012-2013
- **Agronomy/Ag Business Club:** Fall 2012-2013
- **National Society of Leadership and Success:** Fall 2012-2013
- **Marshall Food Shelf:** Fall 2012-2013

RECOGNITION AND HONORS

- **John F. Soper PLSC Scholarship:** Spring 2017
  North Dakota State University
- **Congressional Visit Day:** March 2016
  American Association of the Advancement of Science
- **Golden Opportunity Scholar Recipient:** November 2015
  American Society of Agronomy
- **Dwain W. Meyer Scholarship:** Spring 2015
  North Dakota State University
- **Steinhaus-Rhinehart Scholarship:** Spring 2015
  North Dakota State University
- **Mentor's Scholarship:** August 2012-December 2013
  Southwest Minnesota State University

Southwest Minnesota State University: Fall 2012

- Ralph Manwarren Agronomy Endowment
- Peterson Family Farms Scholarship
- Foundation Distinguished Student Scholarship
- Winfield Solutions Scholarship

REFERENCES

Kevin McPhee
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