

# AUSTIN M. PUTZ – CURRICULUM VITAE

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## PERSONAL INFORMATION

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Links: [LinkedIn](#) | [ResearchGate](#) | [GitHub](#)

## Summary:

I grew up on a diversified family farm in southern Iowa. During that time I gained experience with swine, beef, chickens, sheep, goats, and row crops. I've had positions at three different genetics labs as an undergrad at Iowa State. I've also taken three internships: Fast Genetics (on farm), Smithfield Premium Genetics (SPG) in R&D, and The Maschhoffs as a geneticist on special projects. This has provided me with valuable experience to see real world breeding programs. I have gained numerous technical skills gained during my M.S. and Ph.D. Including R, Linux, bash scripting, vim, L<sup>A</sup>T<sub>E</sub>X, Julia, ASReml, SAS, and SQL. My Master's was completed at North Carolina State University with SPG on a novel litter size trait. I'm currently a Ph.D. student with Dr. Jack Dekkers at Iowa State University working on disease resistance in both sow herds and wean-to-finish pigs.

## EDUCATION

**Ph.D. in Animal Breeding and Genetics from Iowa State University** (2015-2018(expected)). Minor: Statistics  
Committee: Jack C. M. Dekkers (PI), K. Stalder, A. Wolc, J. Cunnick, P. Dixon  
Project on disease resistance in swine.  
GPA: 3.78

**M.S. degree in Animal Science from North Carolina State University** (2013-2015). Minor: Statistics  
Committee: Mark Knauer (PI), K. A. Gray, C. Maltecca, H. Bondell  
Thesis title: *Alternative Litter Size Traits to Increase the Number of Weaned Pigs in Swine*. [Thesis](#)  
GPA: 4.0

**B.S. degree in Animal Science from Iowa State University** (2009-2013).  
GPA: 3.93 (Summa Cum Laude)

## COMPUTER SKILLS

**Programming/scripting languages** Advanced: R, Bash scripting  
Intermediate/Beginner: Julia, Python 3, (started Java)  
**Genetic Software** BLUPF90, ASReml, DMU (limited), GenSel, JWAS (Julia), FImpute  
**Reporting** L<sup>A</sup>T<sub>E</sub>X(e.g. this CV), Shiny Apps, Microsoft Office, Libre Office  
**Collaboration** GitHub

**Operating systems** Extensive experience with Mac OS. Experience with Ubuntu Linux (Debian). Some experience with Windows.

**Servers** Successfully set up a home server (Ubuntu 16.04.1) to run genetic analyses (ssh, GenSel, BLUPF90, ASReml, R, Julia)

**Databases** Basic query experience with SQL (SQLite), gaining experience setting up a database

**Other** vim/awk/sed, SAS (modeling), began learning some Java

**Open source projects** Please see my GitHub page where I provide much of my code and help files (GenSel for example) ([GitHub](#))

#### WORK EXPERIENCE

**2015 - Intern Geneticist** (Carlyle, IL) The Maschhoffs

Two special projects were completed. The first was looking into structural characteristics scored at off-test. The second was to develop code to evaluate and compare different farms.

**2013 - R&D Intern** (Rose Hill, NC) Smithfield Premium Genetics

Worked with SPG for my Master's degree in litter size. Helped them with a growth curve study and with collecting data at the packing plant for their evaluation program.

**2012-2013 - Swine Molecular Genetics** (Ames, ISU) Dr. Chris Tuggle

My first project was to prepare RNAseq samples from the RFI population. My second project was to develop an assay to genotype pigs for a large QTL for PRRS resistance at the *causative* locus.

**2012 - Breeding & Farrowing Tech** (Cando, North Dakota) Fast Genetics

Spent a summer on a 6,000 head multiplier for Fast Genetics (HyLife). Was able to spend half of my time in breeding and half in farrowing. Also visited the nursery, finisher, and feed mill.

**2012 - Beef Genetics Lab** (Ames, ISU), Dr. James Reecy

Assisted Dr. Reecy's lab in data collection on farm and running assays in the lab.

**2011 - Soil Microbiology Lab** (Ames, ISU), Dr. Kirsten Hofmockel

Helped with a lot of data collection in the field for many of the graduate projects in the summer. Then helped analyse and phenotype the samples that fall.

**2010-2011 - Barn Crew Member** (Ames, ISU) ISU Vet School

#### CLUBS

**ABGGSO** Animal Breeding and Genetics Graduate Student Organization

President 2017-2018

Implemented a new system to have journal club every other week. Other weeks are for presenting a new skill or knowledge to the group. We also do prelim exam studying.

TEACHING	<p><b>Animal Breeding (undergrad)</b> TA Spring 2017 under Dr. Bundy. Responsible for 1 lab section.</p> <p><b>Swine Systems Management</b> TA Fall 2016 under Dr. Stalder</p> <p><b>Reproductive Physiology</b> TA 2 semesters at NCSU</p> <p><b>Organic Chemistry Tutor</b> Spring 2012</p>
PROJECTS	<p><b>All available on GitHub</b> <a href="https://github.com/austin-putz">https://github.com/austin-putz</a></p> <p><b>Documentation</b> Help new people running FImpute, GenSel, BLUPF90 programs</p> <p><b>BLUPF90 wrapper</b> Linux/Unix wrapper for BLUPF90 programs (many analyses)</p> <p><b>BLUPF90 man pages</b> man pages (Linux/Unix) for most BLUPF90 family of programs</p> <p><b>vim syntax highlighting</b> vim syntax highlighting for QMsim, BLUPF90, AS-Reml, and GenSel</p>
AWARDS	<p><b>2017 Print and Grace Powers Hudson Scholarship (CALS)</b></p> <p><b>2017 Duane and Shirley Acker International Fellowship (Dept AnS)</b></p> <p><b>2016 Lauren L. Christian Graduate Fellowship (Dept AnS)</b></p> <p><b>2016 Caine-Bogle Family Graduate Fellowship (CALS)</b></p> <p><b>2015 Miller Graduate Fellowship (ISU)</b></p> <p><b>2013 National Pork Board Scholarship</b></p> <p><b>2012 Kenneth and Ruth Wagner Scholarship</b></p> <p><b>2012 Arthur Molln Scholarship</b></p> <p><b>2011 Lane Wells Scholarship</b></p>
PUBLICATIONS	<p><b>Putz, A. M.</b>, C. R. Schwab, A. D. Sewell, D. J. Holtkamp, J. J. Zimmerman, K. Baker, N. Seroao, J. C. M. Dekkers. 2017 <i>The effect of PRRS virus disease outbreak on genetic parameters and reaction norms of reproductive performance in pigs</i>. (in prep to submit to JAS)</p> <p><b>Putz, A. M.</b>, K. A. Gray, C. Maltecca, F. Tiezzi, and M. T. Knauer. 2017. <i>A comparison of accuracy validation methods for genomic and pedigree based predictions of swine litter size traits using Large White and simulated data</i>. J. An. Breed. Genet. (submitted)</p> <p><b>Putz, A. M.</b>, K. A. Gray, C. Maltecca, F. Tiezzi, and M. T. Knauer. 2015. <i>Variance component estimates for alternative litter size traits in swine</i>. J. Anim. Sci. 93:5153-5163. doi:10.2527/jas2015-9416 (<a href="#">link</a>)</p>

## ABSTRACTS

**Putz, A. M.**, M. K. Dyck, PigGen Canada, J. C. S. Harding, F. Fortin, G. S. Plastow, and J. C. M. Dekkers. 2017. *Quantifying resilience utilizing feed intake data in a natural challenge model for disease resilience in wean-to-finish pigs*. Presented orally at the joint PRRS/NSIF meeting.

**Putz, A. M.**, J. C. S. Harding, F. Fortin, G. S. Plastow, and J. C. M. Dekkers. 2017. *A natural challenge model for disease resilience in wean-to-finish pigs*. Presented orally at ASAS Midwest Section.

Powell, E. J., **A. M. Putz**, A. Boettcher, L. Varley, J. E. Cunnick, M. Sauer, M. Schroyen, S. Charley, C. K. Tuggle. 2016. *Contact hypersensitivity testing shows long-term hapten-specific memory associated with increased liver NK cell populations up to 32 days post-sensitization*. Presented Autumn Immunology Conference.

**Putz, A. M.**, C. R. Schwab, A. D. Sewell, and J. C. M. Dekkers. 2016. *The effect of PRRS virus disease outbreak on genetic parameters of reproductive performance in pigs*. Presented as poster at ICQG.

**Putz, A. M.**, K. A. Gray, C. Maltecca, F. Tiezzi, and M. T. Knauer. 2015. *Accuracies of genomic and pedigree based predictions for swine litter size traits in Large White and Landrace breeds*. Presented orally at ASAS Midwest Section.

**Putz, A. M.**, K. A. Gray, C. Maltecca, F. Tiezzi, and M. T. Knauer. 2014. *Variance component estimates for alternative litter size and piglet mortality traits*. Presented orally at ASAS Midwest Section.

## SHORT COURSES

*Programming and computer algorithms in animal breeding with focus on genomic selection and single-step GBLUP*. 2014. University of Georgia

## REFERENCES

**Jack C. M. Dekkers** Distinguished Professor, ISU  
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**Mark Knauer** Assistant Professor, NCSU  
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**Clint Schwab** Director of Genetics, The Maschhoffs  
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