Austin M. Putz – Curriculum Vitae

Personal Information

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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, LaTeX, 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 LaTeX(e.g. this CV), Shiny Apps, Microsoft Office, Libre Office

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 GitHub, vim/awk/sed, SAS (modeling)

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 collaction 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

Animal Breeding (undergrad) TA Spring 2017 under Dr. Bundy. Responsible for 1 lab section.

Swine Systems Management TA Fall 2016 under Dr. Stalder

Reproductive Physiology TA 2 semesters at NCSU

Organic Chemistry Tutor Spring 2012

Projects

All available on GitHub https://github.com/austin-putz

Documentation Help new people running FImpute, GenSel, BLUPF90 programs

BLUPF90 wrapper Linux/Unix wrapper for BLUPF90 programs (many analyses)

BLUPF90 man pages man pages (Linux/Unix) for most BLUPF90 family of programs

vim syntax highlighting vim syntax highlighting for QMsim, BLUPF90, ASReml, and GenSel

Awards

2017 Print and Grace Powers Hudson Scholarship (CALS)

2017 Duane and Shirley Acker International Fellowship (Dept AnS)

2016 Lauren L. Christian Graduate Fellowship (Dept AnS)

2016 Caine-Bogle Family Graduate Fellowship (CALS)

2015 Miller Graduate Fellowship (ISU)

2013 National Pork Board Scholarship

2012 Kenneth and Ruth Wagner Scholarship

2012 Arthur Molln Scholarship

2011 Lane Wells Scholarship

Publications

Putz, A. M., C. R. Schwab, A. D. Sewell, D. J. Holtkamp, J. J. Zimmerman, K. Baker, N. Serao, J. C. M. Dekkers. 2017 *The effect of PRRS virus disease outbreak on genetic parameters and reaction norms of reproductive performance in pigs.* (in prep to submit to JAS)

Putz, A. M., K. A. Gray, C. Maltecca, F. Tiezzi, and M. T. Knauer. 2017. *A comparison of accuracy validation methods for genomic and pedigree based predictions of swine litter size traits using Large White and simulated data.* J. An. Breed. Genet. (submitted)

Putz, A. M., K. A. Gray, C. Maltecca, F. Tiezzi, and M. T. Knauer. 2015. *Variance component estimates for alternative litter size traits in swine.* J. Anim. Sci. 93:5153-5163.
doi:10.2527/jas2015-9416 (link)

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 disesase 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

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