

Ana Inés Vázquez

PhD, MS, University of Wisconsin – Madison.
Associate Professor, Michigan State University.
URL: <https://www.epi.msu.edu/faculty/vazquez>
<https://iq.msu.edu/ana-vazquez/>
<https://quantgen.github.io/>

Department of Epidemiology and
Biostatistics,
909 Wilson Rd. B601.
East Lansing, MI, 48824

Phone: (517) 884 6688
Fax: (517) 432-1130
avazquez@msu.edu

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Research

Interests

My research focuses on the development and implementation of statistical methods for genomics and other *omics* for human complex traits and diseases. The traits that I have worked the most include cancer, obesity, obesity comorbidities, standing height, physical activity, and dietary patterns among other health traits. My most recent research has been in hyperuricemia, obesity and the study of the genetic response to interventions. My previous research included studies with generalized linear mixed models (GLMM) with correlated random effects for genetic studies, from which I co-authored two R-packages that are deposited in the R CRAN.

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Education

Doctor of Philosophy (2008-2010).

[Dairy Science](#), UW-Madison.

Advisers: Dr. [Guilherme Rosa](#), Dr. [Daniel Gianola](#) and Dr. [Kent Weigel](#).

Dissertation: *Statistical Modeling of Genomic Data: Applications to Genetic Markers and Gene Expression*.

Bioinformatics [Certificate](#) (2007-2008).

[Biostatistics and Medical Informatics](#), UW-Madison.

Master of Science (2004-2007)

[Dairy Science](#), UW-Madison.

Advisers: Dr. [Daniel Gianola](#) and Dr. [Kent Weigel](#).

Thesis: *Analysis of number of episodes of clinical mastitis in Norwegian Red and Holstein cows with Poisson and categorical data mixed models*.

Undergraduate Studies (1994-2001).

[Universidad de la República](#), Montevideo-Uruguay.

Major: Plant and Animal Sciences.

Adviser: Dr. [Graciela Quintans](#).

Thesis: *Effects of the early weaning and body condition on the reproductive performance of primiparous cows*.

Short Courses.

- [Informatics and Statistics for Metabolomics](#). Instructors: David Wishart, Jeff Xia, et al., Ontario Research Institute, McGill University, Montreal, QC, 6/2018
- [Bioinformatics for Cancer Genomics](#). Instructor: Dr. John McPherson, et al., Ontario Institute for Cancer Research, Toronto, Ontario, 5/2015.
- [3rd Annual Short Course on Statistical Genetics and Genomics](#). Instructor: Dr. Hemant K. Tiwari, et al., University of Alabama at Birmingham, Birmingham, AL, 7/2013.
- [Population Genetic Data Analysis](#). Instructors: Drs. Bruce Weir and Jérôme Goudet, European Institute in Statistical Genetics, Institute of Evolutionary Biology, University of Edinburgh, Edinburgh, 6/2012.
- [Statistical Learning and Data Mining III](#). Instructors: Drs. Trevor Hastie and Robert Tibshirani, Stanford University, Boston, MA, 9/2011.
- [Genomic Selection in Livestock](#). Instructors: Drs. Dorian Garrick, Rohan Fernando and Jack Dekkers, Iowa State University, Ames, IA, 6/2010.
- [Computational Approaches to Analyzing Microarray Data](#). Instructors: Drs. Karin Borgh, et al., University of Wisconsin Biotechnology Center Promega Corporation, Madison, WI, 7/2008.
- [QTL Mapping, MAS, and Genomic Selection](#). Instructor: Dr. Ben Hayes, Iowa State University, Ames, IA, 2007.
- [Fortran Programming and Bayesian Implementation via MCMC Techniques](#). Instructors: Drs. Ignacy Misztal and Romdhane Rekaya, University of Georgia, Athens, GA, 2005.

- [*Bayesian Modeling, Inference and Prediction*](#). Instructor: Dr. David Draper. University of California, Chicago, IL, 2005.
- *XI International Course on Animal Breeding*, National Institute of Agricultural Research, Spain-Madrid, 10/2001.
- *The evaluation process in the classroom*. Instructor: Ms. Maria Camino Trapero. Universidad de la Republica. Montevideo-Uruguay, Aug.-Sep., 2001.

Programming Skills and Software Development

I do most of my programming in R, and use SAS and Java sporadically. I am fluent in Unix and I have basic knowledge of Fortran, WinBugs and Julia.

R package [*pedigreemm*](#) (Version 0.3-3 and [*in development*](#)).
Authors: Drs. D.M. Bates and **A.I. Vazquez**.

[*PedigreeTools*](#), [*PedigreeR*](#)

R and Julia packages.

Authors: Drs. **A.I. Vazquez** and D.M. Bates.

Professional Experience

Associate Professor with Tenure (2015, up to date).

Institution: [*Department of Epidemiology and Biostatistics*](#) at [*Michigan State University*](#) (MSU).

Consultant (2016-2018).

- Study: Genetic and Epigenetic Covariance of Gout, Hyperuricemia and its Comorbidities. PI: Reynolds, University of Alabama at Birmingham, AL.

Consultant (2015).

- Study: The Training Interventions and Genetics of Exercise Response (TIGER) project. PI: Bray, University of Texas – Austin, TX.
- Study: The Epigenetic and Genetic Mechanisms Driving Exercise Response and Adherence Project. PI: Bray. University of Texas – Austin, TX.

Assistant Professor, Tenure system (2013-2015).

Institution: [*Section of Statistical Genetics*](#) at [*University of Alabama at Birmingham*](#) (UAB).

Consultant (2011-2014).

Institution: [*Aviagen*](#).

Postdoctoral Fellow (2011-2012).

Institution: [Section of Statistical Genetics](#) at [UAB](#).
Advisers: Dr. [David B. Allison](#) and Dr. [Nengjun Yi](#).

Statistician (2010).

Institution: [Section of Statistical Genetics](#) at [UAB](#).
Principal investigators: Dr. [David B. Allison](#) and Dr. [Christine Duarte](#).

Research and Teaching Assistant (2004-2009).

Institution: [Dairy Science](#) Department, UW-Madison.
Advisers: Dr. [Guilherme Rosa](#), Dr. [Daniel Gianola](#) and Dr. [Kent Weigel](#).

Internship in Animal Reproduction (2003).

Institution: [Dairy Science](#) Department, UW-Madison.
Advisor: Dr. [Milo Wiltbank](#).

Research Assistant in Animal Reproduction (2002).

Institution: National Institute of Agricultural Research ([INIA](#)), Uruguay.
Advisor: Dr. [Graciela Quintans](#).

Teaching Assistant in Animal Reproduction (2002).

Course: *Reproductive techniques in sheep and cattle*.
Institution: [Universidad de la República-Salto](#), Uruguay.
Advisor: Dr. [Daniel Fernandez-Abella](#).

Teaching and Research Assistant in [Animal Breeding](#) (1999-2001).

Institution: [Universidad de la República](#), Uruguay.
Supervisors: Dr. [Jorge Urioste](#) and MS. Diego Gimeno.

Funding and Awards

Active Grants

A multi-Omic data platform to identify biological process and mechanisms underlying risk and disease progression.

Zoetis. 01/2020-01/2023.

Status: **Active**. Role PI.

Using Metabolomics to Define the Behavioral Phenomics of Energy Balance and Exercise Response.

R01 / NIH / NIDDK. 07/2019-06/2022. R01DK119836-01A1.

Status: **Active**. Role: PIs Vazquez - Bray.

Functional and Integrative Genomics of Incident Gout and Recurrent Gout Flares.

R01: NIH, Reynolds, R., UAB (PI). MSU. Role: Co-I, MSU subcontract PI.

Status: **Active**. Role: Co-I, MSU-Subcontract PI.

Translational Genomics of Hyperuricemia.

P50. 07/01/2017-06/30/2022. University of Alabama/NIH. MSU. PI: Reynolds. P50 AR060772.

Status: **Active**. Role: Co-I, MSU-Subcontract PI.

Novel approaches for the use of mid infrared spectroscopy and international data resources to enhance phenomics for improving fitness and fertility traits in US dairy cattle.

USDA. PI: Templeman. Dec. 2016- Oct. 2020.

Status: **Active**. Role: Co-I.

Chemokine-mediated antigen-specific T cell responses and immunotherapies to treat head and neck cancer.

R01 DE026125-04. Pyeon (PI) 07/01/2020 – 04/30/2025.

Status: **Active**. Role: Co-I.

Circuit dynamics of sensorimotor integration and decision making in octopus.

U01 NS115817, NIH, Pelled (PI). 2/01/20-1/31/23.

Status: **Active**. Role: Co-I.

Genome and Transcriptome Based Prediction & Regulator Inference of Molecular and Whole-Plant Phenotypes.

NSF. PI: Kirst. MSU. 2015-2020.

Status: **Active**. Role: Co-I.

Macrophage-Selective Nano-therapy for Atherosclerosis. PI: Smith. American Heart Association. 2018-2021.
Status: **Active**. Role: Co-I.

Immune Dysregulation by Human Papillomavirus during Head and Neck Cancer Progression.
R01, NIH. 2016 – 2021. Pyeon, Spanos (PIs).
Status: **Active**. Role: Co-I.

Executed Grants *Statistical Tools for Whole-Genome Prediction of Complex Traits and Diseases.* PI: de los Campos. NIH/NIGMS. 2015-2019. Status: **Executed**.
Role: Co-I.

Deciphering Metabolic Rewiring in Cancer. Grantor: American Association for Cancer Research. MSU. PI: Lunt.
Status: **Executed**. Role: Co-I.

Omic Risk Assessment of Nodal Metastasis in Ductal Breast Cancer. PI: **Vazquez**. American Cancer Society ACS-IRG: IRG-60-001-50. New Investigator Pilot Grant, Comprehensive Cancer Center, University of Alabama at Birmingham. 2015.
Status: **Executed**. Role: PI.

Factors Affecting Prediction Accuracy of Complex Human Traits and Diseases. NIH/NIGMS, R01. PI. De los Campos. MSU.
Status: **Executed**. Role: Co-I.

Data analysis tools and pipelines for Bayesian genomic regression and prediction in pig breeding programs. PI. De los Campos. The Pig Improvement Company (PIC, a Genus Company). 1/1/2016-12/31/2017.
Status: **Executed**. Role: Co-I.

Model and Software for Analysis and Prediction of Agronomic Traits of Wheat Varieties in France Using Molecular Markers and Environmental Covariates (Phase III). PI: de los Campos. ARVALIS. 2015-2017.
Status: **Executed**. Role: Co-I.

Genetic and Epigenetic Covariance of Gout, Hyperuricemia and its Comorbidities. PI: Reynolds. Arthritis National Research Foundation. 2016-2018.
Status: **Executed**. Role: consultant.

Training Interventions and Genetics of Exercise Response (TIGER) Minority Supplement. Parenting grant PI: M. Bray. Awarded: **Vazquez**. NIH/NIDDK.

Status: **Executed**. Role: PI-Supplement.

Genomics tools in Cancer Progression. PI: A.I. **Vazquez**. Back Of The Envelope award, School of Public Health, UAB, 2014.

Status: **Executed**. Role: PI.

Use of mid-infrared spectral data to improve milk nutritional value, reproduction and health outcomes in Michigan dairy cattle. MSU-Michigan Alliance for Animal Agriculture. 2017-2018. PI: Tempelman.

Status: **Executed**. Role: Co-I.

Statistical Methods for Multivariate Genome Wide SNPs: Developments for Obesity, Body Composition and Bone Health. PI: **Vazquez**. Senior mentors: D. Allison and M. Bray. [Pilot/Feasibility Study Opportunities](#) offered by the [Nutrition Obesity Research Center](#), at UAB. 2012.

Status: **Executed**. Role: PI.

[4th Annual Public Health Research Day](#), First Place in Post Doctoral/Fellow Category. School of Public Health, UAB. 2012.

Other awards

[Career Enhancement Awards](#). [Office of Postdoctoral Education](#), UAB. \$1,500/year, 2011.

The Seng-jaw Soong Award for Excellence in Biostatistics Research. [Comprehensive Cancer Center Retreat](#), UAB. \$500/year, 2011.

Reviewer
(grant evaluation
committees)

Grants reviewer:

- [NIH Study Section: Cancer, Heart, and Sleep Epidemiology Panel A Study Section \(CHSA\)](#), (*ad hoc reviewer*: 2020, 2021).
- [Agencia Nacional de Investigación e Innovación](#) (ANII; *the national agency of research in Uruguay*), (2010, 2011, 2012, 2013, 2014, 2015, 2020, Uruguay).
- United Kingdom Grant System, Project evaluation (2015, UK).

(peer-reviewed
journals).

Journals/Books Reviewer:

[American Journal of Human Genetics \(AJHG\)](#),
[Bioinformatics](#),
[Nature Communications](#),
[The Journal of the American Medical Association](#),
[Journal of Human Nutrition and Dietetics](#),
[Journal of Clinical Oncology](#),
[PLoS Genetics](#),
[Human Heredity](#),
[Genetics Research](#),
[International Journal of Obesity](#),
[Obesity](#),
[Genetic Selection and Evolution](#),
[European Journal of Human Genetics \(EJHG\)](#),
[Scientific Reports](#),
[Journal of Dairy Science](#),
[Journal of Animal Science](#),
[Animal](#),
[Journal of Animal Breeding and Genetics](#),
[African Journal of Agricultural Research](#),
[Research in Veterinary Science](#),
[CRC Press: Book Publishing Proposal](#) (2017)

Teaching

Single or co-Instructor.

EPI 809, Biostatistics II. Spring 2020, 2021, 2022. Department of Epidemiology and Biostatistics, *Michigan State University*. Three-credit course, 3 hrs/week. Assigned instructors: de los Campos, Vazquez and Gardiner (2020), de los Campos, Vazquez (2021, 2022).

EPI 808, Introduction to Biostatistics I. Fall 2018, 2019, 2020 and 2021. Department of Epidemiology and Biostatistics, *Michigan State University*. Three-credit course, 3 hrs/week. Role: assigned single instructor.

EPI855, Biostatistical Modeling in Genomic Data Analysis. Fall 2015, 2016, and 2017. Department of Epidemiology and Biostatistics, *Michigan State University*. Three-credit course, 3 hrs/week. Role: assigned single instructor.

EPI 880, Cancer Epidemiology Independent Study. Spring 2016. Department of Epidemiology and Biostatistics, *Michigan State University*. One-credit class, 1 hr/week, co-teach between two faculties. Co-lead: Vazquez and Pathak.

BST675, Introduction to Statistical Genetics. Spring 2015. Biostatistics Department, *University of Alabama at Birmingham*. Three-credit course, 3 hrs/week class. Assigned instructors: Cui and Vazquez.

BST776, Statistical Methods for Genetic Analysis II. Spring 2014. Biostatistics Department, *University of Alabama at Birmingham*. One-credit course, co-teach among several faculties, 2 hrs/week class. Role: Organizer and leading faculty.

Independent Studies

EPI890, Independent Studies in cancer epidemiology, 2016.

EPI890, Independent Studies in biostatistics, 2020.

Invited Lecture

EPI823, Cancer epidemiology, class; 'Cancer genetics', Fall 2019, and Fall 2017. Role: *Invited lecture*.

EPI880, Analysis & Prediction of Complex Traits Using Whole-Genome Regression Methods. Summer 2016. Department of Epidemiology and Biostatistics, Michigan State University. Role: *Invited lecture*.

PSL460: Topics in Physiology. Spring 2020. Department of Physiology. Michigan State University. Role: *Invited lecture*.

Mentoring:

*PhD students
(primary adviser)*

- [Guanqi Lu](#), PhD Candidate. Adviser: **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University (MSU) 9/2020-present.
- [Alexa Lupi](#), PhD Candidate. Adviser: **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, MSU, 2/2018-present.
- [Agustin Gonzalez Reymundez](#), PhD Candidate. Omic integration, Methods and Software. Mentor: **Ana I. Vazquez**. Genetics and Genomics Graduate Program, MSU. 7/2016-2021.
- [Michael Behring](#), PhD Candidate. Dissertation: “Landscape from three frames of reference: omic correlates of breast cancer metastasis, aging, and immune response”. Academic Adviser: Sadeep Shrestha, Research Adviser: **Ana I. Vazquez**. 2015 – 5/2018, Epidemiology Department, University of Alabama at Birmingham.

*MS Students
(primary adviser)*

- Xuemeng Wang, Master Student, Biostatistics. Adviser: **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University. Sep 2020 – to date.
- [Shyamali Mukerjee](#), Master Student, Biostatistics. **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University. May 2016 – May 2017.
- [Siddharth N. Avadhanam](#), Master Student, Biostatistics. **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University. May 2016- May 2017.
- [Hank Wu](#), Master Student, Biostatistics. Thesis: “Association between Time to Death of Glioblastoma Multiforme and Gene Expression: A survival analysis”. Research Adviser and Committee Chair: **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University. Since May 2015- May 2016.
- Junjie Han, Master Student, Biostatistics. **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University. September 2016 – May 2017.

*Postdoctoral
Fellows or
Research
Associates*

- [Agustin Gonzalez-Reymundez](#), Research associate - Postdoctoral. "Using Metabolomics to Define the Behavioral Phenomics of Energy Balance and Exercise Response". Mentor: Ana I Vazquez. October 2021-present.
- [Gabriel Rovere](#), Research associate - Postdoctoral. "Models to use Infrared Spectra in Holstein Cows to predict Health and Fertility outcomes". Mentors: **Ana I. Vazquez**, Gustavo de los Campos and Robert Tempelman. Department of Epidemiology and Biostatistics, Michigan State University. May 2017 – May 2019.
- [Yeni L. Bernal Rubio](#), Research associate - Postdoctoral. " Genetics of Body Composition and Response to Exercise Intervention", "Integration of Multi-omic Layers for Disease Risk Assessments", "Factors Affecting the Prediction Accuracy". Mentors: **Ana I. Vazquez**. Department of Epidemiology and Biostatistics, Michigan State University. September 2015 – June 2017.

*Internships and
short-term
visiting students*

- [Wesley Bird](#) REPID intern. Research Education Program to Increase Diversity in health sciences (**REPID**) is a competitive NIH funded by the *National Institutes of Health- National Heart, Lung and Blood Institute (NIH-NHLBI)*.
- [Muhammad Yasir Nawaz](#). Student rotation, Genetics Program, Michigan State University, 2016.
- [Austin Pickens](#). PhD student, adviser: Jenifer Fenton, Food Science and human nutrition, MSU. Dissertation topic: "The relationship between obesity, adipokines, and the plasma lipidome: an untargeted mass spectrometric approach." Role: mentoring and support. 2016.
- Jaehyun Joo, PhD students, adviser: M. Bray, University of Texas, Austin. Dissertation topic: Dietary Patterns analysis in response to exercise intervention. Role: mentoring and support. Statistical methods and genomic analysis, 2017-2018.
- [Hugo O. Toledo Alvarado](#), Visiting Scholar. "The use of Fourier-Transform Infrared (FTIR) Spectra as an innovative tool for predicting fertility traits in dairy cattle". PhD adviser: Alessio Cecchinato,

University of Padova Italy. Internship with **Ana I. Vazquez** and Gustavo de los Campos. Department of Epidemiology and Biostatistics, Michigan State University. Mar-Aug, 2016.

- [Shaonin Ji](#), CARE Student. Mentors: **Ana I. Vazquez** and Maria Azrad. “Genomic characterization of nutrient pathways related to prostate cancer.”, 2014-2015.
- [Alessandro Ferragina](#), Visiting Scholar. Project: “Multivariate analysis of complex traits”. PhD Adviser: Alessio Cecchinato. Internship mentors: **Ana I. Vazquez** and Gustavo de los Campos, University of Alabama, Birmingham. Sep-Feb, 2013/2014.
- [Yogasudha Veturi](#), directed studies. “Statistical Methods for Multivariate Genome Wide SNPs, developments for obesity and body composition”. Mentors: **Ana I. Vazquez**, University of Alabama, Birmingham. Sep-Dec, 2013.
- [Dayanara Lebron](#), Internship: “Genome-Enabling Models for Type 2 Diabetes Risk Assessment”. Mentors: **Ana I. Vázquez**, Emily Dhurandhar, Paulino Perez, David B. Allison. University of Alabama, Birmingham. June-July, 2013.
- Izel Sorensen, Visiting Scholar. Project: "Pharmacogenetic effects of “candidate gene complexes” on cardiovascular disease outcomes in response to antihypertensive treatments in the GenHAT study". Internship mentors: **Ana I. Vázquez**, and Marguerite Ryan. Section on Statistical Genetics. University of Alabama, Birmingham. March-May, 2013.
- [Wilnerys Colberg Hernández](#), Internship: Clinical Utility of Whole Genome Prediction. Mentors: Emily Dhurandhar, **Ana I. Vázquez**, David B. Allison. Section on Statistical Genetics. University of Alabama, Birmingham. June-July, 2012.
- [Maxine González](#), Internship: Genomic predictors of Body Mass Index (BMI) vs. Family history predictors. Mentors: **Ana I. Vazquez** and David B. Allison. Section on Statistical Genetics. University of Alabama, Birmingham. June-July, 2011.
- [Maggie Delgado](#), Internship: Genomic predictors of Body Mass Index (BMI) in relation to longevity. Mentors: David B. Allison, **Ana I. Vazquez**, Gustavo de los Campos. Section on Statistical Genetics. University of Alabama, Birmingham. June-July, 2010.

*Committee
Member*

- Alexander Cordiner Steep. *PhD*. PI: Hans H Cheng, USDA-MSU. Genetics Program, MSU. Dissertation topic: ‘The genetic mechanisms, by which Marek’s Disease Virus (MDV) induces Marek’s Disease (MD) lymphomas. Specifically, the role of a primary driver gene (IKZF1), and the cancer genome landscapes of MD lymphomas mutations and expression profiles.
- Mandy Hall. PhD PI: Kristen Upson. Epidemiology and Biostatistics, MSU.
- Chelsea Robinson. PhD PI: Jean Kerver Epidemiology and Biostatistics, MSU.
- Reid Blanchett. PhD. PI: Catherine Ernst. Genetics Program, MSU. ‘DNA Methylation Patterns in Psychiatric Disease’.
- M. Yasir Nawaz. PhD. PI: Cedric Gondro. Genetics Program, MSU.
- Hanna Wackel. PhD. PI: Cedric Gondro. Animal Sciences, MSU.
- Marzieh Ghiasi. PhD. PI: Claudia Holzman. Epidemiology and biostatistics, MSU.

**Talks and
Seminars**

Integrating Whole Genome Omics to Understand Cancer. August 27, 2019. Secchia Center, Grand Rapids, Michigan. Invited Speaker.

Prediction of complex traits. Invited speaker in the Phenotypic Data Workshop, University of Florida, January 25th 2018. Gainesville, Florida.

Predicción genómica de caracteres complejos en humanos en la era del Big Data. (Prediction of complex human traits in the big data era). Invited speaker, INIA –Spain, Madrid, Spain, July 2017.

Predicción de avance y supervivencia de cáncer de seno usando información de varios Omics. (Prediction of survival and cancer outcomes with omics data). Invited speaker, “Programa de Genética del Cáncer Humano, Centro Nacional de Investigaciones Oncológicas (CNIO)”. (National Center for Oncological Research). Madrid, Spain, July 2017.

Understand and Predict Breast Cancer Outcome with omics data, Summer Seminars in Statistical Genetics, University of Gottingen, Gottingen, Germany, June 17, 2017.

Title: *Pleiotropic effects between body composition and obesity traits after an intensive exercise intervention*. RTG colloquium, University of Gottingen, Gottingen, Germany July 12, 2017.

Signals of Cancer Progression from Multi-Layer Omics. Invited speaker, Institute for Quantitative Health Science and Engineering, Michigan State University, East Lansing, Michigan, September, 2017.

Research Overview, meeting with Zoetis, a private company with research team in Kalamazoo, Michigan: Methods for Integration of Multi-Layer Omic. Approaches to use of mid infrared spectroscopy for improving fitness and fertility. Tools for pedigree-based models. Zoetis – Quantgen Research Group meeting, East Lansing, Michigan, February 2017.

Research Overview, meeting with KWS, a private company with research team in Einbeck, Germany: Use of Omics data for prediction of complex traits. Approaches in mid infrared spectroscopy data to improving fitness and fertility. KWS – Quantgen Research Group meeting, July 2017, Einbeck, Germany.

Multi-Omic Prediction of Cancer Progression using Bayesian Generalized Additive Models. Invited speaker, 5th International Conference on Quantitative Genetics, Madison, Wisconsin, June 2016.

Multi-Layer Omic Data, to Understand and Predict Progression of the Breast Cancer Outcome. Cancer Research Network (CRN), MSU cancer group, MSU, East Lansing, February 2016.

Genomics in The Big Data Era: A landscape of prediction accuracy for complex traits. 2016

Genetics Seminar, MSU, East Lansing, Michigan, September 2016.

Research Overview of the QuantGen Lab (short talk). IQ Institute, East Lansing, Michigan. Dec. 2016.

2/2012, Invited talk, Animal Science Department, University of Florida, Gainesville FL USA.

5/2012, Invited talk, Animal Science Department, University of California, Davis CA USA.

8/2012, Biostatistics Seminar, Biostatistics Department, University of Alabama, Birmingham AL USA.

10/2012, Seminar, Center for metabolic Bone Diseases, University of Alabama, Birmingham AL USA.

10/2013, Invited talk, Medical School, Michigan State University, Lansing MI USA.

11/2013, Journal Club, Section on Statistical Genetics, Biostatistics Department, University of Alabama at Birmingham, AL USA.

8/2014, Invited speaker at WCGALP, 2014, Vancouver, Canada.

2/26/2015 Invited speaker at Cancer Meeting Talks, MSU

Center for Metabolic Bone Disease, University of Alabama at Birmingham. “Prediction of Complex Traits Using Genomic Information”, 10/5/2012.

Journal Club, University of Alabama at Birmingham, 1/2011

Joint Statistical Meetings. JSA, Miami 3, 2011. Whole Genome Prediction of Skin Cancer Risk.

Animal Science Department, “Genomic Selection: Opportunities and Challenges”, UF, Gainesville, Florida. 2/20/2012.

Animal Science Department, May 16/17/2012 “Genomic Selection” University of California - Davis California

Section on Statistical Genetics, Biostatistics Department, University of Alabama at Birmingham. “Analysis and Prediction of Complex Traits Using Genomic Information”, 8/3/2012.

[Center for Metabolic Bone Disease](#), University of Alabama at Birmingham. “Prediction of Complex Traits Using Genomic Information”, 10/5/2012.

**Publications:
Published or
In press**

Summary Count of Accepted Publications: Up to date I have **88 publications, 67 peer-reviewed publications** (either published or *in press*) and **14 non-peer-reviewed publication** that includes extension articles and dissertations. The publications include 14 first author, 25 second author and 19 last-author publications. Abstracts/posters are not included in this curriculum. An NCBI list of publications of articles with PMID can be seen here: [Ana I Vazquez publications](#).

- 88 Alesa H. Netzley, Ryan D. Hunt, Josue Franco-Arellano, Nicole Arnold, Kirk A. Munoz, Aimee C. Colbath, Tamara Reid Bush, Galit Pelled, **A.I. Vazquez**. "Multimodal characterization of Yucatan minipig behavior and physiology through maturation" *In press*, Scientific Reports, 2021.
- 87 M. Behring, Y. Ye, A. Elkholy ,P. Bajpai ,S. Agarwal, H. Kim, Akinyemi I. Ojesina, Howard W Wiener, U Manne, S. Shrestha, Ana I. Vazquez. "Immunophenotype-associated gene signature in ductal breast tumors varies by receptor subtype, but the expression of individual signature genes remains consistent". *Cancer Medicine*, Aug 2021. 10(16):5712-5720. [[PMID: 34189853](#)]
- 86 R.J. Reynolds, M.R. Irvin, S.L. Bridges, Jr, H. Kim, T.R. Merriman, D.K. Arnett, J.A. Singh, N.A. Sumpter, A.S. Lupi, **A.I. Vazquez**. "Genetic correlations between traits associated with hyperuricemia, gout and comorbidities". *European Journal of Human Genetics*, 2021 Sep ;29(9):1438-1445. [[PMID: 33637890](#)]
- 85 Fernando Aguater, **A.I. Vazquez**, Tony R Merriman, and Gustavo de los Campos. "Mapping Pleiotropic Loci Using a Fast-Sequential Testing Algorithm". *European Journal of Human Genetics*, 2021. Online ahead of print. [[PMID: 34145383](#)]
- 84 Gonzalez-Reymundez, A., and **A.I. Vazquez**. "Multi-omic signatures identify pan-cancer classes of tumors beyond tissue of origin". *Scientific Reports*, 10(1):8341, 2020. [[PMID: 32433524](#)].
- 83 Gonzalez-Reymundez, A., I. Li, H. Cheng, D. Pathak, A. Pathak, G. de los Campos, **A.I. Vazquez**. "Breast cancer survival and the expression of genes related to alcohol drinking". *PLOS One*, 15(2): e0228957, 2020. [[PMID: 32078659](#)].

- 82 Mukerjee, S., A. Gonzalez-Reymundez, S. Lunt, **A.I. Vazquez**. “DNA Methylation and Gene Expression with Clinical Covariates Explain Variation in Aggressiveness and Survival of Pancreatic Cancer Patients”, *Cancer Investigation*, 2020. [[PMID: 32935594](#)].
- 81 S.A. Funkhouser, **AI Vazquez**, JP Steibel, CW Ernst, G de los Campos. “Deciphering sex-specific genetic architectures using local Bayesian regressions”. *Genetics*, 215(1):231-241, 2020. [[PMID: 32198180](#)].
- 80 G. de los Campos, T. Pook, A. Gonzalez-Raymundez, H. Simianer, G. Mias, **A.I. Vazquez**. “ANOVA-HD: Analysis of variance when both input and output layers are high-dimensional”. *PLoS One*, 2020. [[PMID: 33315963](#)]
- 79 T. R Merriman, K.G. Saag, **A.I. Vazquez**, G. de Los Campos, Richard J Reynolds. Association of moderate alcohol consumption with protection to heart disease: Mendelian randomization and pleiotropy. *In Press*, 2020.
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