

**Chun-Peng James Chen**

Assistant Professor (70% Research, 30% Teaching)

School of Animal Sciences, Virginia Tech

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**A. PROFESSIONAL EXPERIENCE**

Institution	Position	Date
Virginia Tech	Assistant Professor	2022 - Present
University of California, Davis	Postdoctoral Researcher	2021
BASF	Biostatistician Summer Intern	Summer 2019
Academia Sinica	Research Assistant	2016
R.O.C. Army	Corporal	2014 - 2015

**B. EDUCATION**

Institution	Degree and Major	Date
Washington State University	Ph.D. in Crop Science	2016 – 2021
National Taiwan University	B.S. in Agronomy	2010 – 2014

**C. SELECTED GRANTS**

- **NSF CPS** (Cyber Physical Systems) **\$999,999**  
Role: *Co-Principal Director (PD: R. White)* 2026 – 2029  
Title: Greener Grazing: A Cyberphysical (Sentient) System for Temporal and Spatially Responsive Climate-Smart Grazing
- **USDA-NIFA-AFRI-A1231** (Animal Nutrition, Growth and Lactation) **\$619,609**  
Role: *Co-Principal Director (PD: K. Daniels)* 2025 – 2029  
Title: Enhancing Dairy Heifer Growth Efficiency Through Increased Understanding of Nutrient Degradability During Heat Stress
- **USDA-NIFA-AFRI-A1541** (Data Science for Food and Agricultural Systems) **\$649,741**  
Role: *Principal Director* 2023 – 2028  
Title: Acoustic Data as a Novel Trait to Manage Welfare and Environmental Impact in Precision Cow Farming
- **Virginia Tech CALS Integrated Internal Competitive Grants** **\$30,000**  
Role: *Principal Director* 2023 – 2024  
Title: Automated Computer-Vision-Based Kit to Prevent the Spread of Invasive Species
- **Pratt Equipment Grant** **\$90,000**  
Role: *Co-Principal Director (PD: G. Ferreira)* 2022 – 2023  
Title: Precision Methane Monitoring to Primely Position Virginia Tech at the Intersection of Environmental Management and Productivity Optimization

## D. PUBLICATIONS (\* denotes senior authorship)

As of January 7, 2026, on Google Scholar - h-index:11, total citations:372

### a) Peer-Reviewed Journal Articles

1. Das, M., F.-L.C. Liu, C.T. Hartle, C.-C.S. Yang, and **C.P.J. Chen\***. 2025. An automated approach for counting ants in densely populated images and gaining insight into ant foraging behavior. *Ecological Informatics* 91:103391. <https://doi.org/10.1016/j.ecoinf.2025.103391>.
2. Limede, A.C., R.S. Marques\*, F.A.A. Cidrini, G.A.P. Souza, E.F. Santos, X. Wu, I.S. De Souza, T. Qualharelo, R.F. Cooke, and **C.P.J. Chen**. 2025. Using audio-visual monitoring to evaluate immune and behavioral indicators to lipopolysaccharide challenge in beef cattle. *J Anim Sci* skaf345. <https://doi.org/10.1093/jas/skaf345>.
3. Das, M., Ferreira, G., **Chen, C.P.J.\***, 2025. Evaluating model generalization for cow detection in free-stall barn settings: Insights from the COW Localization (COLO) dataset. *Smart Agricultural Technology* 11, 101054. <https://doi.org/10.1016/j.atech.2025.101054>
4. Wright, R.K., Thompson, R.K., **Chen, C.P.J.**, White, R.R.\* , 2025. Spectral Sensing for Forage Nutritive Value Determination of Cool Season, Grass Pastures During the Grazing Season. *Journal of Animal Science* skaf151. <https://doi.org/10.1093/jas/skaf151>
5. **Chen, C.P.J.\***, White, R.R., Wright, R., 2025. Common pitfalls in evaluating model performance and strategies for avoidance in agricultural studies. *Computers and Electronics in Agriculture* 234, 110126. <https://doi.org/10.1016/j.compag.2025.110126>
6. Washburn, J.D.\*, Varela, J.I., Xavier, A., Chen, Q., Ertl, D., et al., 2025. Global genotype by environment prediction competition reveals that diverse modeling strategies can deliver satisfactory maize yield estimates. *Genetics* iyae195. <https://doi.org/10.1093/genetics/iyae195>
7. **Chen, C.P.J.\***, Hu, Y., Li, X., Morris, C.F., Delwiche, S., Carter, A.H., Steber, C., Zhang, Z., 2023. An independent validation reveals the potential to predict Hagberg–Perten falling number using spectrometers. *The Plant Phenome Journal* 6, e20070. <https://doi.org/10.1002/ppj.2.20070>
8. Massahiro Yassue, R., Galli, G., **Chen, C.P.J.**, Fritsche-Neto, R., Morota, G.\* , 2023. Genome-wide association analysis of hyperspectral reflectance data to dissect the genetic architecture of growth-related traits in maize under plant growth-promoting bacteria inoculation. *Plant Direct* 7, e492. <https://doi.org/10.1002/pld3.492>
9. **Chen, C.P.J.\***, Ferreira, G., 2022. Evaluation of walking activity data during pregnancy as an indicator of pregnancy loss in dairy cattle. *JDS Communications* 4, 166–168. <https://doi.org/10.3168/jdsc.2022-0304>
10. **Chen, C.P.J.**, Morota, G., Lee, K., Zhang, Z., Cheng, H.\* , 2022. VTag: a semi-supervised pipeline for tracking pig activity with a single top-view camera. *Journal of Animal Science* 100. <https://doi.org/10.1093/jas/skac147>
11. **Chen, C.P.J.**, Garrick, D., Fernando, R., Karaman, E., Stricker, C., Keehan, M., Cheng, H.\* , 2022. XSim version 2: simulation of modern breeding programs. *G3 Genes|Genomes| Genetics* 12. <https://doi.org/10.1093/g3journal/jkac032>
12. Hu, Y., Sjöberg, S.M., **Chen, C.P.J.**, Hauvermale, A.L., Morris, C.F., Delwiche, S.R., Cannon, A.E., Steber, C.M., Zhang, Z.\* , 2022. As the number falls, alternatives to the Hagberg–Perten falling number method: A review. *Comprehensive Reviews in Food Science and Food Safety* 21, 2105–2117. <https://doi.org/10.1111/1541-4337.12959>
13. Tang, Z., Parajuli, A., **Chen, C.P.J.**, Hu, Y., Revolinski, S., Medina, C.A., Lin, S., Zhang, Z., Yu, L.X.\* , 2021. Validation of UAV-based alfalfa biomass predictability using photogrammetry

- with fully automatic plot segmentation. Scientific Reports 11, 3336. <https://doi.org/10.1038/s41598-021-82797-x>
14. **Chen, C.P.J.\***, Zhang, Z., 2020. GRID: A Python Package for Field Plot Phenotyping Using Aerial Images. Remote Sensing 12, 1697. <https://doi.org/10.3390/rs12111697>
  15. Liu, L., Zhou, J., **Chen, C.P.J.**, Zhang, J., Wen, W., Tian, J., Zhang, Z., Gu, Y.\* , 2020. GWAS-Based Identification of New Loci for Milk Yield, Fat, and Protein in Holstein Cattle. Animals 10, 2048. <https://doi.org/10.3390/ani10112048>
  16. Zhou, J., Liu, L., **Chen, C.P.J.**, Zhang, M., Lu, X., Zhang, Z., Huang, X., Shi, Y., 2019. Genome-wide association study of milk and reproductive traits in dual-purpose Xinjiang Brown cattle. BMC Genomics 20, 827. <https://doi.org/10.1186/s12864-019-6224-x>
  17. **Chen, C.P.J.**, Zhang, Z.\* , 2018. iPat: intelligent prediction and association tool for genomic research. Bioinformatics 34, 1925–1927. <https://doi.org/10.1093/bioinformatics/bty015>
- b) Peer-Reviewed Conference Proceedings**
18. Wu, X., G. Ferreira, **C.P.J. Chen\***, 2025. Audio-Based Classification of Cattle Eructation Events for Methane Emission Monitoring Using Machine learning. The 3rd US Conference on Precision Livestock Farming, Nebraska, USA.
  19. Yang, S., Y. Huang, J. Howard, V. Brown, **C.P.J. Chen\***, 2025. Characterize the Predictability of High-Quality Semen Boars from B-Ultrasound Imaging. The 3rd US Conference on Precision Livestock Farming, Nebraska, USA.
  20. **Chen, C.P.J.**, G. Morota, and H. Cheng\*, 2022 VTag: Automatic pipeline to annotate video data for pig phenomics studies. The 12th World Congress of Genetics Applied to Livestock Production, Rotterdam, The Netherlands
  21. **Chen, C.P.J.** and Z. Zhang\*, 2018 GWAS and GS Are as Easy as Clicking and Dragging with iPat. The 11th World Congress of Genetics Applied to Livestock Production, Auckland, New Zealand
- c) Peer-Reviewed Book Chapters**
22. **Chen, C.P.J.**, Rutkoski, J., Schnable, J.C., Murray, S.C., Wang, L., Jin, X., Stich, B., Crossa, J., Hayes, B.J., Zhang, Z.\* , 2023. Role of the Genomics-Phenomics-Agronomy Paradigm in Plant Breeding, in: Plant Breeding Reviews. WILEY, pp. 622–668.

**E. TEACHING and MENTORSHIP****a) Courses Developed**

- ASPC-5984 Special Study: Agriculture Data Science
- ASPC-2984 Special Study: Data-Based Animal Management
- ASPC-2714 Design Precision Animal Agriculture System

**b) Workshops and Short Courses**

- Workshop: Three Types of Risk in Model Validation. Summer 2023  
Role: Invited lecturer  
Host: National Animal Nutrition Program by ADSA. Ottawa, Canada
- Short course: Modern Programming in Genome to Phenome. Summer 2022  
Role: Invited lecturer  
Host: University of California Davis, CA, USA

**c) Mentored Students**

Role	Student	Degree	Period
Thesis committee chair	X. Wu	Ph.D.	2023 - Present
	S. Yang	M.S.	2023 - Present
	M. Das	M.S.	2022 - 2024
Thesis committee member	G. Begalli	Ph.D.	2025 - Present
	R. Wright	Ph.D.	2023 - 2025
	S. Amorim	Ph.D.	2022 - 2024
	A. Webster	M.S.	2024 - 2025
Undergrad. research advisor	K. Noone	B.S.	2024 - Present
	K. Paff	B.S.	2024 - Present
	M. McAlindin	B.S.	2024 - Present

**F. SERVICE****a) External**

- Poster Judge - International Conference on Precision Agriculture 2024
- Ad-hoc Reviewer:
  - o Biological Sciences: Animals, Crop & Pasture Science, Ecological Informatics, Frontier in Genetics, Journal of Animal Science, Journal of Dairy Science, Muscle Science, PLoS One
  - o Computational and Engineering Sciences: Bioinformatics, Computer and Electronics in Agriculture, IEEE Photonics, IEEE Sensors, IEEE Transactions on Human-Machine Systems, IEEE Wireless Communications Letters, IETE Journal of Research

**b) Internal (College)**

- Review Panel – CALS ORI Graduate Research Scholarship 2025
- Member - College of Agriculture and Life Sciences Dean Search Committee 2024

**c) Internal (Department)**

- Member - School of Animal Sciences (SAS) Staff Recognition Committee 2025 - Present
- Member - SAS Graduate Education Committee 2024 - Present
- Presentation judge - Annual SAS Research Symposium 2025
- Poster judge - Annual SAS Research Symposium 2024
- Poster judge - Annual Food Science and Technology Poster Competition 2023

**G. INTELLECTUAL PROPERTY**

**a) Software**

- VTag (2022). A semi-supervised pipeline for tracking pig activity with a single top-view camera. Language: Python. Available at: [github.com/vt-ads/vtag](https://github.com/vt-ads/vtag). (Described in Journal of Animal Science, doi: 10.1093/jas/skac147).
- XSimV2 (2022). A fast and user-friendly tool to simulate sequence data and complicated pedigree structures. Language: Julia. Available at: [github.com/reworkhow/XSim.jl](https://github.com/reworkhow/XSim.jl). (Described in G3: Genes|Genomes|Genetics, doi: 10.1093/g3journal/jkac032).
- GRID (2020). A Python Package for Aerial High-Throughput Phenotyping. Language: Python. Available at: [github.com/Poissonfish/GRID](https://github.com/Poissonfish/GRID). (Described in Remote Sensing, doi: 10.3390/rs12111697).
- iPat (2018). Intelligent Tool for Prediction and Association. Language: Java/R. Available at: [github.com/Poissonfish/iPat](https://github.com/Poissonfish/iPat). (Described in Bioinformatics, doi: 10.1093/bioinformatics/bty015).

**b) Patents**

S. Green, D. Huffman, and **C.P.J. Chen** (2024). *Method and system for artificial intelligence-based analytics of dental pads of livestock*. U.S. Patent Application No. 18/985,699. Filed December 23, 2024. Patent Pending.

**H. PROFESSIONAL MEMBERSHIPS**

- Member of the American Society of Animal Science 2025 - Present
- Member of the International Society of Precision Agriculture 2024 - Present
- Member of the American Dairy Science Association 2022 - Present