

Rosa Paula Cuevas

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Career Summary

Data analyst with formal training in food science. Thrives in multidisciplinary teams that devise data-driven solutions for real-world problems. Generates insights from large datasets using Excel, R, and Python. Communicates impactful stories gleaned from data analytics and visualisation to stakeholders.

Technical Skills

Languages: R, Python, SQL, HTML, CSS, JavaScript

Data Visualisation and Manipulation: pandas, matplotlib, ggplot2, circlize, gridExtra, corrplot

Statistical Analysis: scipy, numpy, agricolae, multinomial logistic regression, random forest

Laboratory: scientific writing, rice chemistry, sensory evaluation, rheometry, texture profile analysis

Projects

Name: *Development of a dashboard using data from the R. Dunn Lab's Belly Button Project*

- **Summary:** The Rob Dunn Lab at NCSU has explored the microbial diversity of the belly button. An interactive dashboard was developed to communicate the complex results to a wider audience.
- **Tech Used:** (*back-end*) sqlite, Python, Flask; (*front-end*) HTML, CSS, JavaScript
- **Role:** Full stack development of an interactive dashboard.
- **Links:** (*deployed project*) <https://still-brook-99773.herokuapp.com/>;
(*documentation*) https://github.com/rochiecuevas/Belly_Button_Biodiversity

Name: *Rice classification based on quality*

- **Summary:** Rice samples with similar chemical test results are assumed to have similar quality but consumers can easily differentiate what chemical tests do not. How to classify these similar rice varieties, then? Chemical and mechanical assays, and machine learning approaches provide insights that could potentially change the way rice is marketed internationally.
- **Tech Used:** R, caret, ggplot2, randomForest, nnet
- **Roles:** Designed experiments; generated data; conducted statistical analyses; co-wrote the paper
- **Link to the publication:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6179975/>

Name: *Determination of the drivers of food choice of high-income urban Filipinos*

- **Summary:** The Philippines produces local “heirloom” varieties that are available internationally but not locally. How can local market penetration be increased? Text mining and correlation analyses of consumer survey results from high-income urban Filipinos, indicated potential areas for heirloom rice market promotion. Once these varieties have larger penetration in the domestic urban market, they may be used as tools for preserving the cultures of indigenous peoples who cultivate them.

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- **Tech Used:** R, tm, corrplot
- **Roles:** Led the consumer survey; conducted statistical analyses; co-wrote the paper
- **Link to the publication:** <https://www.sciencedirect.com/science/article/pii/S1878450X17300410>

Experience

International Rice Research Institute – Los Banos, Laguna, Philippines

Scientist (2015–2018)

- Headed and managed the Sensory Evaluation Laboratory.
- Co-authored 6 peer-reviewed journal articles, 7 book chapters on grain quality, genetics, chemistry, economics, and market research.
- Generated insights from rice quality and consumer data that could impact the international rice market through multinomial logistic regression, random forest) and visualisation.
- Generated project funding to understand food choice behaviours in India and in the Philippines.

Consultant (2014–2015)

- Generated descriptive sensory profiles for 130 rice samples from a diverse collection.
- Enhanced market linkages of Philippine heirloom rice varieties via collaborations with chefs.

Post-doctoral Fellow (2010–2014)

- Established the Grain Quality and Nutrition Centre's (GQNC) sensory evaluation team.
- Co-authored 3 scientific articles, 1 book chapter on genetics, starch chemistry, and food quality.

Professional Service Staff (2008–2010)

- Co-authored 3 scientific articles on associating genetics, starch chemistry, and food quality.
- Enhanced the GQNC's full-cost recovery program for client services through developing databases (MS Access) and organising services into work packages.

Education

University of California, Berkeley Extension – San Francisco, CA, USA

Certificate, Data Analytics and Visualisation Boot Camp

University of Queensland – Brisbane, QLD, Australia

PhD Agricultural Science

Doctoral Thesis: Starch microstructure and functional properties in waxy rice (*Oryza sativa* L.)

University of the Philippines Los Banos – Los Banos, Laguna, Philippines

BSc Biology, Magna cum Laude

Thesis: Production and utilisation of crude tylosin from high-yielding *Streptomyces fradiae* NRRL 2702 Mutant No. 93 as therapeutic agent in broilers