

Stuttgart, 07.04.2021



Laura Monica Dale, PhD

Landesverband Baden-Württemberg für Leistungs- und
Qualitätsprüfungen in der Tierzucht e.V.

Department: IT-Chemometrics
Stuttgart, Baden-Württemberg
Deutschland

Email: dale_lm@yahoo.com

Mobile: 0049 (0) 17 41 82 68 79

https://www.researchgate.net/profile/Laura_Dale

<https://de.linkedin.com/in/lauramonicaale>

https://www.xing.com/profile/LauraMonica_Dale

Focus Areas covered: Postdoctoral Fellow

Objective

I hold a degree in bioengineering science, on chemometrics design and strong statistical skills of 13 years' experience in the design of complex calibrations models, where my extensive research experience can increase the bottom line. I want to implement my skills to serve to the growing of the new research in pharmaceutical industry, metabolomics, chemometrics, statistics, agriculture, animal Science.

Education

- Oct 2010 – Mar 2014* **University of Liège**
Ph.D., Agricultural Sciences and Bioengineering
Gembloux, Belgium
- Oct 2009 – Jan 2011* **Banat University of Agronomical Sciences and Veterinary Medicine**
Postgraduate studies, Specialization in Computer Science
Timișoara, Romania
- Jun 2009 – Jun 2009* **University of Agricultural Sciences and Veterinary Medicine**
Specialization in Agronomy, Modernizing Agricultural Knowledge and
Information Systems
Cluj-Napoca, Romania
- Oct 2008 – Nov 2011* **University of Agricultural Sciences and Veterinary Medicine**
Ph.D., Agronomy
Cluj-Napoca, Romania
- Oct 2008 – Feb 2010* **University of Agricultural Sciences and Veterinary Medicine**
Master, Agronomy
Cluj-Napoca, Romania
- Oct 2003 – Jun 2008* **University of Agricultural Sciences and Veterinary Medicine**
Engineering, Foodstuffs

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Cluj-Napoca, Romania

Research Experience

- Apr 2018 – present* **Project Manager**
Landesverband Baden-Württemberg für Leistungs- und Qualitätsprüfungen in der Tierzucht e.V., Research and Development, Chemometrics, Germany
Dairy Cow - Animal Welfare
- May 2015 – Mar 2018* **PostDoc Position**
Rinder Daten Verbund GmbH, Entwicklung
Stuttgart, Baden-Württemberg, Germany

IT and Research Department- KlauenFITnet Project at RDV – THE CATTLE DATA NETWORK (RDV EDV-Entwicklungs- und Vertriebs GmbH) and LKV Baden-Württemberg.
- Apr 2014 – May 2015* **PostDoc Position**
University of Liège, Gembloux Agro-Bio Tech
Gembloux, Belgium

Strengthening the «Beurre d'Ardenne» PDO: The overall objective of the project is to improve the PDO technical and informational content.
OptiMIR project: The project aim is to develop innovative farm management that will use the spectral analysis.
- Nov 2012 – Mar 2014* **Research Assistant**
University of Liège, Department of Life Sciences
Liège, Belgium

OptiMIR project - new tools for a more sustainable dairy sector
www.optimir.eu
- Oct 2011 – Mar 2014* **Invited Researcher**
Walloon Agricultural Research Centre CRA-W, Department of Valorisation of Agricultural Products (D4),
Gembloux, Belgium
- Oct 2008 – Nov 2011* **PhD Student**
University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture
Cluj-Napoca, Romania

Awards & Grants

- Dec 2009* Award: 2nd place in the competition «Young Specialists and Research in Agriculture»

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Feb 2007 Grant: «wird im Sinne der Zeilsetzungen der Ausschreibung ein Stipendium für einen Studien- bzw. Forschungsaufenthalt an der BOKU»

Skills & Activities

Skills To develop MastiMIR **binomial classification model** with the help of veterinary diagnosis, MIR spectrometry and RStudio for Elena Project and HappyMoo Project.
To develop KetoMIR **binomial classification model** with the help of veterinary diagnosis, MIR spectrometry and RStudio for D4Dairy Project.
To develop feed efficiency NEL and ME and energy balances NEL and ME **calibrations** and **statistical models** with the help of MIR spectrometry and RStudio for OptiKuh and eMissionCow consortium and projects.
To develop blood BHB, NEFA, Glucose, Insulin, IGF-1 and Adipopectin **calibrations** and **statistical models** with the help of MIR spectrometry and RStudio for OptiKuh and eMissionCow consortium and projects.
To handle **chemical** and **genetic** information due to the use of **chemometrics** tools for OptiMIR and KlauenFitNet project.
To develop blood BHB and NEFA **calibrations** and **statistical models** with the help of MIR spectrometry and RStudio for European Milk Recording Organization and Qualitas AG Switzerland.
To develop **calibrations** and **statistical models** with the help of MIR spectrometry and RStudio for cow health status at LKV-Baden Württemberg.
To develop **calibrations** and **statistics models** with the help of **Pedometer** data and RStudio for cow lameness status at Germany Panel East and South.
To develop **calibrations** and **statistics models** with the help of MIR spectrometry and RStudio for cow energy balance status at LKV-Baden Württemberg.
To develop **calibrations** and **statistics models** with the help of MIR spectrometry and RStudio for cow blood BHB and blood NEFA at LKV-Baden Württemberg.
To develop **calibrations** and **statistics models** with the help of MIR spectrometry and RStudio for the cow pergancy and fertility status for OptiMIR partners.
To develop **discrimination models** with the help of NIR-HSI for the pure grassland species, as part of my PhD theses in Apuseni Mountains.
To develop a discrimination model by NIR-HSI for **botanical families** composed from pure grassland species as part of my PhD theses in Apuseni Mountains, Gârda de Sus grassland.
Trained and supervised 8 ISI articles regarding **cow fertility, forage quality and chemometrics**.
Analyzed **forage quality** data determined by NIR and using software as **WinISI FOSS 4.6** and **Matlab - PLS toolbox** as part of my PhD in Apuseni Mountains, Gârda de Sus grassland.

Keys *Spectrometry:*

- Infrared Spectroscopy
- VIS- Infrared Spectroscopy
- Near Infrared Spectroscopy
- Middle Infrared Spectroscopy

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- Raman Spectroscopy
- Hyperspectral imaging NIR

Chemometrics:

- Descriptive Statistics
- Multivariate Statistical Analysis
- Statistical Analysis
- Applied Statistics
- Data Analysis
- Bioinformatics Analysis
- Survival Analysis

Machine Learning:

- Classification Analysis:
 - Principal Component Analysis
 - Discriminant Analysis
 - Soft Independent Modeling of Class Analogies
 - Super Vector Machine
 - Kernel Neighbors
 - Naive Bayes
 - Tree-Based Approaches
- Regression Analysis:
 - Linear Regression
 - Logistic Regression
 - Multivariate Regression Analysis
 - Principal Component Regression
 - Ridge Regression
 - Random Forests
- Cluster Analysis:
 - Centroid models - k-means algorithm
 - Neural models - neural networks implement a form of Principal Component Analysis
 - Decision Tree

Deep Learning:

- Artificial Neural Networks
- Deep Neural Networks
- Convolutional Neural Networks
- Imaging:
 - Hyperspectral Image Analysis
 - Chemical Imaging

Applied Predictive Modeling:

- Chemistry
- Agricultural Biochemistry
 - Qualitative analysis
 - Quantitative analysis
- Dairy Studies
 - Milk composition and quality
 - Milk fatty acids composition
 - Animal health status
 - Animal welfare
- Bioinformatics:
 - Genomics - Multiple sequence alignment
 - Bayesian Analysis
 - Simultaneous component analysis (ASCA)

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- Radial basis function networks
- Bayesian classification
- Decision trees
- Random forest

Technical skills:

- Programming Languages:
 - Most experienced with:
 - Rstudio
 - SAS
 - Matlab
 - Unscramble
 - PerkinEmerSpectrum
 - WinISI
 - HyperSee
 - Some experience with:
 - Java
 - JavaScript
 - PLSQL
 - SQL
 - Oracle SQL
 - Maven
 - GIT
 - SVN
 - Dabbled in:
 - JasperSoft Studio

Languages **Deutsch:** understanding and use of language.

English: fluency and language use in the workplace.

French: understanding and use of language.

Hungary: Elementary Level.

Spanish: understanding, speaking - Elementary level.

Romanian: mother tongue.

Voluntary Memberships InterNations – Ambassador Stuttgart Community since 2018

InterNations – Consul Stuttgart Community since 2017

Interests **Educational** internship.

Applied Research.

Regional Basketball Referee: i.e. Deutschland, Belgium and Romania.

Basketball Coach: for young basketball players.

Travel around the world: Eurasia, USA, Africa.

Hobbies regarding:

- photography, cooking
- driving, hiking
- football, basketball, tennis
- body pump, cross training, yoga
- nature and nature photographie