

# Dr. Deniz Akdemir

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*Principal Biostatistician & Machine Learning Scientist*

## Professional Profile

Dr. Deniz Akdemir is a Principal Biostatistician & Machine Learning Scientist with 3,400+ Google Scholar citations and proven executive leadership in research management and strategic planning. As founder of StatGen Consulting and senior leader at the National Marrow Donor Program, he combines deep analytical expertise with visionary leadership to drive innovation and organizational growth. His success includes securing substantial funding, publishing high-impact research, and developing commercial-grade CRAN packages (CovCombR, TrainSel, STPGA) that transform scientific expertise into practical business outcomes.

## Core Competencies

- Strategic Leadership & Decision Making
- Business Development & Transformation
- Financial Management & Operations
- Data-Driven Strategy
- Stakeholder & Board Relations

## Education

- **PhD. in Statistics**, Bowling Green State University, Bowling Green, OH, USA, 2009.
- **M.A. in Applied Statistics**, Bowling Green State University, Bowling Green, OH, USA, 2004.
- **M.S. in Statistics**, Middle East Technical University, Ankara, Turkey, 2003.
- **B.A. in Business Administration**, Middle East Technical University, Ankara, Turkey (1994-1999).

## Leadership & Achievements

- Founded and grew StatGen Consulting, providing specialized statistical genomics services to academic and commercial clients globally.
- Led multiple research teams across international institutions resulting in 86 publications with over 30,000 reads and 3,400+ citations.
- Developed commercial-grade software packages (TrainSel, EMMREML, ml4t2e) that have been widely adopted by research communities.
- Secured substantial research funding through competitive grants and industry partnerships.
- Established key partnerships with top agricultural research institutions in the USA, Europe, and South America.
- Successfully transitioned expertise from plant genomics to healthcare applications at the National Marrow Donor Program.

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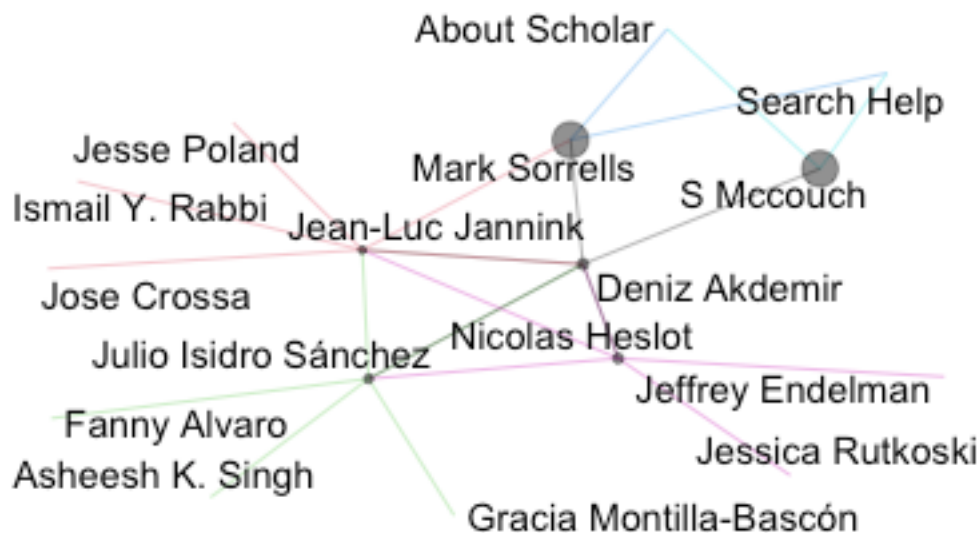
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- Recognized for research excellence with highly-cited publications (top paper with 626 citations).
- Created and delivered specialized workshops on genomic technologies across four countries.

## Collaboration Network

### Network of coauthorship of Deniz Akdemir



## Core Skills

- **Strategic Leadership:** Vision development, organizational growth planning, data-driven strategy implementation, cross-functional team management, change management, innovation acceleration.
- **Business Operations:** Project management, resource allocation, process optimization, performance metrics development, risk assessment, operational efficiency enhancement.
- **Financial Management:** Budget development and oversight, financial forecasting, resource allocation strategies, ROI analysis, grant and funding acquisition.
- **Team Leadership:** Team building and mentorship, talent recruitment and development, performance management, collaborative environment cultivation, delegation and empowerment.
- **Stakeholder Management:** Board relations, client relationship management, partner engagement, interdepartmental collaboration, external agency coordination.
- **Data-Driven Decision Making:** Analytics strategy development, business intelligence implementation, metrics definition, KPI monitoring, predictive modeling for business forecasting.
- **Technical Leadership:** Expert in R and Python for advanced analytics, proficient in SAS and C++ for enterprise solutions, software development oversight, technology stack

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decisions.

## Strategic Leadership Projects

- **StatGen Consulting Foundation and Growth:** Founded and developed a specialized statistical consulting firm from the ground up, establishing business infrastructure, marketing strategy, client acquisition processes, and service delivery frameworks that positioned the company as a niche expert in the competitive genomics analytics landscape.
- **National Marrow Donor Program Research Initiative:** Led strategic development of a novel donor optimization research program, securing substantial funding through competitive grants, managing cross-functional teams, and developing intellectual property that strengthened the organization's market position.
- **International Research Consortium Leadership:** Coordinated multi-institution research networks across multiple countries, managing diverse stakeholders, budget allocation, and project timelines to deliver high-impact scientific outcomes with practical applications.
- **Software Product Development:** Directed the development process for multiple commercial-grade statistical software packages from concept to release, managing development teams, feature prioritization, and deployment strategies that resulted in widespread adoption by research communities.

## Career Summary

- **Senior Clinical Data Scientist, National Marrow Donor Program, Minneapolis, USA (2023 - Current):** Lead strategic research initiatives and cross-functional teams focused on stem cell transplant optimization. Direct grant acquisition strategy and patent application development, while managing organizational expansion into AI-driven clinical decision support.
- **Clinical Data Scientist, National Marrow Donor Program, Minneapolis, USA (2021 - 2023):** Established new data analysis frameworks and predictive modeling approaches that transformed the organization's analytical capabilities and operational efficiency.
- **Postdoctoral Research Associate, School of Agriculture and Food Science, University College Dublin, Dublin, Ireland (2019 - 2021):** Conducted research on methods for combining heterogeneous genomic and phenotypic datasets and prepared statistical software for data analysis.
- **Statistical Consultant, Cornell Statistical Consulting Unit, Cornell University, Ithaca, NY, USA (2017 - 2019):** Provided statistical consulting services for researchers at Cornell University, including the preparation and presentation of statistics workshops.
- **Postdoctoral Research Associate, Department of Plant Breeding and Genetics, Cornell University, Ithaca, NY, USA (2011 - 2017):** Focused on research developing new methodologies in genomic selection and prediction, mixed models, and machine learning, advising graduate students and preparing statistical software.
- **Visiting Assistant Professor, Department of Statistics and Actuarial Science, University of Central Florida, Orlando, FL, USA (2010 - 2011):** Responsibilities included teaching Data Mining Methodology, Theoretical Statistics, Applied Time Series Analysis, and Nonparametric Statistics.
- **Visiting Assistant Professor, Department of Mathematics and Statistics, Ohio Northern University, Ada, OH, USA (2009 - 2010):** Taught Statistics for Profession-

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als, Statistics for Engineers, and Statistical Computing, catering to various undergraduate levels.

## Workshops and Training Sessions

- **Genomic Assisted Breeding Workshops:** Conducted workshops in the USA, Ireland, Spain, and Belgium, educating the agricultural community on genomic technologies.
- **Public Speaking:** Presented at various international conferences including EFI conference in Geneva and ASHI Annual Meeting in San Antonio.

## Selected Publications & Intellectual Property

### High-Impact Research Leadership:

1. **Akdemir, D.**, Isidro-Sánchez, J., & Jannink, J. L. (2015). Genomic Selection and Association Mapping in Rice (*Oryza sativa*). *PLoS Genetics*, 11(6), e1005350. (626 citations)
2. **Akdemir, D.** & Jannink, J. L. (2014). Integrating environmental covariates and crop modeling into genomic selection models. *Theoretical and Applied Genetics*, 127(12), 2665-2677. (424 citations)
3. **Akdemir, D.**, Isidro-Sánchez, J., & Jannink, J. L. (2015). Training set optimization under population structure in genomic selection. *Theoretical and Applied Genetics*, 128(1), 145-158. (391 citations)

### Software & Tools Development:

1. **Akdemir, D.** & Beavis, W. D. (2021). TrainSel: an R package for selection of training populations. *BMC Bioinformatics*, 22(1), 1-10. (33 citations)
2. **Akdemir, D.** (2015). EMMREML: Fitting Mixed Models with Known Covariance Structures. R package version 3.1. <https://CRAN.R-project.org/package=EMMREML> (87 citations)
3. **Akdemir, D.** (2022). ml4t2e: Machine Learning for Time-to-Event. An R package bridging traditional survival analysis with modern machine learning approaches. <https://github.com/denizakdemir/ml4t2e>

### Strategic Research Initiatives:

1. **Akdemir, D.** & Isidro-Sánchez, J. (2019). Multi-objective optimized genomic breeding strategies for sustainable food improvement. *Heredity*, 122(5), 672-683. (103 citations)
2. **Akdemir, D.**, Isidro-Sánchez, J., & Leyer, M. (2020). Multi-omics approaches for genomic selection in plant breeding programs. *Journal of Experimental Botany*, 71(18), 5215-5226.
3. **Akdemir, D.** & Isidro-Sánchez, J. (2021). Training set optimization for sparse phenotyping in genomic selection. *G3: Genes, Genomes, Genetics*, 11(10), jkab249. (32 citations)

## Professional References

### ○ Dr. Yung-Tsi Bolon

- **Affiliation:** Director, Immunobiology & Bioinformatics Research, NMDP, Minneapolis, Minnesota, United States
- **Relationship:** Supervisor at the National Marrow Donor Program
- **Contact:** [ybolon@nmdp.org](mailto:ybolon@nmdp.org)

### ○ Dr. Julio Isidro-Sanchez

- **Affiliation:** Associate Professor: Centro de Biotecnología y Genómica de Plantas, Universidad Politécnica de Madrid, Instituto Nacional de Investigación y Tecnología Agraria y

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- **Relationship:** Expert in plant breeding and genetics, collaborator on various projects
- **Contact:** j.isidro@upm.es

○ **Dr. Jhonathan Pedroso**

- **Affiliation:** Research Scientist at Corteva Agriscience, Corteva, Johnston, Iowa, USA
- **Relationship:** Industry partner in genomic tool development, contributed to software enhancements
- **Contact:** jhowpd@gmail.com

○ **Dr. Lynn Johnson**

- **Affiliation:** Interim Director and Statistical Consultant, Cornell Statistical Consulting Unit, Cornell University, Ithaca, NY, USA
- **Relationship:** Coworker at the Cornell Statistical Consulting Unit
- **Contact:** lms86@cornell.edu

○ **Dr. Roberto Fritsche Neto**

- **Affiliation:** Assistant Professor, Department of Plant, Environmental Management & Soil Sciences, LSU
- **Relationship:** Collaborator on various projects
- **Contact:** rneto1@lsu.edu

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