

Sally Paganin, Ph.D.

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RESEARCH INTERESTS	Bayesian nonparametrics, Computational Statistics, Hierarchical models, Item Response Theory, Models for Latent Variables, Statistical Genomics, Data visualization.	
CURRENT POSITION	Assistant Professor of Statistics (August 2023 – Present) Department of Statistics, The Ohio State University	
PAST POSITIONS	Research Fellow at Harvard T.H. Chan School of Public Health (March 2021 – August 2023) Department of Biostatistics, working with Jeff Miller on statistical methods for early cancer detection. Postdoctoral Researcher at UC Berkeley (September 2019 – March 2021) Department of Statistics, Department of Environmental Science, Policy & Management statistical methodology, applications and algorithms development in NIMBLE , collaborating with Perry de Valpine and Chris Paciorek .	
EDUCATION	Università degli Studi di Padova , Padova, Italy Department of Statistical Sciences 2019 Ph.D. in Statistical Sciences Thesis: Prior-driven cluster allocation in Bayesian mixture models Advisor: Bruno Scarpa ; Co-advisor Amy H. Herring 2016 M.S. in Statistical Sciences Thesis: Analysis of an insurance company sales structure: a Bayesian nonparametric model for a network of networks Advisor: Bruno Scarpa ; Co-advisor: Daniele Durante 2012 B.S. in Statistical Sciences and Information Technologies Thesis: Bayesian nonparametric models based on Dirichlet Process Advisor: Livio Finos ; Co-advisor: Dario Solari	
AWARDS	<ul style="list-style-type: none">• Honorable mention for SIS 2023 Best Young Contribution Awards• 2022 PDA Research Symposium honorarium recipient (HSPH)• Bayesian Analysis Discussion Paper of March 2021 issue (Editorial Board's choice) Travel awards <ul style="list-style-type: none">• Spring 2023 PDA Travel Award, Harvard T.H. Chan School of Public Health (1,500\$)• Young researcher travel award, 2022 ISBA world meeting (300\$)• Young researcher travel award, 2018 ISBA world meeting (250\$)• Travel award for COBAL V (2017), Guanajuato, Mexico (accommodation)• Young researcher travel award, 2016 ISBA world meeting (400\$)	

PUBLICATIONS

(*) authors listed in alphabetical order

Publications in refereed journals

4. **Paganin, S.**, Paciorek, C., Wehrhahn, C., Rodriguez, A., Rabe-Hesketh, S., de Valpine, P. (2022) [Computational methods for Bayesian semiparametric item response theory models using NIMBLE](#). *Journal of Educational and Behavioral Statistics*, 35(3), 307–335, doi:10.3102/10769986221136105
3. de Valpine, P., **Paganin, S.**, Turek, D. (2022). [compareMCMCs: An R package for studying MCMC efficiency](#). *Journal of Open Source Software*, 7(69), 3844, doi:10.21105/joss.03844
2. **Paganin, S.**, Herring, A.H., Olshan A.F., Dunson, D.B. and The National Birth Defect Prevention Study. (2021) [Centered Partition Process: Informative Priors for Clustering \(with Discussion\)](#). *Bayesian Analysis*, 16(1), 301–370. doi:10.1214/20-BA1197
1. Durante, D., **Paganin, S.**, Scarpa, B. and Dunson, D.B. (2017) [Bayesian modeling of networks in complex business intelligence problems](#). *Journal of the Royal Statistical Society: Series C* 66, 555–580

Collaborative papers

2. Saccon, D., Valdesalici, A., Boatto, E., Bortuluzzi, G., Moret, F., **Paganin, S.**, Solmi, M. (2023) Retrospective study in a cohort of subjects with substance use disorders in Veneto, Italy: real-world outcomes of an addiction daytime program treatment *Evidence-based Psychiatric Care* 9, 7-14 doi:10.36180/2421-4469-2023-3
1. Ottaviano, G., Favero, L., Hajrulla, S., Volpato, A., **Paganin, S.**, Bissolotti, G., Scarpa, B., Favero, R. (2023) Allergic rhinitis and asthma: relationship with transverse maxillary contraction and transverse expansion stability in children. *Applied Sciences*, 13(5):3200 doi:10.3390/app1305320

National conference proceedings (with peer-review)

- **Paganin, S.**, Miller J. (2023). *A Bayesian framework for early cancer screening, Book of Short Papers SIS 2023. "Statistical Learning, Sustainability and Impact Evaluation"*
- **Paganin, S.** (2021). Semiparametric IRT models for non-normal latent traits (pp. 178 - 181) *CLADAG 2021 Book of Abstracts and Short Papers*
- **Paganin, S.**, Paciorek C., de Valpine P. (2020). Bayesian IRT models in NIMBLE. (pp. 644 - 649) *Book of Short Papers SIS 2020*
- **Paganin, S.** (2019). Domain-knowledge based priors for clustering. *Proceedings of the Conference of the Italian Statistical Society. "Smart Statistics for Smart Applications"*, Pearson
- **Paganin, S.** (2017). Modeling of complex network data for targeted marketing. *Proceedings of the Conference of the Italian Statistical Society. "Statistics and Data Sciences: new challenges, new generations"*. Firenze University Press

Book Chapters and Discussions

(*) Aliverti, E., Paganin, S., Rigon, T. and Russo, M. (2019) Contributed discussion to “Latent nested nonparametric priors”. *Bayesian Analysis* 14, 4, 1303–1356

(*) Aliverti E., Forastiere L., Padellini T., Paganin S. and Wit E. (2018). [Hierarchical Graphical Model for Learning Functional Network Determinants](#). *"Studies in Neural Data Science"*, Springer Proceedings in Mathematics & Statistics

Edited Books

(*) Argiento, R., Camerlenghi, F., Paganin, S. [Eds.] (2022) [New Frontiers in Bayesian Statistics. BaYSM 2021, Online, September 1–3](#). Springer Proceedings in Mathematics and Statistics, Springer.

PREPRINTS

Under Review

- **Paganin, S.**, Page, G. L., Quintana, F. (2023) Informed Random Partition Models with Temporal Dependence [arXiv preprint](#)
- Qiu, M., **Paganin, S.**, Ohn, L., Lin, L. (2023) Bayesian Nonparametric Latent Class Analysis With Different Item Types. [OSFpreprint](#)
- **Paganin, S.**, de Valpine P. (2023). Computational methods for fast Bayesian model assessment via calibrated posterior p-values. [arXiv preprint](#)
- **Paganin, S.**, Russo, M., Scarpa, B. (2023). A generalized partial credit model for network-dependent latent traits with an application on modeling students' ability. (available upon request)

SOFTWARE

- [COMPAREMCMCs](#), *R package, version 0.5.0*. An R package for running, managing, and comparing results from different MCMC packages.
 - [NIMBLE](#), *R package, version 0.12.2*. Contributed with reversible jump MCMC.
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TEACHING & MENTORING EXPERIENCE

The Ohio State University

- Statistics 6730: Introduction to Computational Statistics **Autumn 2023**

UC Berkeley

- Mentor for the [Undergraduate research mentorships in statistics](#) (Spring 2020).
Mentee: Tianchi Liu. Project: *Building models and case studies using NIMBLE*.

Università degli Studi di Padova

- Thesis co-supervision: Claudia Stocchi (2021), master student in Statistical Sciences.
- *Statistical Methods for Insurance Marketing*. Invited lecture for the course of “Statistical Methods and Models for Business” taught by Prof. [Mariangela Guidolin](#). (April 24, 2018 & online on November 24, 2020).
- Mentor at *Scegli con noi*. Orientation events for high school students. (2014, 2015, 2016 editions) Campus Agripolis di Legnaro, Padova, Italy.
- *Advanced Statistical Inference* (M.Sc.), Year 2013/2014, Academic Tutor, Department of Statistical Sciences.
- *Introduction to Real Analysis* (B.Sc.), Year 2013/2014, Academic Tutor, Department of Statistical Sciences.

Short-courses

- [Programming With Hierarchical Statistical Models Using NIMBLE](#) (May 23, 2022). Full-day, hybrid short course during the 35th New England Statistics Symposium hosted at UConn.
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PRESENTATIONS

Invited Seminars

- A Bayesian framework for cancer screening and characterization
The Ohio State University, Division of Biostatistics, Seminar series. September 29, 2023.
- Bayesian IRT models in NIMBLE
University of Notre Dame, Dept. of Psychology (online) November 10, 2022.
- Fast Bayesian model assessment via calibrated posterior predictive p-values
University of Nottingham, Statistics and Probability seminar (online) April 7, 2022.
- Centered Partition Processes: Informative Priors for Clustering
Millenium Nucleus Center for the Discovery of Structures in Complex Data
Pontificia Universidad Católica de Chile (online) October 8, 2021.
- Centered Partition Processes: Informative Priors for Clustering
UC Davis, Department of Statistics (Spring seminars series), May 6, 2021.
- Centered Partition Process: Informative Priors for Clustering.
Bayesian Analysis - Discussion paper Webinar
[\[https://www.youtube.com/watch?v=V0zCB8doqlo\]](https://www.youtube.com/watch?v=V0zCB8doqlo)
March 29, 2021.

Invited talks

- Improved detection of allelic imbalance using biologically informed priors
CMStatistics 2023. Berlin, Germany. December, 18 2023.
- A Bayesian framework for early cancer screening.
IDWSDS 2023. j-ISBA organized session, International Day of Women in Statistics and Data Science, October 10, 2023. (virtual)
- A Bayesian framework for early cancer screening.
SIS 2023. Ancona, Italy, June, 23 2022.
- compareMCMCs: a R package for running, managing, and comparing results from different MCMC packages.
NESS 2023, Boston, June 7, 2023.
- Semiparametric IRT models for non-normal latent traits
Cladag 2021, Online conference, September 9, 2021.

- Informative model-based clustering via Centered Partition Processes.
YoungStatS "One World webinar" - Developments in Bayesian Nonparametrics virtual, April 21 2021.
- Modeling health surveys via semiparametric IRT models.
Bayesm:O. Session on "Advances in Bayesian methods for medical data", virtual, November 17, 2020.
- Prior-Driven Cluster Allocation in Bayesian Mixture Models.
JSM 2020. j-ISBA organized session, virtual conference, August 03, 2020
- Domain knowledge based priors for clustering.
SIS 2019. ySIS organized session. Milano, Italy. June 19, 2019
- Modeling of complex network data for targeted marketing.
SIS 2017. Firenze, Italy. June 29, 2017

Contributed talks

- A hierarchical Hidden Markov Model for cancer detection.
JSM 2022. Washington D.C., August, 10 2022
- A hierarchical Hidden Markov Model for cancer detection.
ISBA 2022. Montreal, Canada. July 1, 2022
- Statistics for early cancer detection.
PDA Research Symposium. HPSH, Harvard University, online. February 22, 2022
- Flexible model assessment via approximate calibrated posterior predictive p-values.
ISBA 2021. Online conference. June 29, 2021
- Centering Exchangeable Partition Models.
IBC 2018. Barcelona, Spain. July 10, 2018
- Bayesian modeling of networks in complex business intelligence problems.
COBAL V. Cimat, Guanajuato, Mexico. June 8, 2017

Poster presentations

- Flexible model assessment via approximate calibrated posterior predictive p-values .
ISBA 2021. Online conference. June 29, 2021
- Computational methods for Bayesian semiparametric Item Response Theory models.
WiDS Cambridge, 2021. Online conference. March 11, 2021
- Informative Bayesian Clustering for Mixture Models.
Advanced Statistics for Physics Discovery. Padova, Italy. September 24, 2018
- Centering Exchangeable Partition Models.
ISBA 2018. Edinburgh, United Kingdom. June 27, 2018
- Bayesian modeling of networks in complex business intelligence problems.
ISBA 2016. Forte Village Resort Convention Center Sardinia, Italy. June 15, 2016

VISITING PERIODS

Mar. 2019 – Jun. 2019. *Research visit* at Department of Environmental Science, Policy & Management, UC Berkeley.

Jan. 2018 – Mar. 2018. *Visiting Research Scholar* at the Department of Statistics, Duke University (NC, USA) under the supervision of Prof. Amy H. Herring

Oct. 2016 – Jun. 2017. *Visiting Research Scholar* at the Department of Biostatistics University of North Carolina at Chapel Hill (NC, USA) under the supervision of Prof. Amy H. Herring

EDITORIAL ACTIVITY

Associate Editor

from 06/2021 [The New England Journal of Statistics in Data Science](#) (Software section)

Reviewer

(2023) *Annals of Applied Statistics*, *JOSS* (2), *BMJ*, *NEJSDS*, *Journal of Statistical Computation and Simulation*.

(2022) *Statistical Papers*, *Journal of Machine Learning Research*.

(2021) *BMJ*, *R Journal* (2), *Journal of Computational and Graphical Statistics*, *Harvard Data Science Review*, *Applied Psychological Measurements*, *Duke Dathaton*.

(2020) *BMJ*, *Statistical Papers*, *NSF proposal review*, *JOSS*.

Positions in scientific societies

SERVICE TO
PROFESSION

- j-ISBA board, Treasurer (2020-2022)

Organization of scientific events

- Session organizer, at NESS 2023 “Recent advances in R software development: innovative tools and practical applications”.
- Scientific committee of [BayesComp 2023](#) (Levi, Finland).
- Session organizer, (with j-ISBA) at JSM 2022 “Advances in scalable Bayesian methods for spatial data”.
- Session organizer, (with j-ISBA) at ISBA 2022 “Advances in Bayesian methods for complex data”.
- Organizing committee of [BAYSM 2021](#) (virtual conference).
- Organizing committee of [ISBA 2021 World Meeting](#) (virtual conference).
- assistance to organization, IT set-up and conduction of the [NIMBLE short course](#), June 3–5 2020, UC Berkeley (online workshop).

Outreach

- regular contributor to the [ISBA Bulletin](#) (2021)
- volunteer for *Venetonight – La notte dei ricercatori*, Padova, Italy. (2015 – 2017)
developed an online app interfacing with Twitter to track and display the event sentiment in real-time.
- volunteer for *StatistcAll*, Treviso, Italy. (2015)
statistical games and activities to show the magic of statistics to kids and adults.

Memberships

- International Society for Bayesian Analysis (ISBA); j-ISBA; New England Statistical Society (NESS).

WORK
EXPERIENCE

- *Statistical consultant* for Azienda ULSS n.4. Analysis of relapsing rate after being in rehab facilities.
- Jul. 2014 – Aug. 2015. *Marketing Analyst* at Generali Italia SPA (Mogliano Veneto)
Data quality and gathering. Customer satisfaction analysis: definition of the sampling plan, questionnaires analysis, text analysis of online survey opinions. Reporting.

PROGRAMMING &
LANGUAGES

Programming

- Programming languages: R (advanced) knowledge of nimble, Rcpp, plyr/dplyr, ggplot2, shiny libraries. C/C++, SQL (good), JAVA, Python, Julia (base).
- O.S.: Linux (Fedora/Ubuntu), macOS, Windows and relative software.
- Other: practice of \LaTeX , Sweave, Markdown for reporting, Git and Github as revision control system, Gimp, Illustrator, Lightroom for image processing.

Languages

- Italian: native; English: fluent; French: basic; Spanish: basic.