

Sara Lopez-Pintado, PhD

Associate Professor
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Date of preparation of CV:

January 15, 2021

Personal data:

Name: Sara Lopez-Pintado
Birthdate: May 2, 1975
Birthplace: Cordoba, Spain
Citizenship: Spain

Academic appointments and work experience:

- August, 2018 - present, Associate Professor, Department of Health Sciences, Bouvé College of Health Sciences, Northeastern University, Boston, MA, USA.
- January, 2010 - August, 2018, Assistant Professor of Biostatistics, Department of Biostatistics, Mailman School of Public Health, Columbia University, New York, USA.
- September, 2006 - present, Associate Professor ("Contratado doctor") of Statistics, Department of Economics and Quantitative Methods, University Pablo de Olavide, Seville, Spain, (currently on leave).
- September, 2007 - August, 2008, Visiting Professor, Department of Biostatistics, Columbia University, New York, USA.
- September, 2005 - August, 2006, Postdoc and Lecturer, Department of Statistics, Rutgers University, Piscataway, NJ, USA.
- September, 1998 - August, 2005, Instructor, Department of Statistics and Econometrics, University Carlos III, Madrid, Spain.

Education:

- September, 1998 - August, 2005, PhD (Statistics) July, 2005, Department of Statistics and Econometrics, University Carlos III, Madrid, Spain.
Thesis title: On the concept of depth for functional data
Sponsor: Juan Romo
Best thesis award in University Carlos III, Madrid, July, 2005
- October, 1994 - July, 1998, BA Mathematics (field Statistics), University of Seville, Spain.

Training:

- September, 2005 - August 2006, Postdoctoral training, Department of Statistics, Rutgers University, Piscataway, NJ, USA.

Gaps in work/training/education:

I had two children during the tenure track period: Daniel (born in September 2011) and Emma (born in May 2014). My tenure clock was stopped two times coinciding with the births of my children. I had an extended maternity leave for 5 months since December 2011 until April 2012.

Honors and Awards:

- Nominated on December 2017 as 'women in science spotlight' by a Columbia University student group of women scientists.
- Calderone Prize Award for Junior Faculty in 2013. Columbia University. New York.
- Best thesis award in 2005. University Carlos III, Madrid, Spain.

Professional Organizations and Societies:

- Referee for the following journals:
 - *Annals of Statistics*
 - *Biostatistics*
 - *International Journal of Biostatistics*
 - *Computational Statistics and Data Analysis*
 - *Journal of the American Statistical Association*
 - *Test*

- *Journal of Computational and Graphical Statistics*
 - *Computational Statistics*
 - *Technometrics*
 - *Stat*
 - *Journal of Nonparametric Statistics*
 - *Statistics and its Interface*
- Editorial Board:
 - Associate Editor of Journal of Nonparametric Statistics 2019- present
 - Associate Editor of Journal of Computational and Graphical Statistics 2018-present
 - Associate Editor of Computational Statistics and Data Analysis 2014-2015

Funding:

Current Research Support:

- August, 2019-July, 2021, NIH, 1R21MH120534-01, PI: **Lopez-Pintado**, "Nonparametric depth-based methods for analyzing high-dimensional data. Applications to biomedical research. " Award amount: 450387 dollars
- August, 2017 - July, 2021, NIH, Subaward from Columbia University "Advanced modeling techniques for brain imaging data with PET"; PI: Ogden, **subaward PI: Lopez-Pintado**, 16% effort. Award amount: 242,771.00 dollars

Past Support:

- July, 2017 - May, 2020, Research member, NIH, "Health and Psychosocial need: The asenze study of risk and protection in adolescence"; PI: Davidson, **Statistician: Lopez-Pintado**, 20% effort.
- July, 2017 - June, 2022, Research member, NIH, "Targeting epigenetic pathways for treating resistant BCCsin Gorlin syndrome"; PI: Bickers, **Statistician: Lopez-Pintado**, 6% effort.
- April, 2018 - March, 2023, Research member, NIH, "Understanding the interplay of HIV and successful aging of a New York vulnerable population of women living with HIV/AIDS, 50 and older "; PI: Odlum, **Statistician: Lopez-Pintado**, 6% effort.

- April, 2017 - August, 2018, Research member, NIH, "Translating an Evidence-based Urban Asthma Program for Rural Adolescent: Testing Its Effectiveness and Cost-effectiveness and Understanding Implementation Factors"; PI: Bruzzese, **Statistician: Lopez-Pintado**, 15% effort.
- July, 2016 - August, 2018, Research member, NIH, "Clinical and Translational Science Award-Biostatistics Resource"; PI: Reilly, **Statistician: Lopez-Pintado**, 20% effort.
- February, 2017 - July, 2018, Research member, American Diabetes Association Postdoctoral Fellowship Award, "Rare variant discovery in severe early onset obesity driven by electronic health records"; PI: Thaker, **Statistician: Lopez-Pintado**, 10% effort.
- July, 2017 - July, 2018, Research member, Komen, "Immune regulation of triple negative breast cancer metastasis"; PI: Swarnali, **Statistician: Lopez-Pintado**, 4% effort.
- September, 2011 - August, 2016, Research member, NIH, "HIT for facilitating problem solving in diabetes management"; PI: Hripcsak, **Statistician: Lopez-Pintado**, 15% effort.
- July, 2013-July, 2015, Research member NIH, "A web-based intervention to prevent drug abuse among adolescents"; PI: Schwinn, **Statistician: Lopez-Pintado**, 14% effort.
- July, 2012 - July, 2015, Co-Investigator, NSF, "Statistical methods for screening individual childhood growth paths"; PI: Wei, **Co-investigator: Lopez-Pintado**, 19% effort.
- June, 2011 - June, 2016, Research member NIH, "Prenatal stress: The epigenetic basis of maternal and perinatal effects"; PI: Monk, **Statistician: Lopez-Pintado**, 5% effort.
- September, 2009 - June, 2016, Research member NIH, "The effects of Prenatal stress and poor nutrition on brain and cognition"; PI: Monk, **Statistician: Lopez-Pintado**, 5% effort.
- September, 2011 - May, 2014, Research member NIH, "Exercise and Inflammation: autonomic, affective, and cellular mechanisms"; PI: Sloan, **Statistician: Lopez-Pintado**, 10% effort.
- July, 2010 - July, 2011, Research member, NIAID, "The efficacy of written treatment plans in asthma"; PI: David Evans, Co-PI: Shears, **Statistician: Lopez-Pintado**, 10 % effort.
- May, 2010 - May, 2011, Research member, NIAID, "Risk factors for spread of staphylococcus Aureus in prisons"; PI: Lowy, Co-PI: Larson, **Statistician: Lopez-Pintado**, 10 % effort.

- May, 2010 - July, 2011, Research member, NIAID, "Modeling of S. Aureus transmission in Northern Manhattan"; PI: Lowy, **Statistician: Lopez-Pintado**, 10 % effort.
- May, 2010 - July, 2011, Research member, NIAID, "S. Aureus clones ST398 - an emerging community-based pathogen "; PI: Lowy, **Statistician: Lopez-Pintado**, 5 % effort.
- April, 2010 - April, 2012, Research member, Spanish Government, "Human Development and the labor market"; PI: Antonio Villar, **Statistician: Lopez-Pintado**, 20 % effort.
- December, 2007 - December, 2009, Research member, Spanish Government, "Development and welfare: Health, education and science"; PI: Antonio Villar, **Statistician: Lopez-Pintado**, 20 % effort.
- December, 2007 - December, 2009, Research member, Spanish Government, "Development and welfare: Health, education and Income"; PI: Antonio Villar, **Statistician: Lopez-Pintado**, 20 % effort.
- December, 2004 - December, 2007, Research member, Spanish Government, "Model selection for high-dimensional data in economics"; PI: Daniel Pena, **Statistician: Lopez-Pintado**, 20 % effort.
- January, 2006 - December, 2006, Research member, Spanish Government, "Nonparametric and computational intensive techniques in statistics"; PI: Juan Romo, **Statistician: Lopez-Pintado**, 20 % effort.
- January, 2005 - December, 2005 , Research member, Spanish Government, "Nonparametric techniques for economic data"; PI: Juan Romo, **Statistician: Lopez-Pintado**, 30 % effort.
- November, 2002 - October, 2005, Research member, Spanish Government, "Techniques for the statistical analysis of functional data in economics and business"; PI: Juan Romo, **Statistician: Lopez-Pintado**, 40 % effort.
- December, 2000 - December, 2003, Research member, Spanish Government, "Statistical analysis of large and complex data sets in economics and business"; PI: Daniel Pena, **Statistician: Lopez-Pintado**, 20 % effort.

Pending Support:

- July, 2019 - June, 2021, PI, NSF, "Collaborative Research: Halfspace Depth for Object and Functional Data, PI: **Lopez-Pintado**, effort: 1 month calendar year. Submitted December 2020.

Fellowships:

- November, 2013, Calderone Award for Junior Investigators, Columbia University, USA.
- August, 2012, Fellowship to participate as an invited speaker in ICORS12, Vermont, USA.
- September, 2007 - August, 2008, Columbia University, USA. Fellowship from Spanish Government "Jose Castillejo". Title of the project: "Nonparametric tools for the analysis of functional data".
- January, 2003, Fellowship to participate in Workshop on "Functional data analysis" in University of Florida, USA.
- July, 2001 - August, 2001, Cambridge University, UK. Fellowship for predoctoral students. Fundacion Carlos III. Title of the project: "Functional data analysis: a depth approach";

Educational contributions. Teaching experience and responsibilities:

- Teaching:
 - 2018-present, Foundations of Biostatistics, Undergraduate course in Health Sciences, Northeastern University.
 - 2018-2019, Introduction to Biostatistics in Public Health, Graduate course, Northeastern University.
 - 2015-2017, Biostatistical Analysis with SPSS. Master course. Columbia University.
 - 2015-2017, Statistical Analysis with SAS. Master course. Columbia University.
 - 2010 - 2017, Introduction to Biostatistics. Master Course. Columbia University.
 - 2006 - 2009, Biostatistics, undergraduate course for Biotechnology degree. University Pablo de Olavide.
 - 2006 - 2009, Statistics, undergraduate course for Computer Science Engineering degree, University Pablo de Olavide.
 - 2006 - 2009, Biostatistics, undergraduate course for Nutrition degree, University Pablo de Olavide.
 - 2006 - 2009, Statistics, graduate course for Ph.D in High efficiency in physical activities, University Pablo de Olavide.
 - 2007 - 2008, Statistics, undergraduate course for Environmental Science, University Pablo de Olavide.

- 2005 - 2006, Regression Methods, graduate course for Ph.D and Masters degree in Statistics, Rutgers University.
 - 2005 - 2006, Linear Regression Methods, undergraduate course for Statistics degree, Rutgers University.
 - 1999 - 2005, Statistics II, undergraduate course for Economic degree and Business degree, University Carlos III de Madrid.
 - 2003 - 2005, Statistics I, undergraduate course for Economic degree and Business degree, University Carlos III de Madrid.
 - 2003 - 2005, Statistics III, undergraduate course for Statistics degree, University Carlos III de Madrid.
 - 2003 - 2005, Multivariate Analysis, undergraduate course for Statistics degree, University Carlos III de Madrid.
 - 2001 - 2005, Statistics, graduate course for Statistics Ph.D, University Carlos III de Madrid.
 - 2002 - 2004, Design of experiments, undergraduate course for Statistics degree, University Carlos III de Madrid.
 - 2001 - 2003, Statistics, graduate course for degree in Master in Finance, University Carlos III de Madrid.
 - 2001 - 2003, Statistics, graduate course for degree in Master in Business Administration, University Carlos III de Madrid.
- Students supervision:
 - Ph.D. Student: Zonghui Yao since September 2019.
 - Advised Master students: Noah Levin, Yuning Wang, Yazhen Zheng in 2016, Adam King, Shengchao Hou, Yiyi Zhao, Lu Gan, Zhuyu Qiu and Leiyu Yue, 2017, Man Luo 2018.
 - Master program practicum trainees: Jasmine Williams, Linzi Chen (Spring 2016), Jiyeon Choi and Yuhe Xia (spring 2017), Yitong Feng, Kun Qian, Ranran Guo (2017-2018).
 - Research mentor of: PhD students Julia Wrobel, Zilan Choi and Master students, Kun Qian, Ranran Guo, Jiayi Ding and Yitong Feng in 2016- 2018.
 - Mentoring postdocs: Carlo Sguera, University Carlos III de Madrid, 2013 and Andrew Simpkin from Bristol University, 2015-2016.

- Mentoring students through the Fee for Services and CTSA (Clinical and Translational Science Awards) at Columbia University.
- Doctoral committee member for Wenfei Zhang (Ph.D. in Biostatistics at Columbia University, 2012), Catalina Diana Cumanasoiu (Ph.D. in Personal Health Informatics at Northeastern University, 2020) and Isabelle Pierre-Louis (Ph.D. in Population Health at Northeastern University).
- Mentor for the BEST program at Columbia University on 2010 and 2013.
- Teaching evaluations: Excellent evaluations in many of the courses I've taught, for example:
 - 2005-2006, Linear Regression (course 463), Rutgers University. Obtained 4.2 out of maximum of 5
 - 2005-2006, Regression Methods, Ph.D. course, Rutgers University. 4.3 out of 5
 - 2006-2007, Statistics, Technical Engineer in Computer Science, University Pablo de Olavide. 9.01 out of 10.
 - 2007-2008, Biostatistics, Biotechnology degree, University Pablo de Olavide. 7.9 out of 10.
 - 2012-2016, Introduction to Biostatistics, Master course P6103, Biostatistics, Columbia University.
Most of the years the evaluations were above 4.5 out of 5.
 - Summer 2015 and 2016, Statistical Analysis with SAS. Master course P6110, Biostatistics, Columbia University. 4.8 out of 5.
 - Spring 2016 and 2017, Biostatistical Analysis with SPSS, Master course P6107, Biostatistics, Columbia University. 4.8 out of 5.
 - Spring 2019, PHTH2210 Foundation of Biostatistics. Undergraduate course in Health Sciences. Excellent evaluations
 - Fall 2019 PHTH2210 Foundation of Biostatistics. Undergraduate course in Health Sciences. Good evaluations
 - Fall 2020 PHTH2210 Foundation of Biostatistics. Undergraduate course in Health Sciences. Excellent evaluations.

Publications:

1. Original, peer reviewed articles

1. Mishkin, AD, Schmajuk M, Reshef R, **Lopez-Pintado S**, Mapara MY, Shapiro PA. Standardized Semi-Structured Psychosocial Evaluation before Stem Cell Transplantation Predicts Delirium Post-Transplant. *Journal of the Academy of Consultation-Liaison Psychiatry*. Accepted. In print. December 2020.

Note: I made substantial contributions to the statistical analysis and interpretation of the data and I wrote the statistical sections of the manuscript.

2. **Lopez-Pintado S** and Kun Q. A depth-based global envelope test for comparing two groups of functions with applications to biomedical data. *Statistics in Medicine*. In print. November 2020. DOI: 10.1002/sim.8861

3. Sguera C and **Lopez-Pintado S**. A notion of depth for sparse functional data. *Test*. In print. September 2020, DOI: 10.1007/s11749-020-00734-y

4. Mishkin A, Shapiro P, Reshef R, **Lopez-Pintado S**, Mapara M (2019) Standardized Semi-structured Psychosocial Evaluation before Hematopoietic Stem Cell Transplantation Predicts Patient Adherence to Post-Transplant Regimen. *Biology of Blood and Marrow Transplantation*, 25 (11), 2222-2227. DOI: 10.1016/j.bbmt.2019.06.019.

Note: I made substantial contributions to the statistical analysis and interpretation of the data and I wrote the statistical sections of the manuscript.

5. Wang, G., Biswas, A. K., Ma, W., Kandpall, M., Cooker, C., Grandgenett, P. M., Hollingsworth, M. A., Jain, R., Tanji, K., **Lopez-Pintado, S.**, Borczuk, A., Hebert, D., Jenkitkasemwong, S., Hojyo, S., Davuluri, R. V., Knutson, M. D., Fukada, T., Acharyya, S. (2018). Metastatic cancers promote cachexia through ZIP14 upregulation in skeletal muscle. *Nature Medicine*, 24, 770-781. DOI: 10.1038/s41591-018-0054-2.

Note: This paper appeared in a very high profile journal. I made substantial contribution regarding analysis and interpretation of the data.

6. **Lopez-Pintado S**, Wrobel J (2017). Robust nonparametric tests for imaging data based on data depth. *Stat*, 6, 405-419. DOI: 10.1002/sta4.168

7. Wilson PT, Baiden F, Brooks JC, Morris MC, Giessler K, Punguyire D, Apio G, Agyeman-Ampromfi A, **Lopez-Pintado S**, Sylverken J, Nyarko-Jectey K, Tagbor H, Moresky RT (2017). Continuous positive airway pressure for children with undifferentiated respiratory distress in Ghana: an open-label, cluster, crossover trial. *Lancet Global Health* 5: 615-623.

Note: This paper appeared in a very high profile journal. I am sole statistician in this paper. I made substantial contribution regarding analysis and interpretation of the data. I wrote the statistical sections, produced the tables and revised the manuscript for intellectual content.

8. Cohen LP, Hummel SL, Maurer MS, **Lopez-Pintado S**, Wessler JD (2017). Salt taste recognition in a heart failure cohort. *Journal of Cardiac Failure* 23(7): 538-544.

Note: I made substantial contributions to the statistical analysis and interpretation of the data and I wrote the statistical sections of the manuscript.

9. Hecht EM, Liu, MZ, Prince MR, Jambawalikar S, Remotti HE, Weisberg SW, Garmon D, **Lopez-Pintado S**, Woo Y, Kluger MD, Chabot JA (2017). Can diffusion-weighted imaging serve as a biomarker of fibrosis in pancreatic adenocarcinoma? *Journal of Magnetic Resonance Imaging* 46(2): 393-402 PMID:28152252 DOI: 10.1002/jmri.25581.

Note: I made substantial contributions to the study design and writing of the paper. I performed all the statistical analysis of the data.

10. Stein GE, Zheng L, **Lopez-Pintado S**, Merriam JC (2017). Effect of iris hooks on surgically induced astigmatism in cataract surgery. *Clinical and Experimental Ophthalmology* 1:5. PMID: 28382663 DOI: 10.1111/ceo.12955

Note: I made substantial contributions to the statistical analysis and interpretation of the data, and I wrote the statistical sections of the manuscript.

11. Consul N, Guo X, Coker C, **Lopez-Pintado S**, Hibshoosh H, Zhao B, Kalinsky k, Acharyya S (2016). Monitoring metastasis and cachexia in a patient with breast cancer: A case study. *Clinical Medical Insights Oncology* 10: 83-94 PMID: 27660506 DOI: 10.4137/CMO.S40479

Note: I made substantial contributions to this paper with respect to the analysis and interpretation of the data and drafting the manuscript.

12. **Lopez-Pintado S** (2015). Discussion of "Multivariate functional outlier detection" (by Hubert et al.). *Statistical Methods and Applications* 2: 253-257.

13. Sujirakul T, Lin MK, Duong J, Wei Y, **Lopez-Pintado S**, Tsang SH (2015). Multi-modal imaging of central retinal disease progression in a 2-year mean follow-up of Retinitis Pigmentosa. *American Journal of Ophthalmology* 160(4):786-798. e4. PMID: 26164827 DOI: 10.1016/j.ajo.2015.06.032

Note: I made substantial contributions to this paper with respect to the data analysis and interpretation.

14. Felker GM, Mentz RJ, Teerlink JR, Voors AA, Pang PS, Ponikowski P, Greenberg BH, Filippatos G, Davison BA, Cotter G, Prescott, MF, Hua TA, **Lopez-Pintado S**, Severin

T, Metra M (2015). Serial high sensitivity cardiac troponin T measurement in acute heart failure: insights from the RELAX-AHF study. *European Journal of Heart Failure* 17(12):1262-1270. PMID: 26333655 DOI10.1002/ejhf.341

Note: I made substantial contribution to this paper with respect to data analysis and interpretation.

15. **Lopez-Pintado S**, Sun Y, Lin JK, Genton MG (2014). Simplicial Band depth for multivariate functional data. *Advances in Data analysis and Classification* 8: 321-338.

16. Alonso A, Casado D, **Lopez-Pintado S**, Romo J (2014). Functional data based methods for time series classification. *Journal of Classification* 31: 325-350.

Note: I made substantial contribution to this paper with respect to the proposed robust classification method, the analysis and interpretation of the data, and the drafting of the manuscript.

17. Torrente A, **Lopez-Pintado S** and Romo J (2013). DepthTools: An R package for robust analysis of gene expression data. *BMC Bioinformatics* 14:237.PMC3750619 DOI: 10.1186/1471-2105-14-237

Note: I made substantial contribution to this paper with respect to the conception, the development of the methodology used and the implementation.

18. Spicer J, Werner E, Zhao Y, Choi CW, **Lopez-Pintado, S**, Feng T, Altemus M, Gyamfi C, Monk C (2013). Ambulatory assessments of psychological and peripheral stress-markers predict birth outcomes in teen pregnancy. *Journal of Psychosomatic Research* 75(4): 305-313.

Note: I made substantial contribution to this paper with respect to the study design, data analysis and interpretation.

19. Lindgren M, Alex C, Shapiro PA, McKingley PS, Brondolo EN, Myers MM, Choui CJ, **Lopez-Pintado S**, Sloan RP (2013). Effects of aerobic conditioning on cardiovascular sympathetic response to and recovery from challenge. *Psychophysiology* 50: 963-973.

Note: I made substantial contribution to this paper with respect to the design of the study, data analysis and interpretation.

20. **Lopez-Pintado S**, McKeague I (2013). Recovering gradients from sparsely observed functional data. *Biometrics* 69(2):396-404.

21. Cornell AG, Chilrud SN, Mellins RB, Acosta, LM, Miller RL, Quinn JW, Yan B, Divjan A, Olmedo OE, **Lopez-Pintado, S**, Kinney, PL, Perera, FP, Jacobson JS, Goldstein IF, Rundle AG, Perzanowski MS (2012). Domestic airborne black carbon and exhaled nitric

oxide in children in NYC. *Journal of Exposure Science and Environmental Epidemiology* 22(3): 258-266.

Note: I made substantial contributions to this paper with respect to its conception and design of the study.

22. Olmedo O, Acosta L, Goldstein IF, Divjan A, Rundle A, Chew GL, Mellins RB, Hoepner L, Andrews H, **Lopez-Pintado S**, Quinn JW, Perera FP, Miller RL, Jacobson JS, Perzanowski MS (2011). Neighborhood differences in cockroach, mouse and dust mite allergen exposure and sensitization in NYC. *Journal of Allergy and Clinical Immunology* 128(2): 284-292.

Note: I made substantial contributions to this paper with respect to its conception and revising the manuscript for intellectual content.

23. **Lopez-Pintado S**, Wei Y (2011). Depth for sparse functional data. *Recent Advances in Functional Data and Related Topics*, ed. F. Ferraty, Berlin: Springer 209-212.

24. McKeague I, **Lopez-Pintado S**, Hallin M, Siman R (2011). Analyzing growth trajectories. *Journal of Developmental Origins of Health and Disease* 2: 322-329.

Note: I made substantial contributions to this paper with respect to its conception, analysis and interpretation of the data, and revising the manuscript for intellectual content.

25. **Lopez-Pintado S**, Romo J (2010). A half-region depth for functional data. *Computational Statistics and Data Analysis* 55: 1679-1695.

26. **Lopez-Pintado S**, Romo J, Torrente A (2010). Robust depth-based tools for the analysis of gene expression data. *Biostatistics* 11(2): 254-264.

27. **Lopez-Pintado S**, Romo J (2009). On the concept of depth for functional data. *Journal of the American Statistical Association* 104: 486-503.

Note: This paper has been cited more than 300 times

28. **Lopez-Pintado S**, Romo J (2007). Depth-based inference for functional data. *Computational Statistics and Data Analysis* 51: 4957-4968.

29. **Lopez-Pintado S**, Jornsten R (2007). Functional Analysis via extensions of the band depth. *IMS Lecture Notes-Monograph Series. Institute of Mathematical Statistics*, 54: 103-119.

30. **Lopez-Pintado S**, Romo J (2006). Depth-based classification for functional data. *DIMACS Series in Discrete Mathematics and Theoretical Computer Science. Data Depth: Robust Multivariate Analysis, Computational Geometry and Applications. American Mathematical Society* 72: 103-120.

2. Working papers:

1. Dai, X and **Lopez-Pintado S** (2020). Tukey's depth for object data. Working paper.
2. Yao, Z, Lopez-Pintado D and **Lopez-Pintado S** (2020). Uncertainty analysis of contagious processes based on a functional approach. Working paper.
3. Khadegi A, Qian K, McDonald M, Weaver B, Christensen S, **Lopez-Pintado S**, Hirschhorn J and Thaker, V (2020). Cardiometabolic risk factors with increasing severity of obesity. Working paper.
4. **Lopez-Pintado S**, Luo M, Ogden T (2020). Outlier detection methods for image data. Working paper.
5. Luo M, **Lopez-Pintado S**, Ogden T (2020). Measuring depth with noisy functional data. Working paper.

3. Books

1. Porras Sánchez M, Aquino Llinares N, Martinez L, **Lopez-Pintado S** et al. (2008). Hábitos y actitudes de los sevillanos en edad escolar ante el deporte. Editorial: Instituto Municipal de Deportes, Ayuntamiento de Sevilla. ISBN: 978-84-96098-37-4.
2. Porras Sánchez M, Aquino Llinares N, Martinez L, **Lopez-Pintado S** et al. (2008). Hábitos y actitudes de los sevillanos ante el deporte. Editorial: Instituto Municipal de Deportes, Ayuntamiento de Sevilla. ISBN: 978-84-92417-01-8.
3. Porras Sánchez M, Aquino Llinares N, Martinez L, **Lopez-Pintado S** et al. (2007). Hábitos y actitudes de los sevillanos mayores ante el deporte. Editorial: Instituto Municipal de Deportes, Ayuntamiento de Sevilla. ISBN: 84-96098-73-7.

Invited and Peer-Selected Presentations

- Invited Colloquia

- March 2018, Robust nonparametric functional data analysis based on depth, Department of Statistics, Hunter College of CUNY, New York, USA.
- February 2018, The concept of functional depth and its applications in health sciences, Department of Health Sciences, Northeastern University.
- March 2015, Ranking multivariate functions. Department of Statistics, Florida State University, Tallahassee, Florida, USA.

- April, 2011, A half-region depth for functional data. Department of Economics and Quantitative Methods, University Pablo de Olavide, Seville, Spain.
 - April 2009, Robust analysis of functional data. Department of Biostatistics, Columbia University, New York, USA.
 - October 2007, Nonparametric tools for analyzing curves. Department of Economics and Quantitative Methods. Universidad Pablo de Olavide, Seville, Spain.
 - April 2007, Analyzing shape of trajectories. Department of Biostatistics, Columbia University, New York, USA.
 - November 2005, Statistical inference for functions: a depth approach. Department of Statistics, Rutgers University, NJ, USA
 - May 2004, Statistical inference for functions: a depth approach (with J. Romo). Department of Computer Science. Tufts University, MA, USA.
 - February 2000, Inference for functional data. Department of Statistics. Universidad Carlos III de Madrid. Spain.
- Invited Conference Talks
 - December 2020, invited speaker, A depth-based global envelope test for comparing two groups of functions with applications to biomedical data, CMStatistics 2020, London(online).
 - December 2019, invited speaker, Depth analysis of sparse functional data, CMStatistics 2019, London, UK.
 - December 2018, invited speaker, Nonparametric depth based methods for analyzing health data, CMStatistics 2018, Pisa, Italy.
 - July 2018, invited speaker, Robust Nonparametric Tests for Imaging Data Based on Data Depth, JSM 2018, Vancouver Convention Centre, Canada, Conference, International, USA (with Wrobel, J.).
 - December 2017, invited speaker, Depth-based methods for sparse and complex functional data, CMStatistics 2017, London, UK.
 - August 2017, invited speaker, Depth for sparse functional data, JSM 2017, Baltimore, USA.
 - December 2016, invited speaker, Non-parametric tests for imaging data based on a Multivariate Volume Depth, CMStatistics 2016, Seville, Spain.

- June 2016, invited speaker, Robust nonparametric statistics for imaging data. ISNPS 2016, Avignon, France.
 - December 2015, invited speaker, CMStatistics 2015, London, UK.
 - August 2012, invited speaker, ICORS12 (International Conference on Robust Statistics), Vermont, USA.
 - December 2010, invited speaker, ICSA, Guangzhou, China.
 - December 2010, invited speaker, ERCIM2010, London, England.
 - September 2009, invited speaker, XII Conferencia Espanola de Biometria, Cadiz, Spain.
 - June 2009, invited speaker, ICORS09, Parma, Italy.
 - June 2008, invited speaker, ERCIM08, Neuchatel, Switzerland.
 - September 2007, invited speaker, ICORS07 (International Conference on Robust Statistics 07), Buenos Aires, Argentina.
 - May 2005, invited speaker, X Conferencia Espanola de Biometria. Oviedo, Spain.
 - May 2003, invited speaker, DIMACS Workshop on Data Depth: Robust Multivariate Analysis and Computational Geometry and Applications. Rutgers University, NJ, USA.
 - January 2003, invited participant (poster presentation), 2003 Winter Workshop: an IMS Mini-Meeting on functional Data Analysis. University of Florida, Gainesville, USA.
- Contributed Conference Talks and Posters
 - November 15, 2018, Dissecting the SIPAT: Comparing Domains and Individual Items with Adherence Outcome., Poster, Academy of Consultation-Liaison, Orlando, Florida, joint work with Mishkin, A., Reshef, R., Shapiro, P., Mapara, M.
 - June 2018, SIPAT Scores Predict Delirium in Hematopoietic Stem Cell Transplant Recipients., Poster, 8th annual American Delirium Society Meeting, San Francisco, California, Joint work with Mishkin, A., Schamajuk, M., Reshef, R., Shapiro, P., Mapara, M.
 - August 2015, Robust depth-based statistics for complex data, JSM, Seattle, USA.
 - June 2008, Principal components for gradients of sparse functional data. ERCIM08, Neuchatel, Switzerland.

- October 2005, A depth based inference for functional data. World Conference on Computational Statistics and Data Analysis. Limassol, Cyprus.
- October 2005, Tools for analyzing functional data. 28 Congreso Nacional de Estadística e Investigación Operativa. Cadiz, Spain.
- Julio 2005, Functional data: a depth approach. XXV European Meeting of Statisticians. Oslo.
- July 2004, Functional observations and depth. 6th BS/IMSC Meeting. Barcelona. Spain.
- May 2004, Depth-based classification for microarray data. Conference on Analysis of Genomic Data. Harvard University. Boston, MA.
- Julio 2003, A functional depth analysis for environmental data. The ISI International Conference on Environmental Statistics and Health. Santiago de Compostela, Spain.
- April 2003, Estadísticos de orden para datos funcionales. 27 Congreso Nacional de Estadística e Investigación Operativa. Lerida, Spain.
- August 2002, On the concept of depth for functional data. 2002 Joint Statistical Meetings. New York.

Other merits:

- Organized and chaired a session (with title: Recent developments on robust functional data analysis) in the conference CMStatistics 2020, London, (online) .
- Member of the organizing committee of CMStatistics 2019 and 2020, London, UK.
- Organized and chaired a session (with title: Recent developments on functional data analysis) in the conference CMStatistics 2019, London, UK.
- Organized and chaired a session (with title: Data depth and high-dimensional data) in the conference CMStatistics 2018, Pisa, Italy.
- My service activities for the Department of Biostatistics at Columbia University were: member of the Master Admission Committee, member of Qualifying Exam Committee, member of Recruitment Committee and organizer of the seminars in the Department during the spring semester of 2016.

- Senior consultant since 2015 in Clinical and Translational Research Award at Irving Institute at Columbia University and worked as a consulting for Fee for service in the Department of Biostatistics.
- NSF grant submitted in 2014 received excellent scores and a recommendation to fund if possible. Due to the budget cut it was not funded in the end.
- March 2011: Invitation with financial support to participate in the Workshop: Level sets and depth contours in high-dimensional data. Oberwolfach, Germany.
- Habilitation to Assistant Profess ("Ayudante Doctor") by the Andalusia Evaluation Agency since January 2010.
- Habilitation to Associate Professor ("Contratado Doctor") by the Andalusia Evaluation Agency since January 2012.
- Lopez-Pintado and Romo (2009) "On the concept of depth for functional data" published in JASA is a highly cited paper (more than 300 citations). It is considered to be a seminal contribution to the field of robust functional data analysis.
- June 1998: Award with predoctoral fellowship to participate in the Master Program in the Department of Mathematics, Kaiserslautern, Germany.