

# Julia Wrobel

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## EDUCATION

**Columbia University Mailman School of Public Health**, New York, NY, USA

Doctor of Philosophy (Ph.D.) in Biostatistics Sep 2015 – Present  
• Coursework and exploratory research in progress

Master of Science (M.S.) in Biostatistics Sep 2013 – May 2015  
• Practicum: Associations and Patterns in Ambulatory Blood Pressure  
• Advisor: Professor Jeff Goldsmith

**Swarthmore College**, Swarthmore, Pennsylvania, USA

Bachelor of Arts (B.A.) in Chemistry Sep 2006 – May 2010

## ACADEMIC HONORS & AWARDS

Certificate of Distinction, Columbia Department of Biostatistics May 2015  
For outstanding research by a Master's student.

Sigma Xi Scientific Research Society May 2010

## RESEARCH EXPERIENCE

**Department of Biostatistics**, Columbia University

Research Assistant Jun 2014 – Present  
• Supervisor: Assistant Professor Jeff Goldsmith  
• Research areas: Functional data analysis, interactive data visualization, ambulatory blood pressure.

**Department of Biostatistics**, Columbia University

Research Assistant Feb 2016 – Present  
• Supervisor: Assistant Professor Sara Lopez-Pintado  
• Research areas: Multivariate band depth for functional data, imaging statistics, nonparametric hypothesis tests

## WORK EXPERIENCE

**Statistical Analysis Center for Clinical Trials**, Columbia University

Data Analyst & SAS Programmer May 2014 – Aug 2015  
• Supervisor: Professor Seamus Thompson  
• Statistical analysis of Phase III clinical trial data for Novartis Pharmaceuticals  
• Characterized incidence of hypotension and built models to predict its association with health outcomes  
• Created similar deliverables for atrial fibrillation, renal function, and markers of inflammation  
• Developed SAS programming expertise, including nested macros, proc report, and model building

**Department of Immunology and Rheumatology**, Children's Hospital of Philadelphia

Immunology Research Scientist Apr 2011 – Jul 2013  
• Principal Investigator: Dr. Edward Behrens  
• Research areas: Macrophage Activation Syndrome, cytokine storm, flow cytometry, adoptive T-cell transfer

## PUBLICATIONS

### JOURNALS

- 4) S. Lopez-Pintado and J. Wrobel, "Robust Nonparametric Tests for Imaging Data Based on a Multivariate Volume Depth", submitted to *Journal of Computational and Graphical Statistics*, Feb 2017.
- 3) J. Wrobel, SY. Park, AM. Staicu, J. Goldsmith, "Interactive graphics for functional data analyses", *Stat*, vol. 5, no. 1, pp. 108–118, **Selected as an exemplar paper of Stat** to be showcased at the 2017 Joint Statistical Meetings.
- 2) J. Kim, J. Wrobel, et al., "State Medical marijuana laws and the prevalence of opioids detected among fatally injured drivers?", *American Journal of Public Health*, Accepted Aug 2016.
- 1) S. Canna, J. Wrobel et al., "Interferon- $\gamma$  mediates anemia but is dispensable for fulminant toll-Like receptor 9-induced macrophage activation syndrome and hemophagocytosis," *Arthritis and Rheumatism*, vol. 65, no. 7, pp. 1764–1775, Jul 2013.

### SOFTWARE

- 2) J. Wrobel and J. Goldsmith, "refund.shiny: interactive plotting for functional data analysis," *R package available on CRAN* Sep 2015. **Downloaded 3285 times as of 2/3/2017!**

- 1) J. Wrobel, “mfpcas.sc(): multilevel functional principal components analysis by smoothed covariance,” *function in refund R package available on CRAN* Aug 2015.

## TALKS

- 1) J. Wrobel, “Interactive graphics for functional data analyses,” *2016 Joint Statistical Meetings*, Chicago, IL, USA, Aug 2016.

## POSTER PRESENTATIONS

- 2) J. Wrobel, “Can we use statistics to compare pictures? An application to brain imaging data,” *2016 Women in Science at Columbia (WISC) Symposium*, New York, NY, USA, Apr 2016.
- 1) J. Wrobel, “Associations and Patterns in Ambulatory Blood Pressure,” *Columbia University Department of Biostatistics 75th Anniversary Gala*, New York, NY, USA, Apr 2015.

## LEADERSHIP & SERVICE

- Biostatistics Student Research Working Group**, Columbia University  
 Founder and Organizer Dec 2015 – Present
- Created monthly student seminar series to facilitate research collaborations, promote idea-sharing, and hone presentation skills
- Columbia Biostatistics Computing Club**, Columbia University  
 Founder and Co-Organizer Dec 2016 – Present
- Lead tutorials on computational methods often encountered in biostatistics research
  - Built CBCC website using GitHub pages
- Biostatistics Student Cohort Representative**, Columbia University  
 Doctoral Student Leader Aug 2015 – Present
- Swarthmore Voter Registration Coalition**, Swarthmore College  
 Leader and Co-founder Aug 2008 – May 2010
- Founded student organization to register voters and encourage civic engagement in underrepresented blocs

## SKILLS

R, Rcpp, git, SAS,  $\text{\LaTeX}$ , SPSS, Excel

## TEACHING EXPERIENCE

- Categorical Data Analysis**, Columbia University Department of Biostatistics  
 Lead Teaching Assistant Jan 2017 – Present
- Statistical Inference**, Columbia University Department of Biostatistics  
 Teaching Assistant Jan 2016 – May 2016
- Randomized Clinical Trials II**, Columbia University Department of Biostatistics  
 Teaching Assistant Aug 2015 – Dec 2015
- Organic Chemistry I**, Swarthmore College Department of Chemistry  
 Laboratory Assistant Sep 2008 – May 2010