

# AGUSTIN CALATRONI

Principal statistician in NIAID-funded Statistical Coordinating Center at Rho since 2005, as such I design, implement, analyze and report on multicenter randomized, observational, and mechanistic clinical trial studies related to asthma, allergy, and immunology. Furthermore, I provide internal and industry sponsors statistical consulting on complex and novel statistical methodologies.



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## EDUCATION

2002   2000	<b>M.S., Master of Statistics</b> North Carolina State University Mu Sigma Rho Honors Society	📍 Raleigh, NC
1996   1995	<b>M.A., Masters en Sciences économiques</b> Université Paris 1 Panthéon-Sorbonne Summa cum laude	📍 Paris, France
1995   1991	<b>B.S., Maîtrise en Sciences économiques</b> Université d'Aix-Marseille III Summa cum laude	📍 Aix-en-Provence, France
1991   1988	<b>Baccalauréat en Sciences économiques</b> Lycée Franco-Argentin Jean Mermoz	📍 Buenos Aires, Argentina

## INDUSTRY POSITIONS

Current   2005	<b>Principal Statistical Scientist I</b> Rho, Inc. (2017) Principal Statistical Scientist I (2011) Statistical Scientist (2005) Senior Biostatistician	📍 Durham, NC
<ul style="list-style-type: none"><li>• Lead statistician on a broad-based number of projects including multiple protocol programs, providing input into study design, sample size calculations, and written statistical analysis plans.</li><li>• Leads the development and review of statistical analysis, including tables, listings, and figures with continuous interactions among clients and regulatory agencies.</li><li>• Serve as a lead consultant on both internally and externally high complexity statistical projects and statistical programming modeling with either SAS or R.</li><li>• Expertise in multiple imputation, analysis of count data, linear mixed models, nonlinear mixed model and generalized (additive) mixed models.</li></ul>		

## CONTACT

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[\(📞\) \(858\) 754-8842](tel:(858)754-8842)

## FLUENT LANGUAGES

	Spanish
	French
	English

## SOFTWARE SKILLS

R & RStudio  
SAS  
h2oai machine learning

2005  
|  
2002

### ● Statistician

Center for Human Growth and Development  
University of Michigan

📍 Ann Arbor, MI

- Statistical reports and displays for client projects, for presentation at meetings or conferences, and for publication in regulatory documents or professional journals.

2002  
|  
1996

### ● Computer Support Specialist

SMT (SportsMEDIA Technology Corp)

📍 Durham, NC

- Data & Statistical Integration TV Graphics for auto racing
- 🎉 2000 EMMY winner *ESPN Seedworld NASCAR coverage*

2000  
|  
1998

### ● Applied Economist

AMP Incorporated

📍 Harrisburg, PA

- Worked on the creation of a more accurate ways to forecast within the organization to maintain a methodical sales forecasting process by applying direct input from sales & marketing.

## ✉ TEACHING & MENTORING

2020  
|  
2011

### ● Industry Mentor

The Statistical and Applied Mathematical Sciences Institute (SAMSI)  
Industrial Math/Stat Modeling Workshop (IMSM)

📍 Raleigh, NC

- Objective is to expose graduate students in mathematics, engineering, and statistics to challenging and exciting real-world problems arising in industrial and government laboratory research.
- [Rho Participates in Innovative Graduate Student Workshop for the 8th Consecutive Time!](#)
- [VIDEOT 2019 Continuous glucose monitors \(CGMs\) w/ Functional Data Analysis](#)

💡 I have been fortunate to have had exceptional mentorship in my profession. Mentoring is a critical element to nurture and grow a great collaborative problem-solving team. This cultivates an environment of continued education, growth, and leadership development. I had mentor members of our group on project guidance and statistical advice.

2017

### ● AAAAI NHLBI & NIAID Invited Course Faculty

Clinical Trial Designs to Predict Asthma Exacerbations

📍 Atlanta, GA

- Discuss clinical trial designs that have identified predictive biomarkers for asthma medications
- Discuss methods to identify prognostic predictors for asthma exacerbations with the goal of developing strategies to prevent them and to define the potential challenges of interpreting data for subpopulations in a clinical trial
- Identify procedures, such as the microbiome analysis, that may vary in findings based on the age of the study participant

2015	<ul style="list-style-type: none"> <li>● <b>AstraZeneca-Sanger Drug Combination Prediction DREAM Challenge</b> Advancing Cancer Treatment with Artificial Intelligence <span style="color: #800000;">📍 Workshop</span> <ul style="list-style-type: none"> <li>• Open innovation competition hosted by Sage Bionetworks using crowdsourcing to identify new solutions to pressing pharmaceutical research and development challenges</li> <li>• Stacking models approach combining several machine learning techniques into one predictive model in order to decrease the variance (bagging), bias (boosting) and improve the predictive accuracy</li> <li>•  Rho Innovation Award</li> </ul> </li> </ul>
2014	<ul style="list-style-type: none"> <li>● <b>AAAAI/NIEHS Invited Course Faculty</b> NHANES 2005-2006: Getting to Grips with the Big Data <span style="color: #800000;">📍 San Diego, CA</span> <ul style="list-style-type: none"> <li>• Interpret the role that allergen/endotoxin exposures and allergic sensitization play in allergic diseases</li> <li>• Apply new, standardized methods in indoor allergen assessment</li> <li>• Review strategic objectives of NHANES and the allergy component</li> </ul> </li> </ul>
2013	<ul style="list-style-type: none"> <li>●  <b>Rho Wide Corporate Training</b> Visualizing Multivariate Data: Turning Information Into Understanding <span style="color: #800000;">📍 Chapel Hill, NC</span> <ul style="list-style-type: none"> <li>•  Rho Presidential Award for <i>Outstanding Innovation for statistical visualizations</i></li> </ul> </li> </ul>

## ↗ SELECTED DATA SCIENCE WRITING

Current   2005	<ul style="list-style-type: none"> <li>● <b>Rho Graphics</b> Our data science team focuses on modernizing clinical trials using interactive statistical graphics. Almost everything we do is open source, so you can see our code on GitHub or use this site to explore our publications, interactive visualizations, data, and blog. <span style="color: #800000;">📍 Website</span></li> </ul>
2018	<ul style="list-style-type: none"> <li>● <b>Visualization of The Museum of Modern Art (MoMA) Collection using Trelliscope</b> Scalable, flexible, interactive approach to visualizing data <span style="color: #800000;">📍 GitHub</span> <span style="color: #800000;">📍 Blog</span></li> </ul>
2018	<ul style="list-style-type: none"> <li>● <b>The Future, Today: Artificial Intelligence Applications for Clinical Research</b> With Our Powers Combined: Using Predictive Analytics for Boosting Model Accuracy and Future Applications <span style="color: #800000;">📍 Blog</span></li> </ul>
2017	<ul style="list-style-type: none"> <li>● <b>CRANsearcher</b>  RStudio Addin for Searching Packages in CRAN Database Based on Keywords <span style="color: #800000;">📍 GitHub</span> <span style="color: #800000;">📍 R Package</span></li> </ul>

📊 Our industry is driven by data. Every phase of our trials requires us to collect, monitor, analyze, and report data. While each of these steps is equally important, reporting is arguably the most impactful step. When we report data, we give them to key decision-makers and invite them to interpret the data and draw conclusions. As part of the Center for Applied Data Visualization I been researching and promoting the best practices and tools for visualizing and reporting data. As such, I developed dozens of novel graphics for both static reports and interactive web-based use. [Examples for data visualization and statistical graphics](#)

2008	● <b>Estimation of the Correlation Coefficient with Left Censored and Repeated Measures Data</b> Joint Statistical Meetings	📍 Denver, CO
2007	● <b>Generating Automated Dataset Summaries</b> Society for Clinical Trials Annual Meeting	📍 Montreal, QC

## ☰ SELECTED PUBLICATIONS

- 2020 ● **Serum IL-6: A biomarker in childhood asthma?**  
Journal of Allergy and Clinical Immunology
- 2019 ● **Distinct nasal airway bacterial microbiotas differentially relate to exacerbation in pediatric patients with asthma**  
Journal of Allergy and Clinical Immunology
- 2019 ● **The nonlesional skin surface distinguishes atopic dermatitis with food allergy as a unique endotype**  
Science Translational Medicine
- 2019 ● **Longitudinal Phenotypes of Respiratory Health in a High-Risk Urban Birth Cohort**  
American Journal of Respiratory and Critical Care Medicine
- 2019 ● **Cockroach allergen component analysis of children with or without asthma and rhinitis in an inner-city birth cohort**  
Journal of Allergy and Clinical Immunology
- 2019 ● **Early decrease in basophil sensitivity to Ara h 2 precedes sustained unresponsiveness after peanut oral immunotherapy**  
Journal of Allergy and Clinical Immunology
  - 🎥 The Application of Data Driven Approaches to Flow Cytometric Analysis of Basophil Activation Testing
- 2019 ● **The association of allergic sensitization patterns in early childhood with disease manifestations and immunological reactivity at 10 years of age**  
Clinical & Experimental Allergy
- 2019 ● **A computerized decision support tool to implement asthma guidelines for children and adolescents**  
The Journal of Allergy and Clinical Immunology: In Practice
  - 📈 Interactive figure lets users explore the data
- 2019 ● **Building Bridges for Asthma Care: Reducing school absence for inner-city children with health disparities**  
Journal of Allergy and Clinical Immunology
- 2018 ● **Early-life home environment and risk of asthma among inner-city children**  
Journal of Allergy and Clinical Immunology

📝 Together as a team of investigators we are motivated by discovery and results to improve health, extend life, and enhance quality of life. We achieve this by helping our federal and academic clients run clinical trials and epidemiological studies, while also guiding them through complex and novel statistical methodology in manuscript writing, and presentations.

As a Principal Statistician for the Statistical and Clinical Coordinating Center at the Inner-City Asthma Consortium (ICAC), the Atopic Dermatitis Research Network (ADRN) and Immune Tolerance Network (ITN), I provide statistical expertise as well as scientific leadership in developing clinical trials to study asthma interventions, allergen immunotherapy and environmental exposures and their roles in allergy and asthma; translational research as well as the analysis of big omics-data.

- 2018
  - **Sensitization and Exposure to Pets: The Effect on Asthma Morbidity in the US Population**  
Journal of Allergy and Clinical Immunology: In Practice
- 2018
  - **Bedroom allergen exposures in US households**  
Journal of Allergy and Clinical Immunology
- 2017
  - **Effects of Omalizumab on Rhinovirus Infections, Illnesses, and Exacerbations of Asthma**  
American Journal of Respiratory and Critical Care Medicine
  - **Graphic depiction of bioinformatics data**  
Journal of Allergy and Clinical Immunology
    - ⓘ Source code, data and results for all figures
  - **Can we predict fall asthma exacerbations? Validation of the seasonal asthma exacerbation index**  
Journal of Allergy and Clinical Immunology
  - **Minimally important differences and risk levels for the Composite Asthma Severity Index**  
Journal of Allergy and Clinical Immunology
    - ⓘ Simulation material for the Composite Asthma Severity Index (CASI)
- 2015
  - **Preseasonal treatment with either omalizumab or an inhaled corticosteroid boost to prevent fall asthma exacerbations**  
Journal of Allergy and Clinical Immunology
  - **DNA methylation and childhood asthma in the inner city**  
Journal of Allergy and Clinical Immunology
- 2011
  - **Randomized trial of omalizumab (anti-IgE) for asthma in inner-city children**  
New England Journal of Medicine
    - ⓘ GAMMapp : a Shiny app for exploring longitudinal and seasonal data