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**Conditions Treated:**

**Research Areas:**

- *CT Scan Image Analysis*
- *RNA-Seq*
- *GWAS*
- *Image Analysis*
- *Spatial Point Processes*
- *Bayesian Hierarchical Models*
- *Generalized Linear Mixed Models*

**Programs & Services:**

- *Department of Immunology and Genomic Medicine*
- *Center for Genes, Environment and Health*

Dr. Vestal has expertise in the analysis of genetic and genomic data, quantitative image analysis with applications in computed tomography and emphysema, Bayesian hierarchical modeling, and computational statistics.

Using advanced statistical modeling, Dr. Vestal has created an AI image analysis technology to provide quantitative measurements of Emphysema in Computed Tomography scans. The Emphysema PROfiler™ technology has been supported by Microsoft to provide analysis for collaborators in a secure cloud environment.

**Education**

- 2012 - 2017 University of Colorado Denver, Denver, CO, PhD in Biostatistics
- 2010 - 2012 California State University Fullerton, Fullerton, CA, MA in Applied Mathematics
- 2006 - 2009 Vanguard University, Costa Mesa, CA, BS in Mathematics

**Affiliations with the University of Colorado Denver**

Clinical Assistant Professor, Department of Biostatistics and Informatics, Colorado School of Public Health, University of Colorado Denver

**Professional Memberships**

ASA, IBS, ASHG

**Publications**

Vestal BE, Carlson NE, Estépar RS, Fingerlin T, Ghosh D, Kechris K, Lynch D. Using a spatial point process framework to characterize lung computed tomography scans. *Spatial Statistics*. 2019 Mar 1;29:243-67.

Vestal B, Russell P, Radcliffe RA, Bemis L, Saba LM, Kechris K. miRNA-regulated transcription associated with mouse strains predisposed to hypnotic effects of ethanol. *Brain Behav.* 2018;e00989

Rudra P, Shi WJ, Vestal B, Russell PH, Odell A, Dowell RD, Radcliffe RA, Saba LM, Kechris K. Model based heritability scores for high-throughput sequencing data. *BMC bioinformatics.* 2017 Dec;18(1):143.

Rudra P, Shi WJ, Russell P, Vestal B, Tabakoff B, Hoffman P, Kechris K, Saba L. Predictive modeling of miRNA-mediated predisposition to alcohol-related phenotypes in mouse. *BMC genomics.* 2018 Dec;19(1):639.

Russell PH, Vestal B, Shi W, Rudra PD, Dowell R, Radcliffe R, Saba L, Kechris K. miR-MaGiC improves quantification accuracy for small RNA-seq. *BMC research notes.* 2018 Dec;11(1):296.

#### **Doctor's Contact Information**

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#### **Locations**

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