Kerry J. Martin, Ph.D.

Researcher, Physiologist, & Data Scientist

Email | LinkedIn | Website

Chapel Hill, NC

Experience

Biostrap USA

Director of Science (Mar 2022 - Present)

- Design and execute studies to collect data and create new products using ML & statistics.
  - Examples: Menstrual cycle detection using *only* biometrics; heart failure risk and related biometric development; postural transition detection using IMU data; COVID detection.
- Development of statistical tools, dashboards, and data pipelines to facilitate Biostrap Labs autonomy.
- Facilitate sales and partnerships with scientifically-oriented clients, ensuring scientific and technical needs are met.
- Investigate human-product interaction to improve data collection and future design.

Research Physiologist (Apr 2021 - Mar 2022)

- Directing and executing research operations for Biostrap Labs, the contract research arm
  - 12 contracted studies, including Fortune 500 companies.
- Investigating novel biometric behavior at the population-level.
- Investigating population-wide data insights for product development, marketing, & scientific research.

University of North Carolina at Chapel Hill & Greensboro

Research & Teaching Assistant (Aug 2014 - May 2021)

- Project lead for 6 research studies; average team size of 5 (graduate and undergraduate level).
- Coordinated research subjects, data acquisition, supplies management, & protocol development.
- Applied human physiology research & basic animal/cell model research.
- 7 years teaching undergraduate Exercise Physiology labs and lectures

Education

Ph.D., Exercise Physiology

University of North Carolina at Greensboro 2021

Research Focus: Exercise, Oxidative Stress, & Cell Signaling

M.A., Exercise Physiology

University of North Carolina at Chapel Hill 2016

Research Focus: Mathematical Modeling of Physiological Responses to Cycling

B.S., Health & Exercise Science, with honors

Wake Forest University 2013

Research Focus: Running Biomechanics and Injuries

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Skills

Computational/Statistical Analyses

- Inferential statistics & machine-learning modeling
  - R, Python (scikit-learn, statsmodels, tensorflow), SPSS
- Data Analysis, visualization, and presentation
  - Cleaning - SQL, tidyverse, pandas, datatable, etc.
  - Graphing tools - ggplot, matplotlib, seaborn, plotly
  - Reporting - RMarkdown, Quarto
  - Dashboards building - R Shiny, Python Dash
  - Other programming - Git, CLI, Swift, HTML, CSS, Django
  - Cloud-based tools - AWS (EC2, S3), GitHub

Health and Fitness Wearables

- Extensive history working with sensor processed data
  - GPS, heart rate, beat intervals, accelerometry, SpO_2
  - Algorithm development using above metrics
- Experience processing raw PPG, ECG, 6/9-axis IMU data
- Comparative analyses and benchmarking

Physiological Testing

- Extensive experience in metabolic (VO_2), body comp., lactate, and HR testing
- Experience with 3D gait analysis, EMG, dynamometry, and goniometry
- Biochemical analyses (Western Blots, HPLC, ELISAs, Colorimetric, assay development)

Science Communication

- 7 journal articles
- 7 poster presentations (1 award)
- 4 public scientific white papers
- 1 book chapter
- Lay science reviews for Social Media team