

# Jacob (Hanjie) Shen

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## EXPERIENCE

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- **Mindstrong Health, Inc.** San Francisco, CA  
*Senior Applied Statistician* May 2022 - Present
  - Work on Data Science team to optimize preventative and interventional treatment outcomes through development of actionable behavioral (contextual) models.
  - Develop and implement statistical and machine learning models to examine the potential temporal causality between treatment, members' engagement, contextual factors, and mental illness outcome.
- **Fred Hutchinson Cancer Center** Seattle, WA  
*Statistician* Nov 2018 - Apr 2022
  - Develop and apply robust statistical and machine learning methods to analyze complex fitness tracking data and Electronic Health Record (EHR) data for cancer survivors.
  - Lead in the protocol development, experimental design, writing manuscripts, and data management.
- **UC San Diego Altman Clinical and Translational Research Institute** La Jolla, CA  
*Biostatistics Manager* May 2018 - Oct 2018
  - Lead the statistics unit in Head & Neck Clinical and Translational Research Lab.
  - Design and implement machine learning algorithms and data illustration tools to analyze medical image data, large-scale clinical trials, and observational data.
  - Prepare manuscripts and present scientific research results to a wide variety of stakeholders.
- **UC San Diego Health** La Jolla, CA  
*Statistician* Sep 2015 - Mar 2018
  - Develop and implement statistical and machine learning algorithms to predict the severity levels of cancer patients.
  - Develop and evaluate new predictive models and statistical softwares.

## EDUCATION

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- **University of California San Diego** La Jolla, CA  
*M.S. in Statistics / Ph.D. in Biostatistics (not completed)* Sep 2013 - Mar 2018
- **Xiamen University** Xiamen, China  
*B.S. in Computational Mathematics* Sept 2009 - Jun 2013

## PROGRAMMING SKILLS

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- **Programming Languages:** R, Python, MATLAB, SQL, SAS, Java
- **Specialization:** Experimental Design, Longitudinal Data Analysis, Machine Learning/Deep Learning (Scikit-Learn, Keras, TensorFlow, etc), Data Visualization (ggplot2, Matplotlib, Seaborn, etc)

## PUBLICATIONS

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- Neugebauer RS, **Shen H** *et al.* **Using Marginal Structural Model with Super Learning Techniques to Examine the Risk of Cardiovascular Disease Following Breast Cancer Treatment: The Pathways Heart Study.** *In preparation*, 2022.
- **Shen H**, Rillamas-Sun E *et al.* **Risk of Cardiovascular Disease Following Breast Cancer Chemotherapy Drugs: The Pathways Heart Study.** *In preparation*, 2022.
- Kwan ML, Cheng RK, Iribarren C, **Shen H** *et al.* **Risk of Heart Failure with Preserved versus Reduced Ejection Fraction in Women with Breast Cancer.** *Breast Cancer Research and Treatment*, 1-7, 2022
- Greenlee H *et al.* (including **Shen H**). **Risk of Cardiovascular Disease in Women With and Without Breast Cancer: The Pathways Heart Study.** *Journal of Clinical Oncology*, JCO-21, 2022.

- Kwan ML *et al.* (including **Shen H**). **Risk of Cardiometabolic Risk Factors in Women With and Without a History of Breast Cancer: The Pathways Heart Study.** *Journal of Clinical Oncology*, JCO-21, 2022.
- Marín-Chollom AM, Hale C, Koch P, Gaffney AO, Contento I, **Shen H et al.** **Cognitive Functioning and Health in Hispanic/Latina Breast Cancer Survivors.** *Journal of Immigrant and Minority Health*, 1-8, 2021
- Zakeri K *et al.* (including **Shen H**). **Predictive Classifier for Intensive Treatment of Head and Neck Cancer.** *Cancer*, 126(24), 5263-5273, 2020.
- **Shen H**, Jeong JH, Mell LK. **Proportional Relative Hazards Model for Competing Risks Data.** *medRxiv*, 2020.
- Vitzthum LK, Park H, Zakeri K, Bryant AK, Feng C, **Shen H et al.** **Selection of Head and Neck Cancer Patients for Intensive Therapy.** *International Journal of Radiation Oncology\* Biology\* Physics*, 106(1), 157-166, 2020
- Mell LK, **Shen H et al.** **Nomogram to Predict the Benefit of Intensive Treatment for Locoregionally Advanced Head and Neck Cancer.** *Clinical Cancer Research*, 25(23), 7078-7088, 2019.
- Park A, Alabaster A, **Shen H et al.** **Undertreatment of Women with Locoregionally Advanced Head and Neck Cancer.** *Cancer*, 125(17), 3033-3039, 2019.
- Green G, Kim E, Carmona R, **Shen H et al.** **Incidence of Long-Term Esophageal Dilation With Various Treatment Approaches in the Older Head and Neck Cancer Population.** *Frontiers in oncology*, 8, 466, 2018.
- Zakeri K *et al.* (including **Shen H**). **Predictor of Effectiveness of Treatment Intensification on Overall Survival in Head and Neck Cancer (HNC).** *Annals of Oncology*, 29, viii375-viii376, 2018.
- Vitzthum LK *et al.* (including **Shen H**). **Comparison of Comorbidity and Frailty Indices in Patients with Head and Neck Cancer Using an Online Tool.** *JCO clinical cancer informatics*, 2, 1-9, 2018.
- Zakeri K, Noticewala SS, Vitzthum LK, Sojourner E, **Shen H et al.** **‘Optimism bias’ in Contemporary National Clinical Trial Network Phase III Trials: Are We Improving?.** *Annals of Oncology*, 29(10), 2135-2139, 2018.
- Bryant AK, Vitzthum LK, Zakeri K, **Shen H et al.** **Prognostic Role of p16 in Non-oro-pharyngeal Head and Neck Cancer.** *International Journal of Radiation Oncology\* Biology\* Physics*, 100(5), 1319, 2018.
- Zakeri K, Panjwani N, Carmona R, **Shen H et al.** **Generalized Competing Event Models Can Reduce Cost and Duration of Cancer Clinical Trials.** *JCO Clinical Cancer Informatics*, 2, 1-12, 2018.
- Mell LK, Zhang Q, **Shen H et al.** **Generalized Competing Event Regression to Stratify Head and Neck Cancer Patients: Secondary Analysis of NRG Oncology RTOG 9003, 0129, and 0522.** *International Journal of Radiation Oncology\* Biology\* Physics*, 99(2), S236-S237, 2017.
- Vitzthum LK, Noticewala SS, Hines P, Zakeri K, Nguyen C, **Shen H et al.** **A Web-Based Tool to Compare Comorbidity Models and Geriatric Risk-Assessment in Head and Neck Cancer Patients.** *International Journal of Radiation Oncology\* Biology\* Physics*, 99(2), E379, 2017.
- Noticewala SS, Li N, Williamson CW, Hoh CK, **Shen H et al.** **Longitudinal Changes in Active Bone Marrow for Cervical Cancer Patients Treated With Concurrent Chemoradiation Therapy.** *International Journal of Radiation Oncology\* Biology\* Physics*, 97(4), 797-805, 2017.
- Li N, Noticewala SS, Williamson CW, **Shen H et al.** **Feasibility of ATLAS-Based Active Bone Marrow Sparing Intensity Modulated Radiation Therapy for Cervical Cancer.** *Radiotherapy and Oncology*, 123(2), 325-330, 2017.
- Carmona R *et al.* (including **Shen H**) **Improved Method to Stratify Elderly Patients With Cancer at Risk for Competing Events.** *Journal of Clinical Oncology*, 34(11), 1270-1277, 2016.
- Williamson CW, Green G, Noticewala SS, Li N, **Shen H et al.** **Prospective Validation of a High Dimensional Shape Model for Organ Motion in Intact Cervical Cancer.** *International Journal of Radiation Oncology\* Biology\* Physics*, 96(4), 801-807, 2016.
- Li N, Noticewala SS, Williamson CW, **Shen H et al.** **ATLAS-Based Active Bone Marrow-Sparing Intensity Modulated Radiation Therapy for Cervical Cancer.** *International Journal of Radiation Oncology\* Biology\* Physics*, 96(2S), S98-S99, 2016.