

Stanford

David Siegmund

John D. and Sigrid Banks Professor

Statistics

Bio

ACADEMIC APPOINTMENTS

- Professor, Statistics
- Member, Bio-X

Teaching

COURSES

2022-23

- Consulting Workshop: STATS 390 (Win)
- Literature of Statistics: STATS 319 (Win)
- Theory of Probability III: MATH 230C, STATS 310C (Spr)

2021-22

- Consulting Workshop: STATS 390 (Win)
- Literature of Statistics: STATS 319 (Aut)
- Sequential Analysis: STATS 223, STATS 323 (Win)

2020-21

- Consulting Workshop: STATS 390 (Win)
- Introduction to Stochastic Processes II: STATS 218 (Spr)
- Literature of Statistics: STATS 319 (Spr)
- Stochastic Processes: STATS 317 (Win)

2019-20

- Consulting Workshop: STATS 390 (Win)
- Introduction to Regression Models and Analysis of Variance: STATS 203 (Win)
- Literature of Statistics: STATS 319 (Aut)
- Stochastic Processes: STATS 317 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Han Wu

Doctoral Dissertation Advisor (AC)

Zhen Zhu

Publications

PUBLICATIONS

- **SEGMENTATION AND ESTIMATION OF CHANGE-POINT MODELS: FALSE POSITIVE CONTROL AND CONFIDENCE REGIONS** *ANNALS OF STATISTICS*
Fang, X., Li, J., Siegmund, D.
2020; 48 (3): 1615–47
- **A genome-wide approach for detecting novel insertion-deletion variants of mid-range size.** *Nucleic acids research*
Xia, L. C., Sakshuwong, S., Hopmans, E. S., Bell, J. M., Grimes, S. M., Siegmund, D. O., Ji, H. P., Zhang, N. R.
2016; 44 (15)
- **POISSON APPROXIMATION FOR TWO SCAN STATISTICS WITH RATES OF CONVERGENCE** *ANNALS OF APPLIED PROBABILITY*
Fang, X., Siegmund, D.
2016; 26 (4): 2384-2418
- **SCAN STATISTICS ON POISSON RANDOM FIELDS WITH APPLICATIONS IN GENOMICS** *ANNALS OF APPLIED STATISTICS*
Zhang, N. R., Yakir, B., Xia, L. C., Siegmund, D.
2016; 10 (2): 726-755
- **HIGHER CRITICISM: p-VALUES AND CRITICISM** *ANNALS OF STATISTICS*
Li, J., Siegmund, D.
2015; 43 (3): 1323-1350
- **SEQUENTIAL MULTI-SENSOR CHANGE-POINT DETECTION** *ANNALS OF STATISTICS*
Xie, Y., Siegmund, D.
2013; 41 (2): 670-692
- **Change-Points: From Sequential Detection to Biology and Back** *SEQUENTIAL ANALYSIS-DESIGN METHODS AND APPLICATIONS*
Siegmund, D.
2013; 32 (1): 2-14
- **SEQUENTIAL MULTI-SENSOR CHANGE-POINT DETECTION** *Information Theory and Applications Workshop*
Xie, Y., Siegmund, D.
IEEE.2013
- **MODEL SELECTION FOR HIGH-DIMENSIONAL, MULTI-SEQUENCE CHANGE-POINT PROBLEMS** *STATISTICA SINICA*
Zhang, N. R., Siegmund, D. O.
2012; 22 (4): 1507-1538
- **Spectrum Opportunity Detection with Weak and Correlated Signals** *46th Asilomar Conference on Signals, Systems and Computers*
Xie, Y., Siegmund, D.
IEEE.2012: 128–132
- **False discovery rate for scanning statistics** *BIOMETRIKA*
Siegmund, D. O., Zhang, N. R., Yakir, B.
2011; 98 (4): 979-985
- **DETECTING SIMULTANEOUS VARIANT INTERVALS IN ALIGNED SEQUENCES** *ANNALS OF APPLIED STATISTICS*
Siegmund, D., Yakir, B., Zhang, N. R.
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- **Joint Testing of Genotype and Ancestry Association in Admixed Families** *GENETIC EPIDEMIOLOGY*
Tang, H., Siegmund, D. O., Johnson, N. A., Romieu, I., London, S. J.
2010; 34 (8): 783-791
- **Detecting simultaneous changepoints in multiple sequences** *BIOMETRIKA*
Zhang, N. R., Siegmund, D. O., Ji, H., Li, J. Z.

2010; 97 (3): 631-645

- **Detecting simultaneous changepoints in multiple sequences.** *Biometrika*
Zhang, N. R., Siegmund, D. O., Ji, H., Li, J. Z.
2010; 97 (3): 631-645
- **Mapping Quantitative Traits in Unselected Families: Algorithms and Examples** *GENETIC EPIDEMIOLOGY*
Dupuis, J., Shi, J., Manning, A. K., Benjamin, E. J., Meigs, J. B., Cupples, L. A., Siegmund, D.
2009; 33 (7): 617-627
- **Minimax optimality of the Shiryaev-Roberts change-point detection rule** *JOURNAL OF STATISTICAL PLANNING AND INFERENCE*
Siegmund, D. O., Yakir, B.
2008; 138 (9): 2815-2825
- **The distribution of maxima of approximately Gaussian random fields** *ANNALS OF STATISTICS*
Nardi, Y., Siegmund, D. O., Yakir, B.
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- **Detecting the emergence of a signal in a noisy image** *STATISTICS AND ITS INTERFACE*
Siegmund, D., Yakir, B.
2008; 1 (1): 3-12
- **A unified framework for linkage and association analysis of quantitative traits** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Dupuis, J., Siegmund, D. O., Yakir, B.
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- **Importance sampling for estimating p values in linkage analysis** *JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION*
Shi, J., Siegmund, D., Yakir, B.
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- **A modified Bayes information criterion with applications to the analysis of comparative genomic hybridization data** *BIOMETRICS*
Zhang, N. R., Siegmund, D. O.
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Shi, J., Siegmund, D. O., Levinson, D. F.
2007; 1: S145-?
- **Approximating the variance of the conditional probability of the state of a hidden Markov model** *STATISTICAL APPLICATIONS IN GENETICS AND MOLECULAR BIOLOGY*
Siegmund, D. O., Yakir, B.
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Peng, J., Siegmund, D.
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Batada, N. N., Shepp, L. A., Siegmund, D. O., Levitt, M.
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Peng, J., Tang, H. K., Siegmund, D.
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Siegmund, D., Yakir, B.
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- **On the power for linkage detection using a test based on scan statistics** *BIOSTATISTICS*

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Peng, J., Siegmund, D.
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Batada, N. N., SHEPP, L. A., Siegmund, D. O.
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- **Tail probabilities for the null distribution of scanning statistics** *BERNOULLI*
Siegmund, D., Yakir, B.
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Dupuis, J., Siegmund, D.
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Dupuis, J., Brown, P. O., Siegmund, D.
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Siegmund, D. O., Worsley, K. J.
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- **USING THE GENERALIZED LIKELIHOOD RATIO STATISTIC FOR SEQUENTIAL DETECTION OF A CHANGE-POINT** *ANNALS OF STATISTICS*
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Johnstone, I., Siegmund, D.
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- **CONDITIONAL BOUNDARY CROSSING PROBABILITIES, WITH APPLICATIONS TO CHANGE-POINT PROBLEMS** *ANNALS OF PROBABILITY*
James, B., James, K. L., Siegmund, D.
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- **CONFIDENCE SETS IN CHANGE-POINT PROBLEMS** *INTERNATIONAL STATISTICAL REVIEW*
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 - **SEQUENTIAL X² AND F-TESTS AND THE RELATED CONFIDENCE-INTERVALS** *BIOMETRIKA*
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