

# SHEN, XIAOTAO Ph.D.

Michael Snyder's Lab,  
Stanford School of Medicine

## INFORMATION

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## EDUCATION & RESEARCH EXPERIENCE

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- > **Postdoctoral Research Fellow** (Advisor: [Dr. Michael Snyder](#))  
*Apr 2019 – present, Stanford University.*
- > **Research Scientist** (Advisor: [Dr. Zheng-Jiang Zhu](#))  
*Jan. 2019 – Mar. 2019, Chinese Academy of Sciences (CAS).*
- > **PhD Student in Metabolomics and Bioinformatics** (Advisor: [Dr. Zheng-Jiang Zhu](#))  
*Aug. 2013 – Dec. 2018, Chinese Academy of Sciences (CAS).*
- > **BSs in Biotechnology** *Aug. 2009 - Jun. 2013, Inner Mongolia University.*

## RESEARCH

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- > Metabolomics Data Processing Methods and Software Development.
- > Multi-omics Data Analysis for Biomarker Discovery for Diseases.

## HONORS AND AWARDS

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- > **Student Travel Award for Oral Presentation**  
The International Metabolomics Society (2018).
- > **International Conference Travel Award** The *Metabolites* Journal (2018).
- > **China National Scholarship** Ministry of Education of the People's Republic of China (2017).
- > **Award for Outstanding Youth Report**  
The 3<sup>th</sup> China Mass Spectrometry Analysis Conference (2017).
- > **Merit Student** University of Chinese Academy of Sciences (2016).
- > **Award for Outstanding Youth Report**  
The 34<sup>th</sup> China Mass Spectrometry Society Conference (2016).

- > **Inner Mongolia Outstanding Graduate** Inner Mongolia Autonomous Region (2013).
- > **National Encouragement Scholarship** Inner Mongolia University (2011).

## 📖 PUBLICATIONS

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- > Z. Wang, B. Cui, F. Zhang, Y. Yang, **X. Shen**, Z. Li, W. Zhao, Y. Zhang, K. Deng, Z. Rong, K. Yang, X. Yu, K. Li, P. Han, and Z.-J. Zhu, Development of A Correlative Strategy to Discover Colorectal Tumor Tissue Derived Metabolite Biomarkers in Plasma Using Untargeted Metabolomics, *Analytical Chemistry*, 2018, in press, 10.1021/acs.analchem.8b05177. [↗](#)
  - > **X. Shen**, R. Wang, X. Xiong, Y. Yin, Y. Cai, J. Ma, N. Liu and Z.-J. Zhu, Large-scale Metabolite Identification for Untargeted Metabolomics Using Metabolic Reaction Network, *Nature Communications*, 2019, 10:1516. [↗](#)
  - > **X. Shen** and Z.-J. Zhu, MetFlow: An interactive and integrated workflow for metabolomics data cleaning and differential metabolite discovery, *Bioinformatics*, 2019, in press, <https://doi.org/10.1093/bioinformatics/bty1066>. [↗](#)
  - > Z. Zhou, **X. Shen**, X. Chen, J. Tu, X. Xiong, and Z.-J. Zhu, LipidIMMS Analyzer: Integrating Multi-dimensional Information to Support Lipid Identification in Ion Mobility–Mass Spectrometry based Lipidomics, *Bioinformatics*, 2018, in press, <https://doi.org/10.1093/bioinformatics/bty661>. [↗](#)
  - > H. Jia, **X. Shen (Co-first author)**, Y. Guan, M. Xu, M. Mo, J. Zhu and Z.-J. Zhu, Assessment of The Response to Neoadjuvant Chemo-Radiation in Rectal Cancer Patients based on A Metabolomics Approach, *Radiotherapy and Oncology*, 2018, 128, 548–556. [↗](#)
  - > Z. Zhou, J. Tu, X. Xiong, **X. Shen**, and Z.-J. Zhu, LipidCCS: Prediction of Collision Cross-Section Values for Lipids with High Precision to Support Ion Mobility-Mass Spectrometry based Lipidomics, *Analytical Chemistry*, 2017, 89, 9559–9566. [↗](#)
  - > Z. Zhou, **X. Shen**, J. Tu, and Z.-J. Zhu, Large-Scale Prediction of Collision Cross-Section Values for Metabolites in Ion Mobility - Mass Spectrometry, *Analytical Chemistry*, 2016, 88, 11084–11091. [↗](#)
  - > J. Wang, T. Zhang, **X. Shen (Co-first author)**, J. Liu, D. Zhao, Y. Sun, L. Wang, Y. Liu, X. Gong, Y. Liu, Z.-J. Zhu, F. Xue,\* Serum Metabolomics for Early Diagnosis of Esophageal Squamous Cell Carcinoma by UHPLC-QTOF/MS, *Metabolomics*, 2016, 12: 116. [↗](#)
  - > **X. Shen**, X. Gong, Y. Cai, Y. Guo, J. Tu, H. Li, T. Zhang, J. Wang, F. Xue, and Z.-J. Zhu, Normalization and Integration of Large-Scale Metabolomics Data Using Support Vector Regression, *Metabolomics*, 2016, 12: 89. [↗](#)

## 🗨️ ORAL PRESENTATIONS

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- > Metabolic Reaction Network-based Recursive Metabolite Identification for Untargeted Metabolomics. **The 14<sup>th</sup> International Conference of the Metabolomics Society**, June, 2018, Seattle, USA.

- › Assessment of the Response to Neoadjuvant Chemo-Radiation in Rectal Cancer Patients based on a Metabolomics Approach. **The 3<sup>th</sup> China Mass Spectrometry Analysis Conference**, December, 2017, Xiamen, China. [↗](#)
- › Normalization and Integration of Large-Scale Mass Spectrometry-based Metabolomics Data Using Support Vector Regression. **The 34<sup>th</sup> China Mass Spectrometry Society Conference**, September, 2016, Xining, China.
- › Normalization and Integration of Large-Scale Mass Spectrometry-based Metabolomics Data Using Support Vector Regression. **The 64<sup>th</sup> American Society for Mass Spectrometry Conference**, June, 2016, San Antonio, USA. [↗](#)









## POSTERS PRESENTATION

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- › Metabolic Reaction Network based Metabolite Annotation in Untargeted Metabolomics. **The 13<sup>th</sup> International Conference of the Metabolomics Society**, June, 2017, Brisbane, Austria.

## TECHNICAL STRENGTH

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-  **Languages:** Mandarin (Very fluent), English (Fluent).
-  **Mass Spectrometry Analysis:** Agilent QTOF 6550, Agilent QQQ 6495, 6460, Agilent IMMS 6560, AB sciex Triple TOF 5600, 6600.
-  **Programming Languages:** R , Python .
-  **Bioinformatic Tools:** Agilent MassHunter work station, AB sciex PeakView, XCMS, MS-DIAL.
-  **Other Skills:** Markdown, Photoshop, Illustrator, Linux (Ubuntu and CentOS), GitHub , Shiny [↗](#).