



**Stony Brook University**  
The State University of New York

---

Department of Biomedical Informatics  
School of Medicine and College of Engineering and Applied Sciences  
**Special Seminar**

Deep Structured Learning for Health and Biomedical Data



Tengfei Ma, PhD  
Staff Researcher  
IBM T. J. Watson Research Center  
Yorktown, NY

**Tuesday, June 28, 2022**  
**3:00pm – 4:00pm**

**Join Zoom Meeting**

<https://stonybrook.zoom.us/j/92849941151?pwd=TWxwbytoaDILVDRDdEZYcjIxZlJ4QT09>

**Meeting ID: 928 4994 1151**

**Passcode: 469714**

**Abstract:**

The explosion of various healthcare and biomedical data has created tremendous needs and opportunities for applying deep learning to improve clinical care and accelerate biomedical research. However, many of the data contain rich structure information, which was not fully utilized by previous deep learning models. For example, the medical codes in EHR (electronic health record) data have hierarchical structures in the code ontology; the molecules studied in drug discovery have natural graph structures.

My research focuses on mining intrinsic structures from the data and developing new deep learning methods exploiting these structures. In this talk, I will present my previous and ongoing research on sequence and graph learning for EHR analysis and drug discovery. These methods are applied to various tasks such as disease risk prediction, medication recommendation, drug design and drug safety checking. I will also discuss major challenges of the field and future research opportunities.