This short course will cover the current state-of-the-art approaches for tensor-based linear modeling and space-kime analytics. The instructors will present a generalized framework for modeling and prediction of scalar, matrix, or tensor outcomes from observed tensor inputs. In addition, we will demonstrate the complex-time (kime) representation of longitudinal data, where the temporal event order is generalized to the (unordered) complex plane. This generalization transformed classical time-series to 2D kime-surfaces. Various biomedical and health applications will be showcased.

**Instructors**
- Maryam Bagherian, University of Michigan
- Miaoyan Wang, University of Wisconsin-Madison
- Raj Guhaniyogi, Texas A&M University
- Anru Zhang, Duke University
- Ivo Dinov (Organizer), University of Michigan
- Maria Longobardi (GDS Program Chair), University of Naples Federico II

**Logistics**
- Full-day (8-hours), enrollment capped at 30 participants. See website for registration, prerequisites, coverage & program. APS courses require a nominal registration fee ($80 – 200), 2-4 need-based fee-waivers may be awarded to trainees (see website)
  - [https://myumi.ch/G1411](https://myumi.ch/G1411)
  - [https://march.aps.org/events/gds-short-course](https://march.aps.org/events/gds-short-course)

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 Contacts: Ivo Dinov, statistics@umich.edu | Maria Longobardi, Maria.Longobardi@unibas.ch

 URL: [https://wiki.socr.umich.edu/index.php/SOCR_NewsAPS_GDS_ShortCourse_March_2022](https://wiki.socr.umich.edu/index.php/SOCR_NewsAPS_GDS_ShortCourse_March_2022)