

## July 1-2, 2017 建模工作坊:臺灣 議程

地點：國立臺灣師範大學公館校區 科教大樓二樓 SE204 教室  
(臺北市文山區汀州路四段 88 號)

主辦人：邱美虹教授 國立臺灣師範大學

講師：**Joseph Krajcik** (Director of the Institute for CREATE for STEM; Professor of Science Education in the College of Natural Science at MSU)

**Ann Novak** (Greenhills School located in Ann Arbor, Michigan)

Time	Saturday, July 1
9-9:30	Introductions Goals of workshop
9:30 - 10:00	Introduce Modeling (Joe)
10:00 - 10:30	Introduce SageModeler - non-science example (Ann)
10:30 - 10:45	Tea Time
10:45 - 11:15	Introduce water quality – background Generate water quality measures and relationships
11:15 - 12:00	Pairs work to build water quality models. Each person with own computer but talking together. Share in small groups if time
12:00 -13:00	lunch
13:00 - 13:45	Large group share, a couple groups share – run/explain model
13:45 - 14:45	Share 7 <sup>th</sup> grade water quality models: classroom use and research (Ann)
14:45 - 15:00	Tea Time
15:00 - 16:00	Large discussion: What are some possibilities for constructing models in your curriculum? What areas are rich in causal relationships? What types of systems can be modeled? <ul style="list-style-type: none"><li>● Small groups – group by content area</li><li>● Generate ideas for model building</li><li>● Share ideas</li></ul>

16:00 - 16:30	<p>Tomorrow's plan: Build models of something that you can incorporate into your teaching</p> <p>Debrief. Feedback. What is useful? What is not useful? What would you like to focus on tomorrow?</p> <p>Question</p> <p>HW: bring in science materials</p>
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Time	Sunday, July 2
9-9:15am	Intro to the day
9:15 - 9:45	Participants share ideas for models
9:45 - 10:45	Participants work on curriculum and models
10:45 - 11:00	Tea Time
11:00 - 12:00	Participants share and discuss curriculum ideas and share models with one other group to receive feedback
12-13:00	lunch
13:00 - 14:00	Participants continue to work on curriculum materials
14:00 - 15:00	Gallery walk to share models and receive feedback
15:00 - 15:15	Tea Time
15:00 - 16:15	Advanced features
16:15 - 16:30	Closing remarks