

12th Annual
Catchment Science Summer School
 Aug 29-Sept 3, 2021
 University of Birmingham
 Birmingham, UK

Agenda

ALL TIMES BELOW BIRMINGHAM UK TIME

<i>Sunday, Aug 29, 2021</i>	
3.45-4.00pm	Arrival into Zoom. People log on from their various home locations
4.00-5.00pm	Online reception, self-introductions and course intro lecture – (McDonnell)
5.00-5.15 pm	Coffee break
5.00-7.00 pm	Mix-up mash-up breakout rooms to describe what you are doing in small groups: Student lightning presentations on their planned or ongoing work (1-min each) We will mix you up for discussions / presenting “your slide” (to be provided one week before class so that we can distribute them)
<i>Monday, Aug 30, 2021</i>	
Perceptual Models in Catchment Science	
1.00pm	Welcome and outline of short course objectives (McDonnell)
1.15-6.00pm	Evolution of perceptual models in catchment hydrology -Horton (1933) through The First International Hydrological Decade (1965-1974) (McDonnell) -Isotope tracers in catchment hydrology and revised process understanding ~1975-2010 (McDonnell) -Perceptual models for plant water between precipitation events ~2010 to present (McDonnell) <i>- 15 min (coffee) breaks at the end of each lecture hour block</i>
6.00-6.30	Student break out room session
<i>Tuesday Aug 31, 2021</i>	
Conceptual Models in Catchment Science	
1.00pm	Overview of the day (McDonnell)

1.15-2.00pm	-Connectivity: hillslopes to catchments (van Meerveld)
2.15-6.00pm	-Historical development of ideas on streamflow modelling (Seibert) -Bucket-type models (incl. short overview of the HBV model) (Seibert) -Very short intro to spatially explicit, physically based models (SHE as an example) -Storage concepts in hydrology and hydrological modeling (Seibert) -Model calibration and validation (Seibert) -Uncertainty, equifinality, parameter identifiability (Seibert) -How good is my model? – the need for benchmarks <i>- 15 min (coffee) breaks at the end of each lecture hour block</i>
6.00-6.30	Student break out room session

Wednesday, Sept 1, 2021	
Tracers in Catchment Science	
1.00pm	Overview of the day (McDonnell)
1.15-3.30pm-	- Top down approach: regionalising catchment hydrology with tracers (Soulsby) - Bottom up approach: tracers, hillslope and small catchment hydrology (Soulsby) <i>- 15 min (coffee) breaks at the end of each lecture hour block</i>
3.45-6.00	<i>Demonstration and Hands-on Exercise at the EcoLab outdoor flume sites</i> <i>-sub-stream zone mixing and thinking about stream-aquifer interactions, mixing and links to biogeochemical exchanges</i> <i>(led by Profs. David Hannah and Stefan Krause)</i>
6.00-6.30	Student break out room session
Thursday, Sept 2, 2021	
Catchment-scale processes: Scale issues and modelling	
1.00pm	Overview of the day (McDonnell)
1.15 - 6.00pm	- Local to Global scale issues in catchment hydrology (Tetzlaff) - Insights from tracers in different geographical environments (Soulsby)

	-Integrating isotopes in catchment scale models (Soulsby) -Picture a scientist: Discussion of issues faced by women in hydrology (Tetzlaff) <i>- 15 min (coffee) breaks after each lecture hour</i>
6.00-6.30	Student break out room session

Friday, Sept 5, 2021	
Land use and climate change impacts on catchment science	
1.00 pm	Overview of the day (McDonnell)
1.15 -3.00	Land use (and climate) change effects on runoff patterns (van Meerveld)
3.15 -4.00	The challenge of modeling change (Seibert and van Meerveld)
4-4.15	Student breakout room session
4.15-5.15	Value of data in hydrological modeling, scale issues, etc (Seibert and van Meerveld)
5.15-5.30	Student breakout room session
5:30-6.15	Flipped classroom Q&A: Launching an academic career in catchment science. Open discussion following pre-viewing a recorded online lecture (all)
6.15-6.30pm	Course wrap up, evaluations (McDonnell)