

# Workshop Schedule

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## Week 1

### Day 1, Jan 3

Time	Activity	Speaker	Topic
9:00 – 10:30	Lecture	ERD/DPS	Introductions and Goals
10:30 – 10:45	Morning Break		
10:45 – 12:00	Livecode	DPS	Basics in R (R Studio; importing, exporting, cleaning data; data classes)
12:00 – 13:30	Lunch		
13:30 – 14:45	Livecode	DPS	Slightly more advanced R (custom functions, flexible arguments, loops)
14:45 – 15:00	Afternoon Break		
15:00 – 16:30	Hands on	—	Practice manipulating raw data

### Day 2, Jan 4

Time	Activity	Speaker	Topic
9:00 – 10:30	Lecture	ERD	Overview of Movement Ecology and Analyses
10:30 – 10:45	Morning Break		
10:45 – 12:00	Livecode	DPS	Introduction to spatial data in R
12:00 – 13:30	Lunch		
13:30 – 14:45	Livecode	DPS	Movement data in R (movebank, ltraj objects, path metrics)
14:45 – 15:00	Afternoon Break		
15:00 – 16:30	Hands on	—	Practice plotting tracks and extracting path metrics

### Day 3, Jan 5

Time	Activity	Speaker	Topic
9:00 – 10:30	Lecture	ERD	Selection methods; Home ranges and utilization distributions
10:30 – 10:45	Morning Break		
10:45 – 12:00	Livecode	DPS	Home Range Estimation in R
12:00 – 13:30	Lunch		
13:30 – 14:45	Livecode	DPS	Habitat Selection Analysis in R
14:45 – 15:00	Afternoon Break		
15:00 – 16:30	Hands on	—	From path to presence: transforming tracks into knowledge

## Week 2

### Day 4, Jan 8

Time	Activity	Speaker	Topic
9:00 – 10:30	Lecture	WMG	Space-time considerations
10:30 – 10:45	Morning Break		
10:45 – 12:00	Livecode	ERD	From LoCoH to T-LoCoH (and a-LoCoH)
12:00 – 13:30	Lunch		
13:30 – 14:45	Livecode	ERD	T-LoCoH derived metrics; alternative methods (Brownian bridges, AKDE)
14:45 – 15:00	Afternoon Break		
15:00 – 16:30	Hands on	—	Personal projects

### Day 5, Jan 9

Time	Activity	Speaker	Topic
9:00 – 10:30	Lecture	WMG	Behavioral analysis; FME, CAM, and movement syndromes
10:30 – 10:45	Morning Break		
10:45 – 12:00	Livecode	ERD	Extracting behavioral state from movement tracks (BCPA, HMM)
12:00 – 13:30	Lunch		
13:30 – 14:45	Livecode	DPS	Identifying movement syndromes; metrics for classification
14:45 – 15:00	Afternoon Break		
15:00 – 16:30	Hands on	—	Personal projects

### Day 6, Jan 10

Time	Activity	Speaker	Topic
9:00 – 10:30	Lecture	DPS	Simulating movement; why, when?
10:30 – 10:45	Morning Break		
10:45 – 12:00	Livecode	ERD	Coding principles of random walks, Levy flights, other movement types
12:00 – 13:30	Lunch		
13:30 – 14:45	Livecode	ERD	Implementing agent-based movement models
14:45 – 15:00	Afternoon Break		
15:00 – 16:30	Hands on	—	Personal projects

### Day 7, Jan 11

Time	Activity	Speaker	Topic
9:00 – 10:30	Hands on	—	More simulations

Time	Activity	Speaker	Topic
10:30 – 10:45	Morning Break	ERD	Adding disease transmission to agent-based movement models
10:45 – 12:00	Livecode		
12:00 – 13:30	Lunch	WMG	Epidemiological models
13:30 – 14:45	Lecture		
14:45 – 15:00	Afternoon Break	WMG	Modeling Epidemics in Nova and fitting parameters
15:00 – 16:30	LiveCode		

## Day 8, Jan 12

Time	Activity	Speaker	Topic
9:00 – 10:30	Hands on	—	Personal projects: our goal on the last day is to help students 1:1 with topics related to their personal data, projects, or areas of interest
10:30 – 10:45	Morning Break	—	Personal projects
10:45 – 12:00	Hands on		
12:00 – 13:30	Lunch	—	Personal projects
13:30 – 14:45	Hands on	—	
14:45 – 15:00	Afternoon Break	—	Wrap up, Outstanding Questions, and Thanks
15:00 – 16:30	Wrap Up		