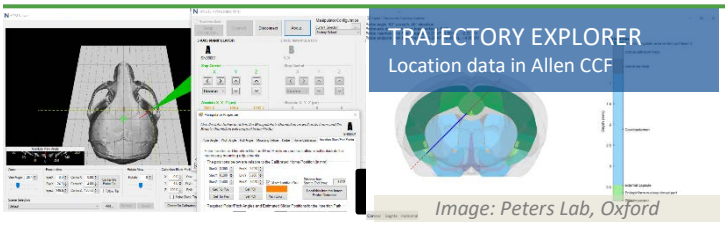
New Scale Technologies

SMALL, PRECISE, SMART … IN MOTION

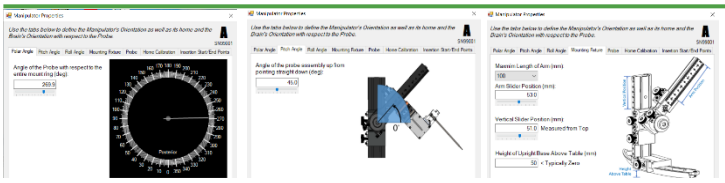
Integration of the MPM Multi-Probe Micromanipulator System with Trajectory Planning and Data Acquisition Apps

Simulate-Plan-Execute-Debug-Repeat | Combining real-time stereotactic position data with the MPM Micromanipulator System will lead to more accurate electrode placement, and more scientifically valuable recordings. In development - beta testing in early 2023.

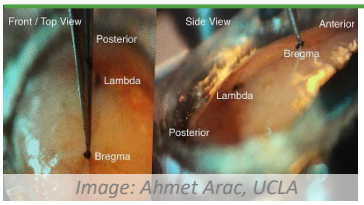
Manipulator designed for multiple probes
Simplifies placement of multiple silicon probes in one animal for acute in-vivo recording. Hardware offers flexible setup in the smallest space. Pathfinder software with Virtual Coordinate System (VCS) moves all probes in a common stereotactic coordinate space. Supports simulation, planning, and execution.



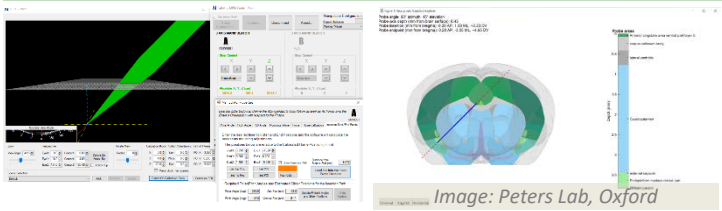
Plan experiments from your desktop
Determine probe insertion path with start and stop coordinates using the MPM System's Pathfinder Software with Virtual Coordinate System (VCS), combined with a trajectory planning tool.
We are working with Trajectory Explorer and Pinpoint.



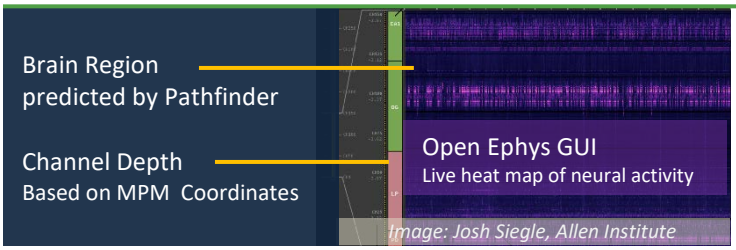
Set up hardware for the planned probe trajectory
Pathfinder determines the polar angle/azimuth (position of the manipulator on the platform ring), pitch angle (arm elevation), and arm height and length. Spend less time calculating angles, more time recording.



Establish stereotactic coordinates for the experiment
Calibrate the animal by registering bregma and lambda with the MPM alignment probe. Adjust hardware to accommodate any minor differences from the simulation. Now Pathfinder displays the probe in a 3D virtual coordinate system and begins to pass probe coordinates to your trajectory planning and data acquisition apps.



Place probes more accurately
As you use the MPM to insert the probe, you will be able to visualize real-time probe location in the Allen Institute's 3D brain atlas, the Common Coordinate Framework (CCF), using the trajectory planning tool.
We are working with Trajectory Explorer and Pinpoint.



Visualize brain activity during insertion
Compare real-time brain activity to the probes' positions based on MPM coordinates. Live heat maps show activity in brain region and channel depth. Is it what you expect, or have you missed your target?
We are working with the Open Ephys GUI, SpikeGLX and Allego.