

PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Turning rats into robots

ArticleInfo		
ArticleID	:	4467
ArticleDOI	:	10.1186/gb-spotlight-20020502-02
ArticleCitationID	:	spotlight-20020502-02
ArticleSequenceNumber	:	133
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2002-5-2 OnlineDate : 2002-5-2
ArticleCopyright	:	BioMed Central Ltd2002
ArticleGrants	:	
ArticleContext	:	130593311

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Laboratory animals can be trained to perform simple tasks in response to external cues (such as specific noises) or rewards (such as food). In the May 2 [Nature](#), Talwar *et al.* describe a learning procedure based on brain microstimulation rather than external cues (*Nature* 2002, **417**:37-38). They implanted stimulating electrodes in the medial forebrain bundle (MFB) or the somatosensory cortical, to mimic rewards or cues, respectively. They strapped a remote-control microstimulator backpack to each animal. In this way the operator could train the rats from as much as 500 m away by delivering stimulus pulses. MFB stimuli were used to drive forward locomotion and could guide the rats through pipes and around mazes. Talwar *et al.* propose that such 'virtual' learning methods provide a powerful tool to and understanding of the neurophysiology of learning and behavior. They add that this approach "could allow a guided rat to function as a both a mobile robot and a biological sensor".

References

1. *Nature*, [<http://www.nature.com>]