

# DEVCOM ARMY RESEARCH OFFICE WHY NEUROSCIENCE?

Neurophysiology of Cognition  
chou.p.hung.civ@army.mil

<https://www.arl.army.mil/collaborate-with-us/opportunity/arl-baa/>

## Evolutionary and Revolutionary Interactions

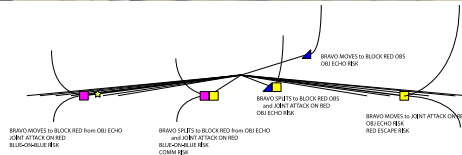
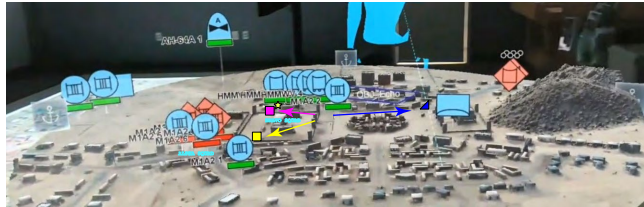
### Real World interactions

How do organisms survive and adapt in unstructured environments?



### Mixed World interactions

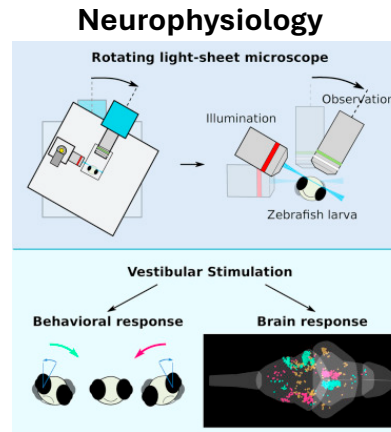
How to excel in AI augmented, data-rich environments?



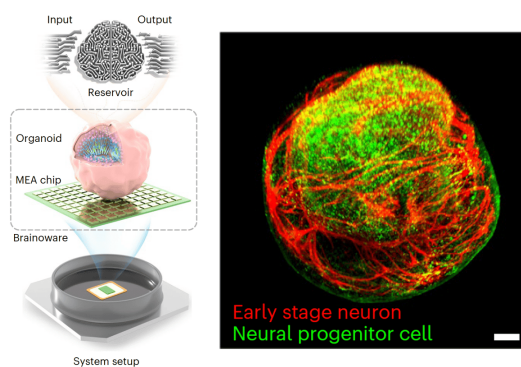
**Fatigue, Stress, Extreme Environments**  
What are the fundamental mechanisms?

## Neural Computation, Information Coding, and Translation

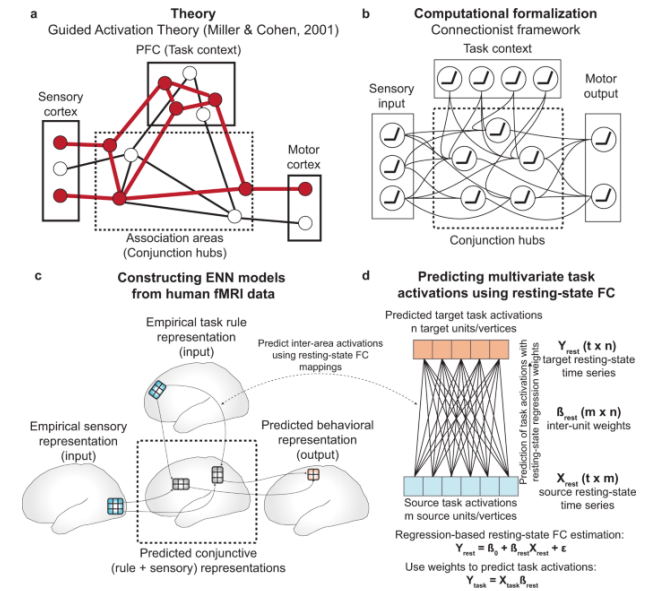
Can we discover principles of brain computation, to develop better AIs?  
More **adaptive**, data and energy **efficient**, **contextual**, **complex** reasoning



### Neuromorphic and hybrid computing



### Computational modeling



**You can learn to recognize someone from a single glance, and decide on a COA, with less than 20W of brain power. How?**

## ARO and Other Broad Agency Announcements

<https://www.arl.army.mil/collaborate-with-us/opportunity/arl-baa/>

Award Type	Target	Funding
Single Investigator (SI)	Single-laboratory projects	~\$141K/year for ~3.4 years avg*
Short Term Innovative Research (STIR)	Very high-risk pilot projects	\$60K for 9 mo.
Early Career Awards (formerly Young Investigator Program)	Early-career PIs	\$120K/year for 3 years
Conferences / Workshops / Symposia	Academic State of Science	\$10K–\$30K
Presidential Early Career Award for Scientists and Engineers (PECASE)	Promising future leaders	\$200K/year for 5 years
Defense University Research Instrumentation Program (DURIP)	<b>Instrumentation</b>	\$200K/year average FY22
Multidisciplinary University Research Initiative (MURI)	Large multidisciplinary programs	~\$1.25M/year up to 5 years
Historically Black College/University and Minority Institution (HBCU/MI)	Minority serving institutions	~\$140K/year for 3 years
Small Business Technology Transfer (STTR)	Multi-phase awards bridging academia & industry	\$150K (6 mo.) to \$1M (24 mo.)
Small Business Innovative Research (SBIR)	Multi-phase research for industry transition	\$150K (6 mo.) to \$1M (24 mo.)

\*FY21 averages; funding level and duration in this award category vary based on scope of project, proposal, evaluations, and PM recommendation.