

Synergy of Cognitive and Biological Approaches to Language Plasticity

It can take years or even decades for advances in **cognitive** domains to impact **biological** domains – and vice versa.

Much deeper understanding of language plasticity will follow when cognitive and biological scientists are able to work together to consider the full context of gene-environment-neural-behavioral interactions that determine the nature and development of language.

Advances in **behavior genetics**, **computational modeling**, and **cognitive neuroscience** should facilitate biological-cognitive links, but links remain weak and rare. **Why?**

The **main obstacle** is lack of common background that prevents **cross-disciplinary communication**. Our training program breaks down disciplinary boundaries and accelerates cross-disciplinary transfer. We train scientists in cognitive and biological domains sufficiently in each other's fields that they can work in collaborative teams to develop a unified cognitive-biological approach to language plasticity.



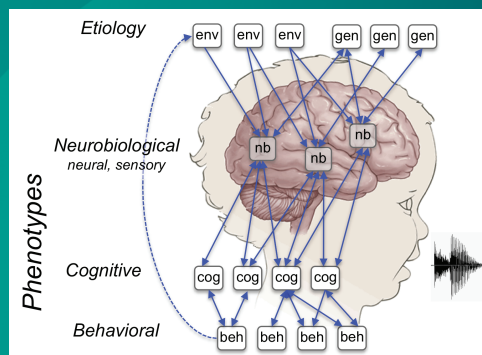
Unifying Biological & Cognitive Approaches

We are training a new generation of scientists in *Linguistics, Psychology, Molecular and Behavioral Neuroscience and Genetics, Cognitive Neuroscience and Communication Disorders to have:*

- Deep specialist expertise in their home Ph.D. domain
- Cross-domain training sufficient for understanding fundamental concepts, terminology, methods, theories and research literature in other domains

Enabling trainees to:

- Work in cross-disciplinary teams
- Use tools and ideas from cognitive and biological disciplines to discover dynamic, causal relations among genetic, neurobiological, cognitive, and behavioral activity and traits, and the physical and cultural environment that shapes and is shaped by the learner



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A Training Program to Achieve Our Vision

- **Foundational courses** bring trainees up to speed in fundamental concepts, terminology, methods, and theories in each cognitive and biological discipline, and cross-cutting tools like computational modeling
- **Breadth mentors** guide trainees in research-based training
- **Innovation workshops** with renowned experts from industry and academia prepare students to see beyond disciplinary and methodological boundaries
- **Innovation grants** provide trainees with funds to launch their own team-based collaborations
- **Short “primer” courses** are developed by faculty and students to keep pace with rapid developments
- **Funding:** generous stipends and travel funding
- **International internships** provide access to expertise and instruments that complement those at UConn & Haskins Labs, and provide a global perspective on science

