



# BRAIN initiative projects transcend traditional categories promoting inclusion

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## Summary

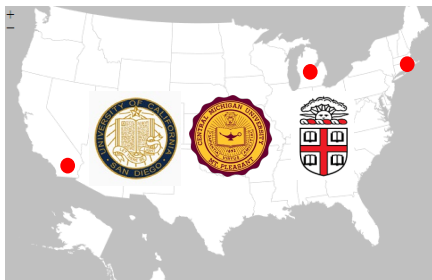
Categories serve to reduce complexity and help us to navigate our social environment. At the same time, they can trap individuals in perceived or real boundaries. This applies to the social ecosystem in science as much as to any other area of society. By focusing efforts on novel technologies and innovation to tackle as yet unsolvable challenges, the BRAIN initiative has evolved into an infrastructure that enables transcending barriers that have tended to impede individual scientists. The reasons for this may include the composition of study sections, catalyzing collaborations among researchers that span different disciplines, and the targeted funding of groups of individuals who have been under-resourced.

Three categories were specifically positively influenced by BRAIN initiative funded projects: institutional affiliation, membership in underrepresented groups, and education at early ages.

The following parent grants and diversity supplements were instrumental in our diversity, equity and inclusion efforts: NSF NeuroNex 1707352; NIH U01NS099709-02S1, -02S2, -02S3, -03S1.

## Research Partnerships across Institutions

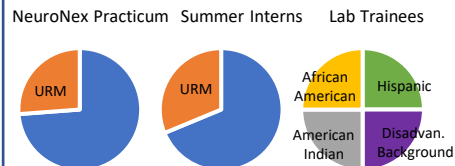
Our mutual interests in harnessing bioluminescence and optogenetics to regulate neuronal circuits brought our laboratories together – from research-intensive institutions, Brown University and University of California San Diego, and from a limited resource institution, Central Michigan University.



Strategies that were mutually beneficial are weekly virtual meetings, lab member exchanges across universities, and cross-mentorship of graduate students and postdoctoral fellows. Notwithstanding the reluctance of colleagues who even at this day and age do not believe that virtual training and mentoring can be immensely effective, we highly recommend such partnerships.

## Diversifying Trainee Participation

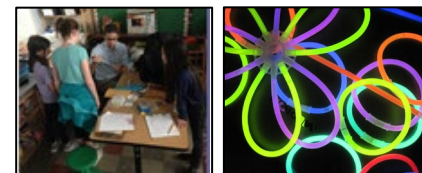
The BRAIN initiative projects catalyzed our ability to attract a broader group of highly talented students including undergraduate, graduate and postdoctoral trainees from underrepresented groups. The breadth of our research – which spans chemistry, molecular design, and *in vitro* and *in vivo* electrophysiology - requires a breadth of expertise through a range of different mechanisms.



Recruitment remains a challenge. For the NeuroNex Practicum we send program advertisement to SACNAS, ABRCMS, AISES, BP-ENDURE, The Leadership Alliance and directly to public college biology departments, particularly in Mid-Western, Southern, and rural areas. Our trainees are getting ready to join or have gone on to science graduate programs and medical schools.

## Bringing Cutting Edge Science into Elementary School

It is never too early to learn about the beauty of natural phenomena, to show students the science behind what they see and to entice the next generation of scientists. Stimulating interest in biology and developing hands-on bioluminescence demonstrations in elementary schools has been highly successful. However, finding ways to keep the attention and achieving enthusiasm through virtual demos for high schoolers was challenging.



We conducted hands-on bioluminescence demos for Providence public elementary school students.

We held a virtual 'Ask a Scientist' event for elementary school students.

We conducted a half day, hands-on bioluminescence for Providence-area public high school and homeschooled students.