

TITLE: Electrochemical Microsensor Array for Neuroscience and Health/Environmental Monitoring

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PURPOSE

- Engineer an ultra-small, highly durable, highly compatible, multifunctional, multiplexed, extremely sensitive, selective, reproducible and reliable (bio)sensor probe.
- Demonstrate long-term sensor function in complex environments with no or minimal sample preparation and/or external reagents.

CUSTOMERS

- Drs. Teresa Murray (LA Tech), Moldovan (Alcorix Co), Vetter (NeuroNexus), Pati (UT Houston), Neugebauer (Texas Tech HSC)
- Faculty & industry websites, ex-colleagues, well-wishers
- University faculty/students/administration, small/large businesses, healthcare providers, end users (patients, public)

DESIRED END RESULT

- Demonstrate real-time neurotransmitters (up to 8) mapping with highest sensitivity and selectivity based on a *single* detection technique in at least 2 brain regions for 2 wk in a freely moving animal.
- Devised a tandem sensor with uniquely modified enzyme coatings to detect glutamate and GABA simultaneously.

CURRENT STATUS

- Glutamate-GABA probe is in commercialization phase (NINDS Phase II STTR proposal is pending). Focusing on usability, reliability, compatibility & marketability.
- Identifying new collaborators in research hospitals (gateway to clinical/medical use) to develop a human compatible probe (via NINDS UG3/UH3 mechanisms).