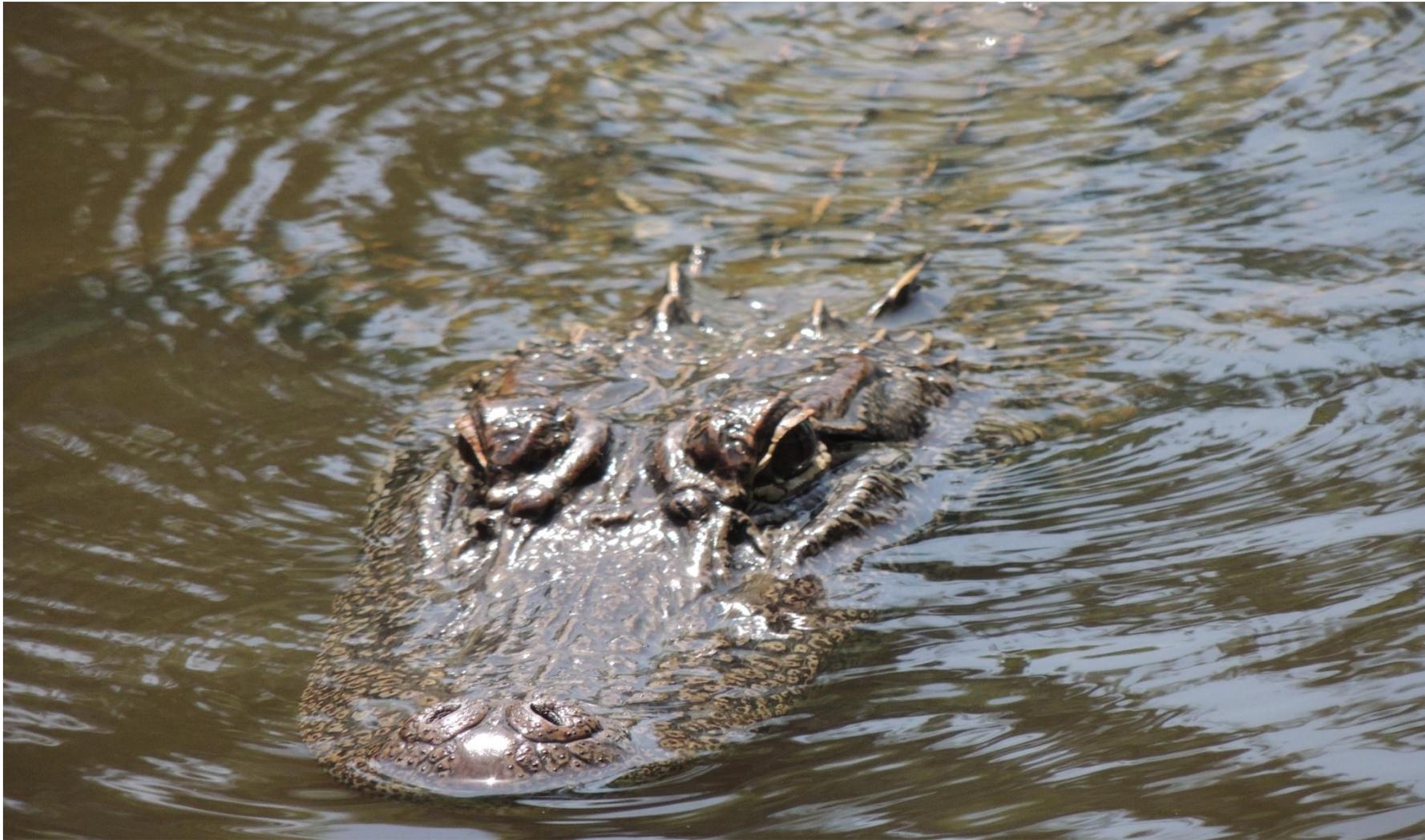


# IERASG XXIIIrd Symposium: NOLA!!





# IERASG

- Let's talk about the A of ERA
- “Audiometry” vs. “audiology”
- Audiology has grown to encompass many kinds of auditory system dysfunctions.
- Audiology considers detection, identification, evaluation and treatment of these dysfunctions.
- ER **A** can also be used in each of these contexts.

# Broad Applications of Evoked Responses

- Dyslexia
- Autism
- Plasticity and mechanisms of repair
- Speech-in-noise
- Cognitive consequences of hearing loss
- Laterality
- Neural toxicity and protective agents
- Gerontology
- Newborn hearing screening and pediatric audiology
- Perception and evaluation of auditory processing, typical and atypical

# IERASG XXIIIrd Symposium

## □ Day I

Hallowell Davis Lecture by James Jerger

Listening to Words: Auditory event-related potentials reveal cognitive complexity, implications for speech Audiometry

- a) “You cannot ignore attention”
- b) “You **can** measure listening effort”
- c) Processing negativity can be used as an assay of some top down strategies used in listening speech.
- d) This has important translation into methods that we can use as targets for rehabilitation.

# Day 1

- Technical Issues
  - ▣ Bayesian averaging and efficiency
  - ▣ Detection of ASSRs
  - ▣ Chirps
- All of these can be aimed at improving screening and identification applications
- Standards
- OAEs: chirps and tonebursts

# Day I

## □ Posters

- Breadth of applications, stimulus considerations (chirps and tone bursts), questioning some assumption of ERA

## □ Innovations

- Provided by sponsors
- Yes Bue, we really do like middle ear measures!
- (to say nothing of SOAP).
- Hand-held ABR and OAE! (beats the days of carting around a rack of equipment to the NICU)
- *Intelligent* and *Otometric* systems instruments for ERA.

# Day II

- Pinch-hitters: Walger, Durrant, Burkard and Cone
  - ▣ EcoG to Corticals and all points in-between and overlapping!
- Signal Processing:
- “AHA” moment: We can use “Fancy Signal Processing” (as Dimitrijevic and perhaps Ozdamar too would say) to understand brain mechanisms.

# Day III

- FFR and ASSR
  - Applying these techniques to the evaluation of mechanisms underlying localization and phonological processing
  - Auditory system development
  - Bone conduction audiometry
  - Binaural interaction

# Day III

- Long Latency Responses (????) and AEPs across the lifespan
  - Research addressing
    - speech in quiet and noise,
    - high and low context and laterality (ear differences)
    - temporal processing in “elderly” (**SENIORS**). (see also, *Elders*).

# Day IV

- Electrical responses of electrical devices (cochlear implants),  $E^2$ 
  - ▣ The use of all EPs for evaluation and understanding of “electrical” hearing.
  - ▣ Methods and techniques for improving applicability of ERA methods.
  
- Vestibular Responses
  - ▣ Bring it on!

# Reflections

- Commitment of long-timers
- Enthusiasm of younger folk
- Heritage of Davis, Galambos, Picton et al
  - ▣ Students of students of...
- Dynamic groups from Germany, Belgium, Canada, Australia, Korea, Poland
- Some sadness about retirements: Roger, Terry, Manny, Yvonne, Einar

# Quotes

- “My mission here is to create confusion”—Bohorquez on Randomized multi-stimulus averaging deconvolution (RMAD).
- Burkard: “I blame manufacturers for all of my life’s problems”...Steinman: “Happy to oblige”.
- “Here’s the same thing, only different” (Burkard)
- “A joint collaboration of a unique and stressful group of people” (Dimitrijevic on colleagues Alsamri, Joh, Purcell, George and Zeng).
- “uh oh”---Waafa Kaf

# More quotes

- “We’ll give testers some advice and then work out what’s going on later” (Lightfoot).
- It’s not that parents don’t believe the audiologist, they are just skeptical”..Van Dun.
- “Being Mormons we take an ultra-conservative approach” (McPherson)
- “Thresholds of independent components, a bit of a dark art...” (Bell)
- “We use only a few data points, a latency, an amplitude, to try to figure out what the brain is doing.(Ozdamar).

