Palm Rooms 1-5 and Palm Lawn

CE Workshop 09: Cast Aside Traditional Notions of Statistical Significance, and Focus Instead on Characterizing the Magnitude of Effects that are Clinically or Scientifically Relevant

Presenter: Robert Ploutz-Snyder

7:20 - 8:50am
Friday, 3rd February, 2023
Town & Country Ballroom B

Abstract & Learning Objectives:
There is an ongoing debate among statisticians and discipline scientists about the consequences of our persistent, dogmatic reliance on evaluating all statistical results as meaningful if and only if "p<0.05," regardless of context. This was never the intended goal of Ronald Fisher, nevertheless scientists have adopted it as a convenience, and the decades long dependence on "p<0.05" has had important negative consequences. In this presentation, I review common misconceptions about interpreting p-values, why we should consider de-emphasizing p-values, and why scientists should rely more on practical, clinical, or scientifically meaningful differences over arbitrary cut-offs. I will present several different metrics for evaluating and reporting effect magnitude, and whether or not data support the null vs. alternative hypothesis, under the frequentist paradigm, how Bayesian methods can augment or replace frequentist analyses, and a few options that help to clarify how important a finding may be. Throughout this talk, I advocate that discipline scientists take charge of sharing scientific results that are not based merely on arbitrary p-value cutoffs and other default logic, but instead based on their content expertise, in light of all of the specific relevant aspects of experimental design and experimental data, balancing the consequences of Type I vs Type II errors appropriately, and focusing on characterizing effects, rather than dichotomizing research into only two categories of importance (significant vs. not).

Upon conclusion of this course, learners will be able to:
1. Discuss what p-values mean and how they are commonly misinterpreted.
2. Explain the leading arguments promoted by the American Statistical Association with regard to why science should carefully reconsider if and how p-values should continue to dominate our decisions about what research should be published, and how scientists should be evaluating its worth.
3. Apply new practices in how to evaluate and publish their own research, as well as how to evaluate research appearing in peer-reviewed journals, whether as consumers, reviewers, or editors.

CE Workshop 10: Advances in Event-Related Potential Methods for Assessing Clinical Populations

Presenter: Steven J. Luck

7:20 - 8:50am
Friday, 3rd February, 2023
Pacific Ballroom A

Abstract & Learning Objectives:
Event-related potentials (ERPs) have been used to examine perceptual, cognitive, motor, and affective processes for over 50 years. Although newer techniques provide greater neuroanatomical specificity, the excellent temporal resolution and ease of acquisition of ERPs continue to be highly valuable. In addition, continued methodological refinements have made it possible to answer progressively more sophisticated questions using ERPs. In this presentation, I will describe several key methodological improvements that are now in widespread use or are on the verge of becoming widely used. This will include improved recording methods, such as innovations in electrodes that allow both fast and low-noise EEG acquisition. It will also include EEG preprocessing methods that minimize artifacts and increase the signal-to-noise ratio of the ERPs. Finally, it will include multivariate pattern analysis methods that can be used to "decode" what a participant perceives and stores in working memory. Together, these new methods have dramatically increased the information that

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can be obtained about dysfunctional brain activity in clinical populations.

Upon conclusion of this course, learners will be able to:

1. Evaluate and critically assess ERP studies of clinical populations that were published over the last decade, making use of advanced recording and analysis methods that are now widely used
2. Evaluate and critically assess ERP studies of clinical populations that have been published recently or will be published in the near future that take advantage of state-of-the-art recording and analysis methods, such as dry electrodes and multivariate pattern analysis
3. Integrate recent and emerging research findings into your research or clinical practice

5 min. break

8:55 - 9:00am
Friday, 3rd February, 2023

Plenary D: (Birch Memorial Lecture) Networking towards a Global Neuropsychology: An Invitation to Action

Presenter: Deborah Koltai

9:00 - 10:00am
Friday, 3rd February, 2023
Pacific Ballroom A

Abstract & Learning Objectives:
This lecture will review the progress that we have made in becoming a global field of clinical practice and research and the challenges that await us to consider ourselves a field with worldwide reach and utility. We will inventory the spread of neuropsychology over the last decades, and highlight geographical areas where we are most under-represented. The challenges of supporting the training and subsequent work of neuropsychologists in developing countries will be discussed, as well as the complexity of instrumentation validation and normative standard development in settings with substantial linguistic and ethnic diversity. Importantly, we will explore avenues that each

participant can consider leaning into to participate effectively in the development of a global neuropsychology.

Upon conclusion of this course, learners will be able to:

1. Describe what we know of neuropsychology clinical practice, research, and teaching in Africa.
2. Assess the challenges of developing neuropsychology as a field that are unique to Africa.
3. Identify multiple ways that they can support the global development of neuropsychology, crossing topics that include cultural humility, instrument development and validation, shared resources, and mentoring.

Coffee Break

10:00 - 10:15am
Friday, 3rd February, 2023
Exhibit Hall - Town & Country Ballroom A

Invited Symposium 2: The Need for a Highly Individualized Approach to Brain Mapping: Neuroanatomical, Lifespan and Cultural-Language Considerations

Chair: David S. Sabsevitz
Presenters: Madison Berl, Monika Połczyńska

10:15 - 11:40am
Friday, 3rd February, 2023
Pacific Ballroom A

Abstract & Learning Objectives:
Brain mapping is critical in reducing risk for cognitive morbidity in epilepsy and brain tumor surgery. Mapping using functional MRI, and extra- and intraoperative electrical stimulation, requires a high level of expertise in functional neuroanatomy but also an understanding of individual patient characteristics that can impact mapping results and post-operative outcome. Patients can vary considerably with respect to