

Study Set 1

- (1) Define the following: *sink, source, dipole, polarity inversion*
- (2) Defend the following statement: "Surface recordings alone do not provide unambiguous answers about the number, location, and orientation of sources contributing to a given surface potential."
- (3) Defend the following statement: "The polarity of a surface potential conveys no information about its neurophysiological basis."
- (4) What currents directly generate the EEG? What currents directly generate the MEG? What is the relationship between the EEG and MEG? Why is it said that the MEG sees less than the EEG but sees it somewhat more clearly? Under what circumstances might you opt to record MEG instead of EEG and vice versa? What criteria must be fulfilled for an ERP to be recordable at the scalp? What neural activity do scalp-recorded ERPs primarily reflect?
- (5) Jason is putting together an ERP lab. He has a limited budget and has decided to skimp on the amplifiers, as each knob adds to the cost. He has decided to forgo the low and high frequency knobs by choosing one built-in bandpass setting for each for all the amplifiers. In the next ten years, he plans to run only cognitive ERP experiments. What would be the bandpass of his amplifiers? What would be the consequence of this decision if a colleague came by and asked that he help him with a study of the auditory brain stem response in infants? Or, to a colleague who wanted to study lie detection using the galvanic skin response? What consequence would his choice of bandpass have on how often he sampled his analog data for storage, measurement, etc.?