NEUR/PSYC 330 - Post EEG Lab Survey

1.	Which	ı lab sed	tion are	you in?		Monday	/	′ We	ednesday				
2.	What	equipm	ent did	your gro	oup use t	today?		Individua	al Electro	des	/	Caps	
3.	What	was you	ır role ir	n today's	s lab? Ch	neck all th	at apı	oly.					
	I	Participa	ant	Se	et up equ	uipment	_	Run	compute	r _	Ju	ıst observe	
4.	How	difficult	was it to	set up	the elec	trodes foi	r the E	EEG proc	edure?				
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Ve	ry Easy					Neutral				,	Very Di	ifficult	
5.	How	How difficult was it to clean up the electrodes after the EEG procedure?											
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Ve	ry Easy					Neutral				,	Very Di	ifficult	
6.	Do yo	u have a	any com	ments a	bout the	e set-up a	nd cle	eanup pr	ocesses?				
7.	How	comfort	able do	you thin	k the se	t-up you ı	used t	oday is f	or partici	pants?	ı		
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Very U	ncomfo	rtable				Neutral				Ver	y Com	fortable	
8.	How p	orofessi	onal do	you feel	the set-	up you us	sed to	day is?					
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Very U	nprofessional No change										ery Pro	fessional	

9. Do you have any additional comments about the EEG equipment that you would like to share?

NEUR/PSYC 330 – Final Post EEG Lab Survey

1.	What equipment did your group use today?	Individual Electrodes	Caps
2.	What equipment do you personally prefer?	Individual Electrodes	Caps
3.	What equipment do you think is more comfortable for participants specifically?	Individual Electrodes	Caps
4.	What equipment do you think is easier for researcher specifically?	Individual Electrodes	Caps
5.	What equipment do you think can be set up quicker?	Individual Electrodes	Caps
6.	What equipment do you think can be cleaned up quicker?	Individual Electrodes	Caps
7.	What equipment do you think is more professional?	Individual Electrodes	Caps

8. Do you have any additional comments about EEG equipment that you would like to share?

Researcher Survey

1. What	What equipment do you prefer? Individual Electrodes / Caps											
2. How c	omforta	ble/unc	omforta	ble do y	ou think	using e	ach set-	up is for	particip	ants?		
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very Ur	ncomfort	table			N	eutral				Very Co	omfortable	
3. How d	lifficult d	lo you th	nink sett	ing up is	s?							
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Ve	ery Easy				N	eutral				Very	Difficult	
4. How d	lifficult d	lo vou th	nink clea	ıning un	is?							
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
·	ry Easy	- 4	-5	-2		eutral	1	2	3		Difficult	
Ve	ily Lasy				IV	Cutiai				very	Difficult	
5. How p	rofessio	nal do y	ou feel (each set	-up is?							
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very Unp	orofessio	onal			Ne	eutral			Very Professional			

6. Do you have any additional comments about EEG equipment that you would like to share?

Participant Survey

1. Hov	v comfor	table or	uncomf	ortable	did you	feel duri	ng the E	EG set-	up proc	ess?		
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very	Uncomfo	ortable				Neutral				Very	Comfortabl	e
2. Hov	v comfor	table or	uncomf	ortable	did you	feel onc	e the eq	uipmen	t had be	en set u	p?	
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very	Uncomfo	ortable				Neutral				Very	Comfortabl	e
3. Hov	v comfor	table or	uncomf	ortable	did you	feel duri	ng the E	EG clea	nup pro	cess?		
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very	Uncomfo	ortable				Neutral				Very	Comfortabl	e
4. Do y	ou feel t	hat the	EEG equ	ıipment	made it	more o	r less dif	ficult to	perforr	n the tas	sks?	
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Mud	ch Less D	ifficult				Neutral				Much M	ore Difficu	lt
5. Hov	v profess	ional do	you thii	nk this E	EG equi	pment s	et-up fe	lt?				
Electrodes	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Caps	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very U	Inprofess	sional			ı	Neutral				Very	Profession	al
6. Do y	ou have	any add	litional d	commen	nts about	t the EE0	3 equipr	nent tha	at you w	ould like	e to share?	

NEUR/PSYC 330 – Prior to Initial EEG Lab

1		How well do you understand the concept of brain activity as electrical voltage at the scalp?												
		0	1	2	3	4	5	6	7	8	9	10		
No u	nde	erstandi	ng							Co	mplete	Understanding		
2	·-	How we	ell do yo	u under	stand th	e conce	pt of no	n-brain a	activity a	s electri	cal volta	ge at the scalp?		
		0	1	2	3	4	5	6	7	8	9	10		
No u	nde	erstandi	ng							Co	mplete	Understanding		
3	.	How co	mfortab	ole are yo	ou with	using th	e Power	Lab/Lab	Chart co	mbinatio	on for EE	G recordings?		
		-5	-4	-3	-2	-1	0	1	2	3	4	5		
Very	Un	comfort	table			N	eutral				Very Co	omfortable		

NEUR/PSYC 330 – After the Initial EEG Lab

	1.	L. How well do you understand the concept of brain activity as electrical voltage at the scalp?												
		0	1	2	3	4	5	6	7	8	9	10		
No	und	erstand	ing								Complete	Understanding		
	2.	Please	indicate	how yo	u feel th	is lab inf	fluenced	your ur	nderstan	ding:				
		-5	-4	-3	-2	-1	0	1	2	3	4	5		
Unc	lers	tand it r	much les	SS		No	change				Understa	and it much more		
	3.	3. How well do you understand the concept of non-brain activity as electrical voltage at the scalp?												
		0	1	2	3	4	5	6	7	8	9	10		
No	und	erstand	ing								Complete	Understanding		
	4. Please indicate how you feel this lab influenced your understanding:													
		-5	-4	-3	-2	-1	0	1	2	3	4	5		
Unc	lers	tand it r	much les	SS		No	change				Understa	and it much more		
	5.	How co	omfortal	ble are y	ou with	using th	e Power	Lab/Lab	Chart co	mbina	ition for E	EG recordings?		
		-5	-4	-3	-2	-1	0	1	2	3	4	5		
Ver	y Ur	ncomfor	rtable			Ne	eutral				Very C	omfortable		
	6.	Please	indicate	how yo	u feel th	is lab inf	fluenced	your co	mfort le	vel:				
		-5	-4	-3	-2	-1	0	1	2	3	4	5		
Mu	ch le	ess com	fortable			No	change				Much mo	ore comfortable		
Any	' sug	gestion	ıs/comm	nents/co	ncerns a	bout the	e lab tha	t you wo	ould like	to sha	ire?			

	1. How well do you understand the concept of brain activity as electrical voltage at the scalp?											
		0	1	2	3	4	5	6	7	8	9	10
No	und	erstandi	ing							Co	mplete l	Jnderstanding Section
	2. How well do you understand the concept of brain waves in response to language processing?											
		0	1	2	3	4	5	6	7	8	9	10

NEUR/PSYC 330 – Prior to Language EEG Lab

No understanding

3. How comfortable are you with using the PowerLab/LabChart combination for EEG recordings?

-5 -4 -3 -2 -1 0 1 2 3 4 5

Very Uncomfortable Neutral Very Comfortable

NEUR/PSYC 330 – After the Language EEG Lab

1.	. How well do you understand the concept of brain activity as electrical voltage at the scalp?											
	0	1	2	3	4	5	6	7	8	9	10	
No un	derstand	ding								Comple	te Understan	ding
2.	Please	indicat	e how y	ou feel	this lab i	nfluenc	ed your	understa	anding:			
	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Under	stand it	much le	ess		N	o chang	e			Under	stand it much	more
3.	How v	vell do y	ou und	erstand	the con	cept of b	orain wa	ves in re	sponse	to langu	age processir	ıg?
	0	1	2	3	4	5	6	7	8	9	10	
No un	derstand	ding								Comple	te Understan	ding
4.	Please	indicat	e how y	ou feel	this lab i	influenc	ed your	understa	anding:			
	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Under	stand it	much le	ess		N	o chang	e			Under	stand it much	more
5.	How c	omforta	able are	you wit	h using t	the Pow	erLab/La	abChart	combin	ation for	EEG recordir	ıgs?
	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Very U	ncomfo	rtable				Neutral				Very	Comfortable	!
6.	Please	e indicat	e how y	ou feel	this lab i	nfluenc	ed your	comfort	level:			
	-5	-4	-3	-2	-1	0	1	2	3	4	5	
Much	less con	nfortable	e		N	o change	e			Much	more comfort	table
Any su	ggestio	ns/comr	ments/c	oncerns	about t	he lab t	hat you	would lil	ke to sh	are?		

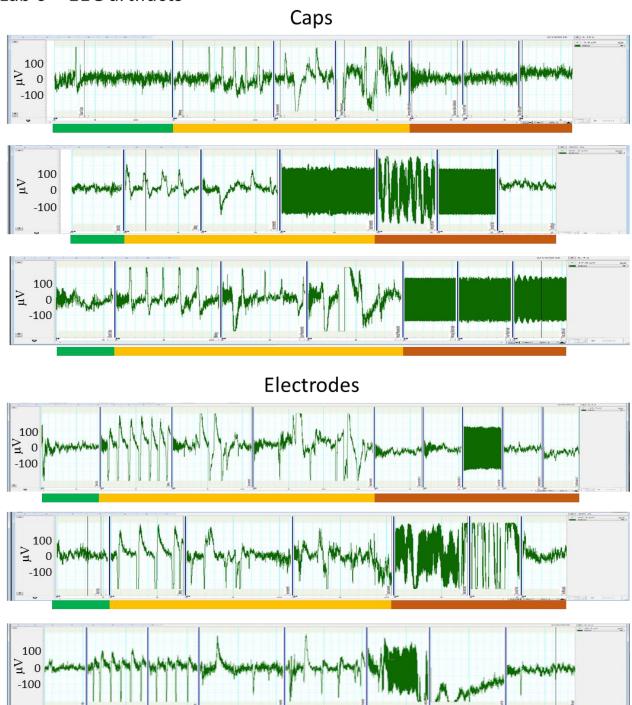
NEUR/PSYC 330 – Prior to Emotion ERP Lab

	1.	How w	ell do yo	u under	stand th	ne conce	pt of bra	ain activi	ty as ele	ctrical v	oltage a	t the scalp?
		0	1	2	3	4	5	6	7	8	9	10
No	und	lerstand	ing							Co	omplete	Understanding
	2.	How w	ell do yo	u under	stand th	ne conce	pt of bra	ain respo	nses sp	ecific to	distinct	types of stimuli?
		0	1	2	3	4	5	6	7	8	9	10
No	und	lerstand	ing							Co	omplete	Understanding
	3.	How co		ole are y	ou with	using th	e Power	Lab/Lab	Chart/St	imTrack	er comb	ination for brain
		-5	-4	-3	-2	-1	0	1	2	3	4	5
Ve	ry U	ncomfor	table			N	eutral				Very C	omfortable

NEUR/PSYC 330 – After the Emotion ERP Lab

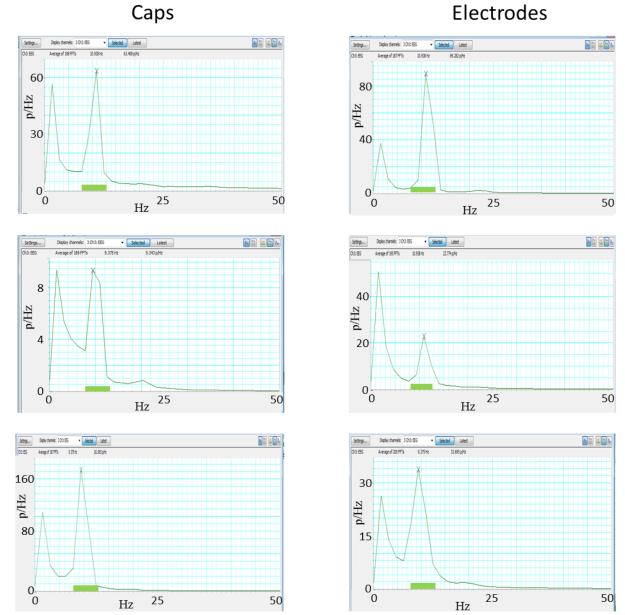
1.	1. How well do you understand the concept of brain activity as electrical voltage at the scalp?												
	0	1	2	3	4	5	6	7	8	9	10		
No uno	derstand	ling							(Complete	Understanding		
2.	Please	indicate	how yo	u feel th	is lab in	fluenced	d your ui	nderstar	nding:				
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Unders	stand it i	much le:	ss		No	change				Understa	and it much more		
3.	How w	ell do yo	ou undei	rstand th	ne conce	ept of br	ain resp	onses sp	ecific to	o distinct	types of stimuli?		
	0	1	2	3	4	5	6	7	8	9	10		
No uno	derstand	ling							(Complete	Understanding		
4.	. Please indicate how you feel this lab influenced your understanding:												
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Unders	stand it i	much le	SS		No	change				Understa	and it much more		
5.	How co		ble are y	ou with	using th	ne Powei	rLab/Lab	Chart/S	timTrac	cker comb	oination for ERP		
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Very U	ncomfo	rtable			N	leutral				Very C	omfortable		
6.	Please	indicate	e how yo	u feel th	is lab in	fluenced	d your co	omfort le	evel:				
	-5	-4	-3	-2	-1	0	1	2	3	4	5		
Much l	ess com	fortable	2		No	change				Much mo	ore comfortable		
Any su	ggestion	ns/comm	nents/co	ncerns a	about th	e lab tha	at you w	ould like	to sha	re?			

Lab 6 - EEG artifacts



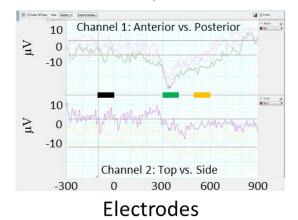
Supplementary Figure 1: Screenshots of the recorded data for the initial EEG training lab across six lab student groups, separated by recording method. The horizontal axis is time in seconds, which varied in length for the different groups. The vertical blue bars indicate changes between different sections of the recording. The horizontal color bars depict the different components of the assignments. Green is for 'clean data' and the signal is meant to be within +/- 60 μ V. Orange is for 'participant artifacts' and is meant to include transient spikes above or below 100 μ V. Red is for 'instrument problems' and is meant to include sustained thick recordings or large scale oscillations above and below 100 μ V.

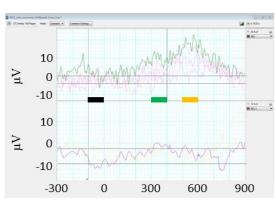
Lab 9 – EEG Alpha Waves

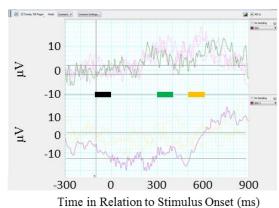


Supplementary Figure 2: Screenshots of the FFT spectrum analysis of a single experimental condition for the FFT analysis lab across six lab student groups, separated by recording method. The green line shows the power density as a function of frequency. The green rectangles near the x-axis indicate the possible range of alpha waves (8-13 Hz). The cursor (x) indicates the observed peak frequency in the alpha range on a group-by-group basis. The left-most peak is an analysis artefact based on a combination of 1/f biological noise and digital high-pass filtering.

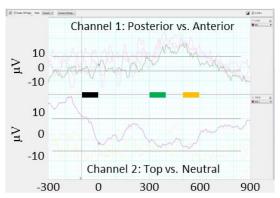
Lab 10 – ERPs P300 Caps

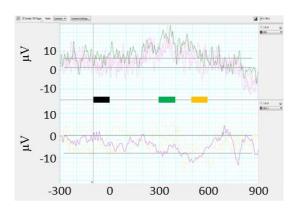


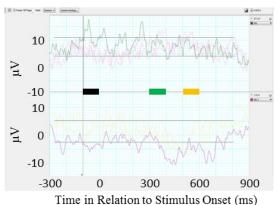




Electrodes (cont.)







Supplementary Figure 3: Screenshots of the ERP Scope analysis of a single experimental condition for the ERP analysis lab across six lab student groups, separated by recording method. The jagged lines show the ERP averaged across trials without artifacts as a function of time for channel 1 (top row) and channel 2 (bottom row). The different colored lines are for the four different blocks of trials with a single block highlighted. The straight horizontal lines show the bounds of the observed baseline level of activation. Valid ERPs would be consistently above or below these bounds for all blocks. The rectangles in the middle demonstrate the different time regions for analysis purposes. The black section is baseline (100 msec before stimulus onset until stimulus onset), the green section is the P300 region (from 300 to 400 msec post stimulus), and the orange section is a comparison region (from 500 to 600 msec post stimulus).