

Full Dataset

Differences in Microbiota* Site_General

Shannon

Random effects:

Formula: ~1 | MouseID
(Intercept) Residual

StdDev: 0.45863 0.7784938

Fixed effects: shannon ~ Sequencing_Run + Sex + Type + Microbiota *
Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.023492	0.14001777	181	28.735578	0.0000
Sequencing_Run1	0.276826	0.12898906	181	2.146121	0.0332
Sequencing_Run2	-0.246880	0.13641552	181	-1.809764	0.0720
Sex1	-0.154955	0.13802893	15	-1.122628	0.2792
Type1	-0.404185	0.06315725	181	-6.399668	0.0000
Microbiota1	0.441448	0.12126926	15	3.640228	0.0024
Site_General1	0.098634	0.06123548	181	1.610731	0.1090
Microbiota1:Site_General1	0.150227	0.05466987	181	2.747894	0.0066

Observed_OTUs

Random effects:

Formula: ~1 | MouseID
(Intercept) Residual

StdDev: 17.2816 43.67883

Fixed effects: observed_otus ~ Sequencing_Run + Sex + Type + Microbiota *
Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	164.91611	5.930818	181	27.806638	0.0000
Sequencing_Run1	9.55628	6.080884	181	1.571528	0.1178
Sequencing_Run2	-1.34594	6.563570	181	-0.205062	0.8378
Sex1	-2.60247	5.785256	15	-0.449844	0.6593
Type1	-9.40300	3.536412	181	-2.658909	0.0085
Microbiota1	20.33345	5.105612	15	3.982568	0.0012
Site_General1	-6.21665	3.429433	181	-1.812735	0.0715
Microbiota1:Site_General1	23.54026	3.066018	181	7.677795	0.0000

Chao1

Random effects:

Formula: ~1 | MouseID

(Intercept) Residual

StdDev: 23.2327 52.2999

Fixed effects: chao1 ~ Sequencing_Run + Sex + Type + Microbiota * Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	191.14728	7.653910	181	24.973808	0.0000
Sequencing_Run1	10.37915	7.601402	181	1.365425	0.1738
Sequencing_Run2	11.36404	8.159565	181	1.392726	0.1654
Sex1	-2.64178	7.491412	15	-0.352641	0.7293
Type1	0.02632	4.237174	181	0.006211	0.9951
Microbiota1	21.79293	6.602008	15	3.300955	0.0048
Site_General1	-8.59690	4.108760	181	-2.092335	0.0378
Microbiota1:Site_General1	24.97399	3.671677	181	6.801795	0.0000

Pielou E

Random effects:

Formula: ~1 | MouseID

(Intercept) Residual

StdDev: 0.05606691 0.09374986

Fixed effects: pielou_e ~ Sequencing_Run + Sex + Type + Microbiota * Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.5502095	0.017061876	181	32.24789	0.0000
Sequencing_Run1	0.0289526	0.015658990	181	1.84894	0.0661
Sequencing_Run2	-0.0366302	0.016546974	181	-2.21371	0.0281
Sex1	-0.0208950	0.016825066	15	-1.24190	0.2333
Type1	-0.0494430	0.007606165	181	-6.50038	0.0000
Microbiota1	0.0440918	0.014780011	15	2.98321	0.0093
Site_General1	0.0190836	0.007374678	181	2.58772	0.0104
Microbiota1:Site_General1	0.0030605	0.006583692	181	0.46485	0.6426

Differences in Microbiota* Site

Shannon

Random effects:

Formula: ~1 | MouseID
(Intercept) Residual

StdDev: 0.4532577 0.7593602

Fixed effects: shannon ~ Sequencing_Run + Sex + Type + Microbiota * Site

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.451544	0.2971240	174	14.982107	0.0000
Sequencing_Run2014_Sept	-0.664722	0.1627714	174	-4.083777	0.0001
Sequencing_Run2015_Sept	-0.322666	0.3206464	14	-1.006297	0.3313
SexMale	0.306311	0.2721456	14	1.125540	0.2793
TypeMucosal	0.879291	0.1255400	174	7.004069	0.0000
MicrobiotaHumanized	-1.365668	0.3312456	14	-4.122824	0.0010
SiteDistal_Colon	0.207460	0.2620829	174	0.791583	0.4297
SiteDuodenum	-0.302045	0.2649148	174	-1.140160	0.2558
SiteIleum	-0.798201	0.2643747	174	-3.019204	0.0029
SiteJejunum	-0.485672	0.2610772	174	-1.860263	0.0645
SiteProximal_Colon	-0.138769	0.2531201	174	-0.548233	0.5842
MicrobiotaHumanized:SiteDistal_Colon	0.382741	0.3667992	174	1.043462	0.2982
MicrobiotaHumanized:SiteDuodenum	0.987541	0.3707910	174	2.663336	0.0085
MicrobiotaHumanized:SiteIleum	0.935633	0.3667914	174	2.550858	0.0116
MicrobiotaHumanized:SiteJejunum	0.495522	0.3609394	174	1.372868	0.1716
MicrobiotaHumanized:SiteProximal_Colon	0.207753	0.3608919	174	0.575665	0.5656

OTUs

Random effects:

Formula: ~1 | MouseID

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      (Intercept) Residual
StdDev:      16.76455 43.84149

Fixed effects: observed_otus ~ Sequencing_Run + Sex + Type + Microbiota *
Site

              Value Std.Error   DF   t-value p-
value
(Intercept)      203.67597 14.296879 174 14.246184
0.0000
Sequencing_Run2014_Sept      -15.09532   9.315727 174 -1.620413
0.1070
Sequencing_Run2015_Sept      -18.04647 13.812183 14 -1.306562
0.2124
SexMale              5.12894 11.362604 14  0.451388
0.6586
TypeMucosal         21.01537  7.228535 174  2.907279
0.0041
MicrobiotaHumanized    -103.50000 16.613837 14 -6.229747
0.0000
SiteDistal_Colon       0.03465 15.123708 174  0.002291
0.9982
SiteDuodenum         -34.07625 15.282735 174 -2.229722
0.0270
SiteIleum            -33.75587 15.256798 174 -2.212513
0.0282
SiteJejunum          -47.42861 15.065616 174 -3.148136
0.0019
SiteProximal_Colon    -7.33333 14.613830 174 -0.501808
0.6164
MicrobiotaHumanized:SiteDistal_Colon      30.60716 21.169072 174  1.445843
0.1500
MicrobiotaHumanized:SiteDuodenum          103.20504 21.385255 174  4.825991
0.0000
MicrobiotaHumanized:SiteIleum             116.53259 21.167892 174  5.505158
0.0000
MicrobiotaHumanized:SiteJejunum           110.51853 20.836171 174  5.304167
0.0000
MicrobiotaHumanized:SiteProximal_Colon     18.84398 20.832493 174  0.904547
0.3670
Correlation:

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Chao1

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Random effects:
Formula: ~1 | MouseID
      (Intercept) Residual

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StdDev: 22.86343 52.67042

Fixed effects: chao1 ~ Sequencing_Run + Sex + Type + Microbiota * Site
Value Std.Error DF t-value p-

value				
(Intercept)	239.74829	17.919395	174	13.379262
0.0000				
Sequencing_Run2014_Sept	-2.15525	11.223395	174	-0.192032
0.8479				
Sequencing_Run2015_Sept	-32.19827	17.874546	14	-1.801347
0.0932				
SexMale	5.20463	14.849220	14	0.350499
0.7312				
TypeMucosal	1.68957	8.691717	174	0.194389
0.8461				
MicrobiotaHumanized	-106.30716	20.601093	14	-5.160268
0.0001				
SiteDistal_Colon	1.31280	18.172277	174	0.072242
0.9425				
SiteDuodenum	-30.92886	18.365034	174	-1.684117
0.0940				
SiteIleum	-28.40824	18.331858	174	-1.549665
0.1230				
SiteJejunum	-47.26677	18.102479	174	-2.611066
0.0098				
SiteProximal_Colon	-6.88493	17.556806	174	-0.392152
0.6954				
MicrobiotaHumanized:SiteDistal_Colon	22.63251	25.435185	174	0.889811
0.3748				
MicrobiotaHumanized:SiteDuodenum	101.45537	25.700151	174	3.947656
0.0001				
MicrobiotaHumanized:SiteIleum	121.98625	25.433982	174	4.796192
0.0000				
MicrobiotaHumanized:SiteJejunum	114.55869	25.033197	174	4.576271
0.0000				
MicrobiotaHumanized:SiteProximal_Colon	17.31636	25.029097	174	0.691849
0.4900				

Pielou

Random effects:

Formula: ~1 | MouseID

(Intercept) Residual

StdDev: 0.05618543 0.09034422

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Fixed effects: pielou_e ~ Sequencing_Run + Sex + Type + Microbiota * Site
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	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.5752477	0.03612426	174	15.924139	0.0000
Sequencing_Run2014_Sept	-0.0820637	0.01937773	174	-4.234951	0.0000
Sequencing_Run2015_Sept	-0.0231199	0.03935459	14	-0.587477	0.5662
SexMale	0.0413497	0.03348014	14	1.235051	0.2371
TypeMucosal	0.1070965	0.01493894	174	7.168953	0.0000
MicrobiotaHumanized	-0.1064144	0.04010498	14	-2.653397	0.0189
SiteDistal_Colon	0.0287265	0.03118222	174	0.921245	0.3582
SiteDuodenum	-0.0183093	0.03151982	174	-0.580881	0.5621
SiteIleum	-0.0865581	0.03145478	174	-2.751828	0.0066
SiteJejunum	-0.0327431	0.03106259	174	-1.054099	0.2933
SiteProximal_Colon	-0.0139896	0.03011474	174	-0.464544	0.6428
MicrobiotaHumanized:SiteDistal_Colon	0.0287926	0.04364084	174	0.659763	0.5103
MicrobiotaHumanized:SiteDuodenum	0.0613370	0.04411806	174	1.390293	0.1662
MicrobiotaHumanized:SiteIleum	0.0404388	0.04364006	174	0.926645	0.3554
MicrobiotaHumanized:SiteJejunum	-0.0190114	0.04294285	174	-0.442715	0.6585
MicrobiotaHumanized:SiteProximal_Colon	0.0119585	0.04293736	174	0.278511	0.7810

Microbiota* Type

Shannon

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Fixed effects: shannon ~ Sequencing_Run + Sex + Site + Microbiota * Type
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	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.636547	0.2960312	178	15.662359	0.0000
Sequencing_Run2014_Sept	-0.663055	0.1656579	178	-4.002556	0.0001
Sequencing_Run2015_Sept	-0.318677	0.3230189	14	-0.986559	0.3406
SexMale	0.303173	0.2739986	14	1.106475	0.2872

SiteProximal_Colon	-0.431432	0.1954125	178	-2.207800	0.0285
SiteCecum	-0.400455	0.1948691	178	-2.054996	0.0413
SiteIleum	-0.722783	0.2142748	178	-3.373158	0.0009
SiteJejunum	-0.637948	0.2115498	178	-3.015594	0.0029
SiteDuodenum	-0.211325	0.2129594	178	-0.992325	0.3224
MicrobiotaHumanized	-0.937586	0.2620216	14	-3.578278	0.0030
TypeMucosal	0.822716	0.1661999	178	4.950160	0.0000
MicrobiotaHumanized:TypeMucosal	0.121025	0.2180486	178	0.555036	0.5796

OTUs

Fixed effects: pielou_e ~ Sequencing_Run + Sex + Site + Microbiota * Type					
	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.6159595	0.03560794	178	17.298379	0.0000
Sequencing_Run2014_Sept	-0.0826440	0.01931094	178	-4.279648	0.0000
Sequencing_Run2015_Sept	-0.0241875	0.03935446	14	-0.614606	0.5487
SexMale	0.0411537	0.03349570	14	1.228627	0.2395
SiteProximal_Colon	-0.0511177	0.02276048	178	-2.245899	0.0259
SiteCecum	-0.0433397	0.02269747	178	-1.909450	0.0578
SiteIleum	-0.1094104	0.02496088	178	-4.383273	0.0000
SiteJejunum	-0.0865233	0.02464413	178	-3.510909	0.0006
SiteDuodenum	-0.0317339	0.02480860	178	-1.279150	0.2025
MicrobiotaHumanized	-0.1001921	0.03178393	14	-3.152287	0.0071
TypeMucosal	0.0934991	0.01935970	178	4.829571	0.0000
MicrobiotaHumanized:TypeMucosal	0.0276359	0.02539809	178	1.088109	0.2780

Chao1

Fixed effects: chao1 ~ Sequencing_Run + Sex + Site + Microbiota * Type					
	Value	Std.Error	DF	t-value	p-value
(Intercept)	214.28628	18.68000	178	11.471429	0.0000
Sequencing_Run2014_Sept	-1.16226	12.34880	178	-0.094120	0.9251
Sequencing_Run2015_Sept	-29.86969	18.54464	14	-1.610691	0.1296
SexMale	4.80059	15.29038	14	0.313961	0.7582
SiteProximal_Colon	-10.54835	14.67333	178	-0.718880	0.4732
SiteCecum	-12.74106	14.63102	178	-0.870826	0.3850
SiteIleum	20.94776	16.07050	178	1.303491	0.1941
SiteJejunum	-1.36936	15.86263	178	-0.086326	0.9313
SiteDuodenum	7.87266	15.96680	178	0.493064	0.6226
MicrobiotaHumanized	-31.73684	15.58086	14	-2.036912	0.0610
TypeMucosal	15.62500	12.47016	178	1.252991	0.2119
MicrobiotaHumanized:TypeMucosal	-26.73624	16.36780	178	-1.633466	0.1041

Pielou's E

Random effects:
Formula: ~1 | MouseID
(Intercept) Residual
StdDev: 0.05624965 0.09011229

Fixed effects: pielou_e ~ Sequencing_Run + Sex + Site + Microbiota * Type

	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.5726199	0.03398333	178	16.850020	0.0000
Sequencing_Run2014_Sept	-0.0826440	0.01931094	178	-4.279648	0.0000
Sequencing_Run2015_Sept	-0.0241875	0.03935446	14	-0.614606	0.5487
SexMale	0.0411537	0.03349570	14	1.228627	0.2395
SiteDistal_Colon	0.0433397	0.02269747	178	1.909450	0.0578
SiteDuodenum	0.0116058	0.02239052	178	0.518334	0.6049
SiteIleum	-0.0660707	0.02232427	178	-2.959591	0.0035
SiteJejunum	-0.0431836	0.02194308	178	-1.967983	0.0506
SiteProximal_Colon	-0.0077781	0.02141098	178	-0.363274	0.7168
MicrobiotaHumanized	-0.1001921	0.03178393	14	-3.152287	0.0071
TypeMucosal	0.0934991	0.01935970	178	4.829571	0.0000
MicrobiotaHumanized:TypeMucosal	0.0276359	0.02539809	178	1.088109	0.2780

Cedars SPF

Microbiota * Site_General

shannon

Fixed effects: shannon ~ Sequencing_Run + Sex + Type + Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.614837	0.2816762	90	16.383485	0.0000
Sequencing_Run2014_Sept	-0.427850	0.2119257	90	-2.018866	0.0465
Sequencing_Run2015_Sept	0.070869	0.3898668	6	0.181776	0.8617
SexMale	-0.089417	0.3291647	6	-0.271649	0.7950
TypeMucosal	0.712720	0.1661470	90	4.289695	0.0000
Site_GeneralSI	-0.462537	0.1649144	90	-2.804708	0.0062

otus

Fixed effects: observed_otus ~ Sequencing_Run + Sex + Type + Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	183.10551	11.002154	90	16.642696	0.0000
Sequencing_Run2014_Sept	-2.39045	11.427512	90	-0.209184	0.8348

Sequencing_Run2015_Sept	2.07443	13.896044	6	0.149282	0.8862
SexMale	13.18151	11.001999	6	1.198102	0.2761
TypeMucosal	25.53744	9.099814	90	2.806370	0.0061
Site_GeneralSI	-31.09404	9.023168	90	-3.446022	0.0009

chao1

Fixed effects: chao1 ~ Sequencing_Run + Sex + Type + Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	213.46834	14.33145	90	14.895100	0.0000
Sequencing_Run2014_Sept	13.48416	13.88005	90	0.971478	0.3339
Sequencing_Run2015_Sept	-9.11476	18.60971	6	-0.489785	0.6417
SexMale	17.27971	15.05323	6	1.147907	0.2947
TypeMucosal	9.24692	10.99249	90	0.841203	0.4025
Site_GeneralSI	-27.59195	10.90366	90	-2.530522	0.0131

pielou_e

Fixed effects: pielou_e ~ Sequencing_Run + Sex + Type + Site_General

	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.6126518	0.03351622	90	18.279265	0.0000
Sequencing_Run2014_Sept	-0.0542110	0.02442760	90	-2.219253	0.0290
Sequencing_Run2015_Sept	0.0110417	0.04664319	6	0.236726	0.8207
SexMale	-0.0201927	0.03951058	6	-0.511071	0.6276
TypeMucosal	0.0806289	0.01913687	90	4.213276	0.0001
Site_GeneralSI	-0.0404525	0.01899584	90	-2.129546	0.0359

For Type and Site Differences

shannon

Fixed effects: shannon ~ Sequencing_Run + Sex + Type + Site

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.786489	0.3334592	86	14.354050	0.0000
Sequencing_Run2014_Sept	-0.485445	0.2212462	86	-2.194140	0.0309
Sequencing_Run2015_Sept	0.042660	0.3923589	6	0.108728	0.9170
SexMale	-0.096417	0.3312277	6	-0.291090	0.7808
TypeMucosal	0.747025	0.1675288	86	4.459085	0.0000
SiteProximal_Colon	-0.289999	0.2567387	86	-1.129550	0.2618
SiteCecum	-0.151230	0.2567387	86	-0.589044	0.5574
SiteIleum	-0.904394	0.2823100	86	-3.203548	0.0019

SiteJejunum	-0.588247	0.2829162	86	-2.079228	0.0406
SiteDuodenum	-0.407781	0.2848747	86	-1.431440	0.1559

otus

Fixed effects: observed_otus ~ Sequencing_Run + Sex + Type + Site

	Value	Std.Error	DF	t-value	p-value
(Intercept)	183.73414	14.814561	86	12.402266	0.0000
Sequencing_Run2014_Sept	-2.88960	12.137317	86	-0.238075	0.8124
Sequencing_Run2015_Sept	2.14388	13.978620	6	0.153369	0.8831
SexMale	13.04947	11.011940	6	1.185029	0.2808
TypeMucosal	25.74368	9.357797	86	2.751041	0.0072
SiteProximal_Colon	-4.26942	14.396454	86	-0.296560	0.7675
SiteCecum	3.06392	14.396454	86	0.212824	0.8320
SiteIleum	-26.98808	15.787762	86	-1.709430	0.0910
SiteJejunum	-40.37392	15.796627	86	-2.555857	0.0123
SiteDuodenum	-27.12736	15.885801	86	-1.707648	0.0913

chao1

Fixed effects: chao1 ~ Sequencing_Run + Sex + Type + Site

	Value	Std.Error	DF	t-value	p-value
(Intercept)	214.36202	18.68983	86	11.469449	0.0000
Sequencing_Run2014_Sept	12.77435	14.74873	86	0.866132	0.3888
Sequencing_Run2015_Sept	-9.00016	18.70283	6	-0.481219	0.6474
SexMale	17.13239	15.06622	6	1.137140	0.2988
TypeMucosal	9.50781	11.30146	86	0.841291	0.4025
SiteProximal_Colon	-4.32072	17.36405	86	-0.248831	0.8041
SiteCecum	2.56421	17.36405	86	0.147674	0.8829
SiteIleum	-21.44736	19.05936	86	-1.125293	0.2636
SiteJejunum	-39.74045	19.07996	86	-2.082837	0.0402
SiteDuodenum	-23.40661	19.19575	86	-1.219364	0.2260

pielous

Fixed effects: pielou_e ~ Sequencing_Run + Sex + Type + Site

	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.6349896	0.03910095	86	16.239746	0.0000
Sequencing_Run2014_Sept	-0.0614603	0.02516755	86	-2.442047	0.0167
Sequencing_Run2015_Sept	0.0071826	0.04686890	6	0.153248	0.8832
SexMale	-0.0210449	0.03973618	6	-0.529615	0.6154
TypeMucosal	0.0850635	0.01903755	86	4.468198	0.0000
SiteProximal_Colon	-0.0358649	0.02916860	86	-1.229573	0.2222

SiteCecum	-0.0218753	0.02916860	86	-0.749961	0.4553
SiteIleum	-0.1036941	0.03207884	86	-3.232477	0.0017
SiteJejunum	-0.0494506	0.03215078	86	-1.538083	0.1277
SiteDuodenum	-0.0354730	0.03237578	86	-1.095664	0.2763

Humanized Dataset

Site General

shannon

Fixed effects: shannon ~ Sequencing_Run + Sex + Type + Site_General					
	Value	Std.Error	DF	t-value	p-value
(Intercept)	3.0629033	0.3506109	90	8.735905	0.0000
Sequencing_Run2014_Sept	-0.6170179	0.2359160	90	-2.615413	0.0104
Sequencing_Run2015_Sept	-0.6816864	0.4979781	6	-1.368908	0.2201
SexMale	0.7092858	0.4221116	6	1.680327	0.1439
TypeMucosal	0.9075198	0.1925058	90	4.714248	0.0000
Site_GeneralSI	0.0700434	0.1824789	90	0.383844	0.7020

otus

Fixed effects: observed_otus ~ Sequencing_Run + Sex + Type + Site_General					
	Value	Std.Error	DF	t-value	p-value
(Intercept)	128.15588	16.76163	90	7.645789	0.0000
Sequencing_Run2014_Sept	-16.51825	13.18544	90	-1.252764	0.2135
Sequencing_Run2015_Sept	-37.56606	23.27522	6	-1.613994	0.1577
SexMale	-2.82639	19.38423	6	-0.145809	0.8888
TypeMucosal	10.86104	10.78609	90	1.006948	0.3167
Site_GeneralSI	57.70351	10.22904	90	5.641144	0.0000

chao1

Fixed effects: chao1 ~ Sequencing_Run + Sex + Type + Site_General					
	Value	Std.Error	DF	t-value	p-value
(Intercept)	165.59083	21.03733	90	7.871285	0.0000
Sequencing_Run2014_Sept	-8.13526	15.63645	90	-0.520276	0.6041
Sequencing_Run2015_Sept	-54.89282	29.48314	6	-1.861838	0.1119
SexMale	-6.82489	24.73417	6	-0.275929	0.7919
TypeMucosal	-10.51114	12.77765	90	-0.822619	0.4129
Site_GeneralSI	64.20588	12.11540	90	5.299525	0.0000

pielou

```
Fixed effects: pielou_e ~ Sequencing_Run + Sex + Type + Site_General
              Value Std.Error DF   t-value p-value
(Intercept)    0.4438339 0.04061389 90 10.928131 0.0000
Sequencing_Run2014_Sept -0.0788475 0.02920180 90 -2.700091 0.0083
Sequencing_Run2015_Sept -0.0533728 0.05719404 6 -0.933189 0.3867
SexMale         0.1038166 0.04816246 6 2.155550 0.0745
TypeMucosal     0.1186957 0.02385020 90 4.976717 0.0000
Site_GeneralSI  -0.0368116 0.02261183 90 -1.627979 0.1070
```

For Type and Site Differences

shannon

```
Fixed effects: shannon ~ Sequencing_Run + Sex + Type + Site
              Value Std.Error DF   t-value p-value
(Intercept)    3.551963 0.3898301 86 9.111566 0.0000
Sequencing_Run2014_Sept -0.845622 0.2399069 86 -3.524791 0.0007
Sequencing_Run2015_Sept -0.680968 0.4776085 6 -1.425787 0.2038
SexMale         0.709286 0.4043808 6 1.754005 0.1300
TypeMucosal     1.022198 0.1887016 86 5.417008 0.0000
SiteProximal_Colon -0.582669 0.2873716 86 -2.027579 0.0457
SiteCecum       -0.656218 0.2858449 86 -2.295713 0.0241
SiteIleum       -0.567427 0.3144356 86 -1.804589 0.0746
SiteJejunum     -0.686568 0.3059775 86 -2.243851 0.0274
SiteDuodenum    -0.003871 0.3076412 86 -0.012584 0.9900
```

otus

```
Fixed effects: observed_otus ~ Sequencing_Run + Sex + Type + Site
              Value Std.Error DF   t-value p-value
(Intercept)   148.70583 19.98613 86 7.440451 0.0000
Sequencing_Run2014_Sept -24.17238 13.90939 86 -1.737846 0.0858
Sequencing_Run2015_Sept -38.02680 22.64797 6 -1.679038 0.1441
SexMale        -2.82639 18.77762 6 -0.150519 0.8853
TypeMucosal     15.15610 10.97499 86 1.380967 0.1709
SiteProximal_Colon -21.49219 16.73659 86 -1.284144 0.2025
SiteCecum      -32.32663 16.64674 86 -1.941920 0.0554
SiteIleum       47.10417 18.29958 86 2.574057 0.0118
SiteJejunum     28.74617 17.80900 86 1.614138 0.1102
SiteDuodenum    34.02947 17.90481 86 1.900577 0.0607
```

chao1

```
Fixed effects: chao1 ~ Sequencing_Run + Sex + Type + Site
```

	Value	Std.Error	DF	t-value	p-value
(Intercept)	181.48342	24.90554	86	7.286871	0.0000
Sequencing_Run2014_Sept	-13.39316	16.61901	86	-0.805894	0.4225
Sequencing_Run2015_Sept	-55.02675	29.09966	6	-1.890976	0.1075
SexMale	-6.82489	24.33601	6	-0.280444	0.7886
TypeMucosal	-7.30287	13.09566	86	-0.557655	0.5785
SiteProximal_Colon	-16.44746	19.95916	86	-0.824056	0.4122
SiteCecum	-26.08310	19.85247	86	-1.313847	0.1924
SiteIleum	63.39385	21.82970	86	2.904018	0.0047
SiteJejunum	38.71151	21.24364	86	1.822263	0.0719
SiteDuodenum	41.20726	21.35842	86	1.929322	0.0570

pielou

```
Fixed effects: pielou_e ~ Sequencing_Run + Sex + Type + Site
```

	Value	Std.Error	DF	t-value	p-value
(Intercept)	0.4974812	0.04598452	86	10.818448	0.0000
Sequencing_Run2014_Sept	-0.1053090	0.02942092	86	-3.579391	0.0006
Sequencing_Run2015_Sept	-0.0527701	0.05515855	6	-0.956698	0.3757
SexMale	0.1038166	0.04645222	6	2.234911	0.0668
TypeMucosal	0.1316127	0.02315941	86	5.682905	0.0000
SiteProximal_Colon	-0.0678709	0.03528133	86	-1.923705	0.0577
SiteCecum	-0.0669219	0.03509339	86	-1.906965	0.0599
SiteIleum	-0.1187959	0.03859708	86	-3.077846	0.0028
SiteJejunum	-0.1238420	0.03755971	86	-3.297202	0.0014
SiteDuodenum	-0.0274854	0.03776336	86	-0.727832	0.4687