

Web-Based Communication in an Animal Lab, Tissue Bank and Genomic Testing Environment

Research **i**nformation **T**echnology **S**ystems

JOHNS HOPKINS UNIVERSITY, BALTIMORE, MARYLAND

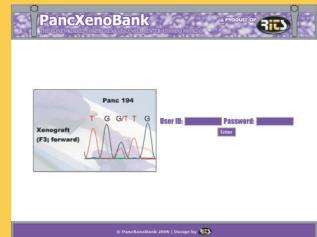
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<https://www.rig.onc.jhmi.edu>

duction:

- increasing number of saved specimens and request for samples meeting particular criteria, and shipment of the aliquots
 - process management of microarray experiments and analyses: chip selection, test requesting, scheduling and payment, experimental results retrieval, and analysis consultation scheduling
 - animal lab systems and studies
 - protocol and SOP lifecycle management and publication on the web
 - clinical trial data collection, flow control, reports, analyses and publication



Use of Flex in an Optimization Process via an algorithm which goes through 3000 permutations to define the best grouping

House	Height Right Element	Height Left Element	Height Long Distance	Left shaft Element	Left shaft Value	Left shaft Element	Left shaft Value	Average	Comments
788	5.83	5.12	5.12	5.21	6.33	5.12	6.33	5.18	
789	5.12	5.21	5.21	5.4	5.75	5.12	5.75	5.18	
793	5.65	5.25	5.25	5.4	5.75	5.65	5.75	5.7	
794	5.25	5.65	5.65	5.4	5.75	5.25	5.75	5.7	
795	7.14	8.14	8.14	8.83	8.83	8.14	8.83	8.07	
797	6.06	6.95	6.95	8	8	6.06	8	7.03	
798	6.06	6.95	6.95	7.75	7.75	6.06	7.75	7.03	
799	5.5	5.12	5.12	6.83	7.75	5.5	7.75	7.2	
800	7.78	8.28	8.28	8.83	8.83	8.83	8.83	8.55	
801	5.25	5.65	5.65	5.4	5.75	5.25	5.75	5.5	
802	7.08	8.08	8.08	8.83	8.83	7.08	8.83	8.08	
804	5.65	6.15	6.15	8	8	5.65	8	7.13	
805	6.15	6.15	6.15	7.75	7.75	6.15	7.75	7.13	
807	7.67	8.67	8.67	8.33	8.33	7.67	8.33	8.19	
808	8	8	8	8.25	8.25	8	8.25	8.17	
809	7.67	8.67	8.67	8.33	8.33	7.67	8.33	8.19	
810	6.99	8.99	8.99	8.83	8.83	6.99	8.83	8.08	
811	6.99	8.99	8.99	8.83	8.83	6.99	8.83	8.08	

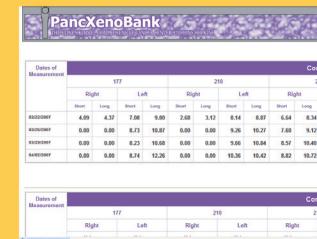
Employee: PHM421_201208					Average	Group	Actions	Group
Group	Household Number	Right Value	Left Value	Average				
A	Household Number	Right Value	Left Value	Average	197			
A	824	275	212	243.5				
A	724	261	265	263				
A	752	260	260	260				
A	262	8	137	127.5				
A	745	267	267	267				
B	Household Number	Right Value	Left Value	Average	187			
B	726	277	222	250				
B	724	218	172	195				
B	743	154	154	154				
B	745	157	157	157				
B	745	32	32	32				
C	Household Number	Right Value	Left Value	Average	184			
C	726	284	245	264.5				
C	724	224	188	206				
C	752	188	188	188				

Cold Fusion facilitating regrouping of subjects and drug assignment

Experiment: FAMC429_061018						
Lane	Lane				AveragingGroup	TimepointsUsed
	Mouse Number	Signle Volume	LRH Volume	Average		
1	1001	0.00	0.00	0.00		
2	1002	0.00	0.00	0.00		
3	1003	0.00	0.00	0.00		
4	1004	0.00	0.00	0.00		
5	1005	0.00	0.00	0.00		
6	1006	0.00	0.00	0.00		
7	1007	0.00	0.00	0.00		
8	1008	0.00	0.00	0.00		
9	1009	0.00	0.00	0.00		
10	1010	0.00	0.00	0.00		
11	1011	0.00	0.00	0.00		
12	1012	0.00	0.00	0.00		
13	1013	0.00	0.00	0.00		
14	1014	0.00	0.00	0.00		
15	1015	0.00	0.00	0.00		
16	1016	0.00	0.00	0.00		
17	1017	0.00	0.00	0.00		
18	1018	0.00	0.00	0.00		
19	1019	0.00	0.00	0.00		
20	1020	0.00	0.00	0.00		
21	1021	0.00	0.00	0.00		
22	1022	0.00	0.00	0.00		
23	1023	0.00	0.00	0.00		
24	1024	0.00	0.00	0.00		
25	1025	0.00	0.00	0.00		
26	1026	0.00	0.00	0.00		
27	1027	0.00	0.00	0.00		
28	1028	0.00	0.00	0.00		
29	1029	0.00	0.00	0.00		
30	1030	0.00	0.00	0.00		
31	1031	0.00	0.00	0.00		
32	1032	0.00	0.00	0.00		
33	1033	0.00	0.00	0.00		
34	1034	0.00	0.00	0.00		
35	1035	0.00	0.00	0.00		
36	1036	0.00	0.00	0.00		
37	1037	0.00	0.00	0.00		
38	1038	0.00	0.00	0.00		
39	1039	0.00	0.00	0.00		
40	1040	0.00	0.00	0.00		
41	1041	0.00	0.00	0.00		
42	1042	0.00	0.00	0.00		
43	1043	0.00	0.00	0.00		
44	1044	0.00	0.00	0.00		
45	1045	0.00	0.00	0.00		
46	1046	0.00	0.00	0.00		
47	1047	0.00	0.00	0.00		
48	1048	0.00	0.00	0.00		
49	1049	0.00	0.00	0.00		
50	1050	0.00	0.00	0.00		
51	1051	0.00	0.00	0.00		
52	1052	0.00	0.00	0.00		
53	1053	0.00	0.00	0.00		
54	1054	0.00	0.00	0.00		
55	1055	0.00	0.00	0.00		
56	1056	0.00	0.00	0.00		
57	1057	0.00	0.00	0.00		
58	1058	0.00	0.00	0.00		
59	1059	0.00	0.00	0.00		
60	1060	0.00	0.00	0.00		
61	1061	0.00	0.00	0.00		
62	1062	0.00	0.00	0.00		
63	1063	0.00	0.00	0.00		
64	1064	0.00	0.00	0.00		
65	1065	0.00	0.00	0.00		
66	1066	0.00	0.00	0.00		
67	1067	0.00	0.00	0.00		
68	1068	0.00	0.00	0.00		
69	1069	0.00	0.00	0.00		
70	1070	0.00	0.00	0.00		
71	1071	0.00	0.00	0.00		
72	1072	0.00	0.00	0.00		
73	1073	0.00	0.00	0.00		
74	1074	0.00	0.00	0.00		
75	1075	0.00	0.00	0.00		
76	1076	0.00	0.00	0.00		
77	1077	0.00	0.00	0.00		
78	1078	0.00	0.00	0.00		
79	1079	0.00	0.00	0.00		
80	1080	0.00	0.00	0.00		
81	1081	0.00	0.00	0.00		
82	1082	0.00	0.00	0.00		
83	1083	0.00	0.00	0.00		
84	1084	0.00	0.00	0.00		
85	1085	0.00	0.00	0.00		
86	1086	0.00	0.00	0.00		
87	1087	0.00	0.00	0.00		
88	1088	0.00	0.00	0.00		
89	1089	0.00	0.00	0.00		
90	1090	0.00	0.00	0.00		
91	1091	0.00	0.00	0.00		
92	1092	0.00	0.00	0.00		
93	1093	0.00	0.00	0.00		
94	1094	0.00	0.00	0.00		
95	1095	0.00	0.00	0.00		
96	1096	0.00	0.00	0.00		
97	1097	0.00	0.00	0.00		
98	1098	0.00	0.00	0.00		
99	1099	0.00	0.00	0.00		
100	1100	0.00	0.00	0.00		
101	1101	0.00	0.00	0.00		
102	1102	0.00	0.00	0.00		
103	1103	0.00	0.00	0.00		
104	1104	0.00	0.00	0.00		
105	1105	0.00	0.00	0.00		
106	1106	0.00	0.00	0.00		
107	1107	0.00	0.00	0.00		
108	1108	0.00	0.00	0.00		
109	1109	0.00	0.00	0.00		
110	1110	0.00	0.00	0.00		
111	1111	0.00	0.00	0.00		
112	1112	0.00	0.00	0.00		
113	1113	0.00	0.00	0.00		
114	1114	0.00	0.00	0.00		
115	1115	0.00	0.00	0.00		
116	1116	0.00	0.00	0.00		
117	1117	0.00	0.00	0.00		
118	1118	0.00	0.00	0.00		
119	1119	0.00	0.00	0.00		
120	1120	0.00	0.00	0.00		
121	1121	0.00	0.00	0.00		
122	1122	0.00	0.00	0.00		
123	1123	0.00	0.00	0.00		
124	1124	0.00	0.00	0.00		
125	1125	0.00	0.00	0.00		
126	1126	0.00	0.00	0.00		
127	1127	0.00	0.00	0.00		
128	1128	0.00	0.00	0.00		
129	1129	0.00	0.00	0.00		
130	1130	0.00	0.00	0.00		
131	1131	0.00	0.00	0.00		
132	1132	0.00	0.00	0.00		
133	1133	0.00	0.00	0.00		
134	1134	0.00	0.00	0.00		
135	1135	0.00	0.00	0.00		
136	1136	0.00	0.00	0.00		
137	1137	0.00	0.00	0.00		
138	1138	0.00	0.00	0.00		
139	1139	0.00	0.00	0.00		
140	1140	0.00	0.00	0.00		
141	1141	0.00	0.00	0.00		
142	1142	0.00	0.00	0.00		
143	1143	0.00	0.00	0.00		
144	1144	0.00	0.00	0.00		
145	1145	0.00	0.00	0.00		
146	1146	0.00	0.00	0.00		
147	1147	0.00	0.00	0.00		
148	1148	0.00	0.00	0.00		
149	1149	0.00	0.00	0.00		
150	1150	0.00	0.00	0.00		
151	1151	0.00	0.00	0.00		
152	1152	0.00	0.00	0.00		
153	1153	0.00	0.00	0.00		
154	1154	0.00	0.00	0.00		
155	1155	0.00	0.00	0.00		
156	1156	0.00	0.00	0.00		
157	1157	0.00	0.00	0.00		
158	1158	0.00	0.00	0.00		
159	1159	0.00	0.00	0.00		
160	1160	0.00	0.00	0.00		
161	1161	0.00	0.00	0.00		
162	1162	0.00	0.00	0.00		
163	1163	0.00	0.00	0.00		
164	1164	0.00	0.00	0.00		
165	1165	0.00	0.00	0.00		
166	1166	0.00	0.00	0.00		
167	1167	0.00	0.00	0.00		
168	1168	0.00	0.00	0.00		
169	1169	0.00	0.00	0.00		
170	1170	0.00	0.00	0.00		
171	1171	0.00	0.00	0.00		
172	1172	0.00	0.00	0.00		
173	1173	0.00	0.00	0.00		
174	1174	0.00	0.00	0.00		
175	1175	0.00	0.00	0.00		
176	1176	0.00	0.00	0.00		
177	1177	0.00	0.00	0.00		
178	1178	0.00	0.00	0.00		
179	1179	0.00	0.00	0.00		
180	1180	0.00	0.00	0.00		
181	1181	0.00	0.00	0.00		
182	1182	0.00	0.00	0.00		
183	1183	0.00	0.00	0.00		
184	1184	0.00	0.00	0.00		
185	1185	0.00	0.00	0.00		
186	1186	0.00	0.00	0.00		
187	1187	0.00	0.00	0.00		
188	1188	0.00	0.00	0.00		
189	1189	0.00	0.00	0.00		
190	1190	0.00	0.00	0.00		
191	1191	0.00	0.00	0.00		
192	1192	0.00	0.00	0.00		
193	1193	0.00	0.00	0.00		
194	1194	0.00	0.00	0.00		
195	1195	0.00	0.00	0.00		
196	1196	0.00	0.00	0.00		
197	1197	0.00	0.00	0.00		
198	1198	0.00	0.00	0.00		
199	1199	0.00	0.00	0.00		
200	1200	0.00	0.00	0.00		
201	1201	0.00	0.00	0.00		
202	1202	0.00	0.00	0.00		
203	1203	0.00	0.00	0.00		
204	1204	0.00	0.00	0.00		
205	1205	0.00	0.00	0.00		
206	1206	0.00	0.00	0.00		
207	1207	0.00	0.00	0.00		
208	1208	0.00	0.00	0.00		
209	1209	0.00	0.00	0.00		
210	1210	0.00	0.00	0.00		
211	1211	0.00	0.00	0.00		
212	1212	0.00	0.00	0.00		
213	1213	0.00	0.00	0.00		
214	1214</					

Solutions Provided:

- On-line requisitioning of aliquots of tissue samples followed by electronic status report
 - Automated statistical reports emailed to key personnel
 - Polling of the EHR to retrieve current lab results and pathology reports
 - Email reminders to-do lists within the applications
 - Querying Agilent chips to optimize the chip selection for microarray experiments
 - Requesting, scheduling and paying for microarray experiments
 - Notification, storage and delivery of experiment results
 - Scheduling consultations with statisticians and informaticists
 - Optimization of study group assignment of animals with introduced tumors
 - Coordination of animal labs and pharma for drug testing on tumors



Use of SAS querying Oracle to produce reports when the experiment is finished



Technician interface providing notification that there are new requests for specimens



Specimen request for researchers to select specific samples, amount, and DNA extraction



Report by specimen source
and tumor histology

Conclusion:

By automating the flow of information, the researchers are freed up to be able to concentrate more on the science of their work.