Calculate Expected P-value

Author: Greta Linse Peterson, Golden Helix, Inc.

Overview

This script takes spreadsheet that contains a p-value column and calculates expected p-values for the specified column. It is also optional to export expected –log10 p-values as well.

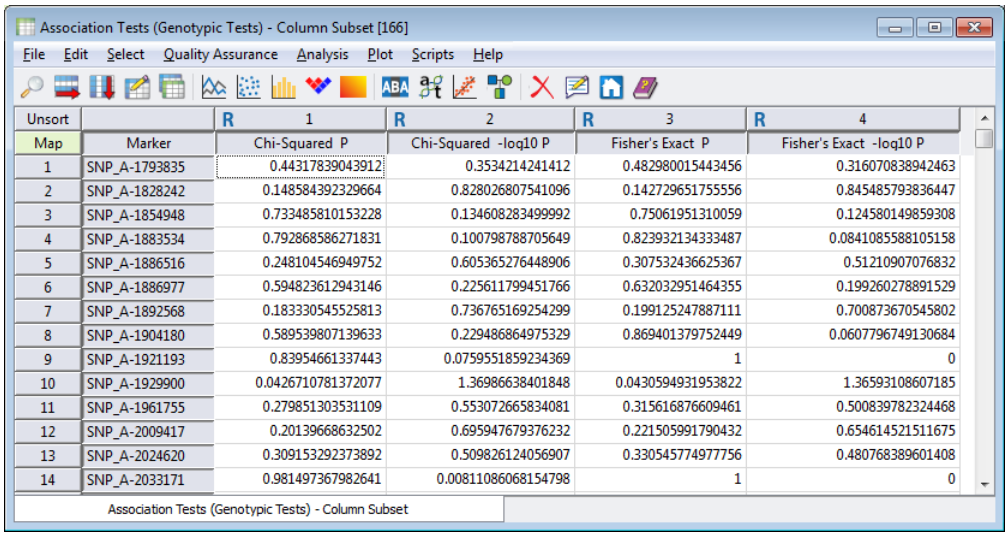
Recommended Directory Location

Save the script to the following directory:
*..**\Application Data\Golden Helix SVS\UserScripts\Spreadsheet\Edit**

Note: The **Application Data** folder is a hidden folder on Windows operating systems and its location varies between XP and Vista. The easiest way to locate this directory on your computer is to open SVS and select **Tools >Open Folder > UserScripts Folder**. If saved to the proper folder, this script will be accessible from the spreadsheet **Edit** menu.

Using the Script

1. Open a spreadsheet containing a p-value column, such as in **Figure 1**.



Unsort		R 1	R 2	R 3	R 4
Map	Marker	Chi-Squared P	Chi-Squared -log10 P	Fisher's Exact P	Fisher's Exact -log10 P
1	SNP_A-1793835	0.44317839043912	0.3534214241412	0.482980015443456	0.316070838942463
2	SNP_A-1828242	0.148584392329664	0.828026807541096	0.142729651755556	0.845485793836447
3	SNP_A-1854948	0.733485810153228	0.134608283499992	0.75061951310059	0.124580149859308
4	SNP_A-1883534	0.792868586271831	0.100798788705649	0.823932134333487	0.0841085588105158
5	SNP_A-1886516	0.248104546949752	0.605365276448906	0.307532436625367	0.51210907076832
6	SNP_A-1886977	0.594823612943146	0.225611799451766	0.632032951464355	0.199260278891529
7	SNP_A-1892568	0.183330545525813	0.736765169254299	0.199125247887111	0.700873670545802
8	SNP_A-1904180	0.589539807139633	0.229486864975329	0.869401379752449	0.0607796749130684
9	SNP_A-1921193	0.83954661337443	0.0759551859234369	1	0
10	SNP_A-1929900	0.0426710781372077	1.36986638401848	0.0430594931953822	1.36593108607185
11	SNP_A-1961755	0.279851303531109	0.553072665834081	0.315616876609461	0.500839782324468
12	SNP_A-2009417	0.20139668632502	0.695947679376232	0.221505991790432	0.654614521511675
13	SNP_A-2024620	0.309153292373892	0.509826124056907	0.330545774977756	0.480768389601408
14	SNP_A-2033171	0.981497367982641	0.00811086068154798	1	0

Figure 1: P-values spreadsheet that needs expected values computed for Chi-Squared P

2. Select **Edit > Calculate Expected P-value.**

3. Choose the column to compute the expected p-values and if expected –log 10 p-values should be computed as well, see **Figure 2**, and click **OK**.

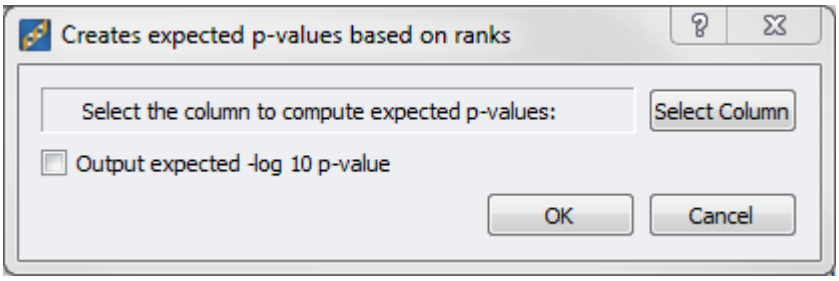
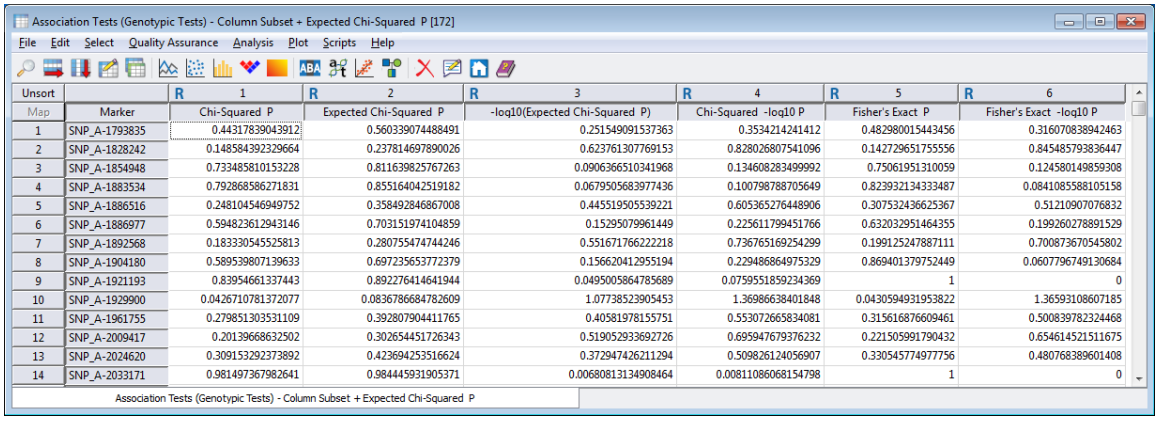


Figure 2: Input options for computing expected p-values

The resulting spreadsheet will have all of the original columns plus one or two additional columns for the expected p-value and the expected –log 10 p-value if selected. The new spreadsheet will be created as a daughter of the original spreadsheet. See **Figure 3**.



Unsort		R 1	R 2	R 3	R 4	R 5	R 6
Map	Marker	Chi-Squared P	Expected Chi-Squared P	-log10(Expected Chi-Squared P)	Chi-Squared -log10 P	Fisher's Exact P	Fisher's Exact -log10 P
1	SNP_A-1793835	0.443178390439 12	0.560339074488491	0.251549091537363	0.3534214241412	0.482980015443456	0.316070838942463
2	SNP_A-1828242	0.148584392329664	0.237814697890026	0.623761307769153	0.828026807541096	0.142729651755556	0.845485793836447
3	SNP_A-1854948	0.733485810153228	0.811639825767263	0.0906366510341968	0.134608283499992	0.75061951310059	0.124580149859308
4	SNP_A-1883534	0.792868586271831	0.855164042519182	0.0679505683977436	0.100798788705649	0.823932134333487	0.0841085588105158
5	SNP_A-1886516	0.248104546949752	0.358492846867008	0.445519505539221	0.605365276448906	0.307532436625367	0.51210907076832
6	SNP_A-1886977	0.594823612943146	0.703151974104859	0.15295079961449	0.225611799451766	0.632032951464355	0.199260278891529
7	SNP_A-1892568	0.183330545525813	0.280755474744246	0.551671766222218	0.736765169254299	0.199125247887111	0.700873670545802
8	SNP_A-1904180	0.589539807139633	0.697235653772379	0.156620412955194	0.229486864975329	0.869401379752449	0.0607796749130684
9	SNP_A-1921193	0.83954661337443	0.892276414641944	0.0495005864785689	0.0759551859234369	1	0
10	SNP_A-1929900	0.0426710781372077	0.0836786684782609	1.07738523905453	1.36986638401848	0.0430594931953822	1.36593108607185
11	SNP_A-1961755	0.279851303531109	0.392807904411765	0.40581978155751	0.553072665834081	0.315616876609461	0.500839782324468
12	SNP_A-2009417	0.20139668632502	0.302654451726343	0.519052933692726	0.695947679376232	0.221505991790432	0.654614521511675
13	SNP_A-2024620	0.309153292373892	0.423694253516624	0.372947426211294	0.509826124056907	0.330545774977756	0.480768389601408
14	SNP_A-2033171	0.981497367982641	0.984445931905371	0.00680813134908464	0.00811086068154798	1	0

Figure 3: The expected p-values and expected –log 10 p-values have been calculated and added to the original spreadsheet.