Supplementary Tables:

Supplemental table 1: Quantification of histone H4, H2A, H2B and H1 with imaging on fixed samples.

H4 Data					
Pair #	Old GSC/GB	New GB/GSC		Old H4 SG1/SG1	New H4 SG2/SG1
1	3.95261	0.58145	1	1.01	0.92
2	3.22532	0.85939	2	1.03	0.92
3	3.04916	0.98102	3	0.85	0.82
4	2.95193	1.23534	4	1.05	1.17
5	3.41593	1.05703	5	1.03	0.83
6	5.70124	1.19769	6	1.31	0.77
7	4.86019	1.21894	7	0.76	1.05
8	2.44502	1.43429	8	1.03	1.22
9	1.01334	1.03873	9	1.069	0.98
10	3.15893	0.72547	10	0.92	0.84
11	4.84095	0.75232	11	1.038	1.05
12	5.66219	1.75663	12	0.89	1.22
13	3.21869	0.66236	13	1.026	0.98
14	4.3869	1.1402	14	0.76	0.84
15	4.31614	1.75219	15	1.04	1.05
16	3.65617	0.6908	16	0.925	0.94
17	0.90141	1.15683	17	1.02	0.82
18	0.76087	1.14976	18	0.76	0.95
19	3.6405	0.78695	19	1.04	0.872
20	3.8227	0.57026	20	0.925	1.202
21	1.33704	1.17069	21	1.02	1.147
22	4.53044	1.05605	22	1.016	0.8
23	2.92533	1.07775	23	0.99	1.12
24	3.08045	1.03266	24	1	1.03
25	0.94657	1.28723	25	1.02	0.68
26	4.87384	1.14928	26	1.123	1.38
27	5.97293	2.117	27	1.01	0.93
28	1.39878	0.81597			
29	0.98925	0.98242			

30	0.90328	0.80169			
31	0.86818	1.39117			
32	5.858	1.234			
33	1.1098	1.3476			
34	1.123	1.12			
35	1.02	1.89202			
36	1.12176	0.88736			
37	1.32	0.98			
38	1.39	1.01			
39	1.87	1.38			
40	0.98	1.05			
41	0.99	1.25			
42	1.8654	1.3453			
43	2.261	1.35			
44	2.56	1.11			

H2A
Data

Pair #	Old H2A GSC/GB	New H2A GB/GSC	Pair #	Old H2A SG1/SG2	New H2A SG2/SG1
1	0.97526	0.98053	1	1.08853	1.04377
2	0.96884	0.96606	2	1.01652	1.01619
3	0.96911	0.94179	3	0.94226	0.97414
4	1.23228	1.63322	4	1.06756	0.91538
5	1.02585	1.04176	5	1.0099	0.96247
6	1.05326	0.9991	6	1.04282	0.94673
7	0.96981	1.1862	7	1.01932	0.95029
8	0.79768	1.35798	8	1.22233	0.88543
9	1.07599	1.12273	9	0.99573	1.01997
10	1.12152	0.90102	10	0.93019	1.00929
11	1.06131	1.10325	11	0.93179	0.93155
12	0.9124	1.06645	12	0.98612	0.97988
13	0.80183	1.20448	13	0.92509	1.04502
14	1.07001	0.98794	14	1.01963	1.1036
15	0.72145	1.24709	15	1.03505	1.11993
16	1.33841	1.24652	16	0.96955	0.97257
17	0.89897	1.15451	17	0.97267	1.03535

18	1.15294	1.01967	18	1.02315	1.16413
19	1.05437	0.82361	19	0.97885	1.1532
20	0.92081	1.0273	20	1.05542	1.02936

H2B
Data

Pair #	Old H2B GSC/GB	New H2B GB/GSC	Pair #	Old H2B SG1/SG2	New H2B SG2/SG1
1	0.81528	1.14988	1	1.0688	1.0368
2	0.91081	1.0871	2	0.83419	1.01759
3	0.99257	0.90021	3	1.01062	0.86112
4	0.97881	1.0615	4	1.04684	1.05203
5	1.17406	0.82182	5	0.91619	0.87483
6	0.87227	1.36065	6	0.97398	1.32672
7	1.16273	0.82736	7	1.22016	0.74991
8	1.17149	1.60111	8	1.00927	0.96835
9	1.03788	0.91736	9	0.9475	1.17024
10	0.99784	0.92363	10	0.85415	1.17491
11	0.89508	1.28192	11	1.17214	0.85816
12	0.9595	1.47957	12	1.0834	0.84516
13	1.23109	1.12747	13	1.07626	0.92324
14	0.8087	1.21191	14	1.02165	0.9204
15	1.04669	1.14397	15	0.86262	1.17237
16	0.84908	1.45383	16	1.02649	1.93949
17	1.05537	1.12127	17	1.02344	0.97242
18	1.01445	1.16539	18	0.92834	0.85676
19	0.9126	1.30627	19	0.90029	1.91883
20	1.02197	0.86291	20	1.06675	1.14407
21	1.20262	1.19143	21	1.09933	0.66265
22	0.88773	2.07111	22	1.15347	0.59781
23	0.9908	0.88569	23	0.98268	1.37432
24	0.91825	0.8915	24	0.8445	1.20599
25	0.91222	1.38431	25	1.03604	0.85231
26	0.86945	1.11417	26	1.06476	0.94824
27	1.1907	1.01954	27	0.88406	1.05915
28	0.89128	1.1297	28	1.09301	0.9983
29	1.04879	0.9498	29	1.08044	1.30052

30	1.21441	0.84858	30	1.22264	1.0443
31	0.93556	1.3278	31	1.03789	1.10251
32	0.84399	1.59379	32	1.12615	0.97758
33	1.01138	1.16682	33	0.81355	0.91765
34	0.90725	1.46625	34	1.08318	0.96847
35	0.89401	1.03343	35	0.90433	1.0319
36	1.11016	1.90552	36	1.01597	1.01317
37	0.91736	1.47624			
38	0.96429	1.28084			
39	0.97663	2.04853			
40	0.9693	0.89053			

H1
Data

Pair#	Old H1 GSC/GB	New H1 GB/GSC
1	1.23162	1.23631
2	1.31383	1.37178
3	1.28099	1.28898
4	2.6868	2.02088
5	1.2147	0.67617
6	0.96056	0.99023
7	1.14701	1.70528
8	1.62913	1.25233
9	0.67269	0.77294
10	0.84621	0.75771
11	1.22312	1.26967
12	0.90353	0.82814

Table 2: Averages and 95% confidence intervals for all datasets

H4 data summary:

Data set (figure):	Average	95% Confidence interval
H4-GFP GSC/GB ratio (Figure 1)	2.73	$2.24 \leq x \leq 3.23$

H4-mKO GB/GSC ratio (Figure 1)	1.13	$1.03 \leq x \leq 1.22$
H4-GFP SG1/SG2 ratio (Figure 1)	0.99	$0.94 \leq x \leq 1.03$
H4-mKO SG2/SG1 (Figure 1)	0.98	$0.92 \leq x \leq 1.05$
H2A-GFP GSC/GB ratio (Figure 2)	1.00	$0.94 \leq x \leq 1.08$
H2A-mKO GB/GSC ratio (Figure 2)	1.10	$1.02 \leq x \leq 1.19$
H2A-GFP SG1/SG2 ratio (Figure 2)	1.01	$0.98 \leq x \leq 1.04$
H2A-mKO SG2/SG1 ratio (Figure 2)	1.01	$0.98 \leq x \leq 1.05$
H2B-GFP GSC/GB ratio (Figure 2)	0.99	$0.95 \leq x \leq 1.03$
H2B-mKO GB/GSC ratio (Figure 2)	1.21	$1.11 \leq x \leq 1.31$
H2B-GFP SG1/SG2 ratio (Figure 2)	1.01	$0.98 \leq x \leq 1.05$
H2B-mKO SG2/SG1 (Figure 2)	1.05	$0.96 \leq x \leq 1.14$
H1-GFP GSC/GB ratio (Supplementary figure 1)	1.26	$0.93 \leq x \leq 1.59$
H1-mKO GB/GSC ratio (Supplementary figure 1)	1.18	$0.92 \leq x \leq 1.44$
30-minute pulse of EdU incorporation length (Sup. fig. 2)	1.96μm	$1.63 \leq x \leq 2.30$
Quantification of old H2A on sister chromatids (Figure 4)	1.36	$1.29 \leq x \leq 1.44$
Quantification of old H3 on sister chromatids (Figure 4)	2.41	$2.03 \leq x \leq 2.79$
Quantification of new H2A on sister chromatids (Figure 4)	1.24	$1.13 \leq x \leq 1.36$
Quantification of new H3 on sister chromatids (Figure 4)	1.94	$1.62 \leq x \leq 2.27$
H3K27me3 fold-enrichment on RPA70-enriched sister (Figure 5)	3.20	$2.30 \leq x \leq 4.52$
H3K27me3 fold-enrichment on PCNA-enriched sister (Figure 5)	2.04	$1.60 \leq x \leq 2.50$

H3K4me3 fold enrichment on RPA70 enriched sister	1.77	$1.41 \leq x \leq 2.21$
PLA puncta between ligase and new H3-mKO in GSCs (Figure 6)	26.5	$23.0 \leq x \leq 30.0$
PLA puncta between ligase and old H3-GFP in GSCs (Figure 6)	18.5	$16.0 \leq x \leq 21.5$
PLA puncta between ligase and new H3-mKO in SGs (Figure 6)	16.7	$13.0 \leq x \leq 20.3$
PLA puncta between ligase and old H3-GFP in SGs (Figure 6)	21.9	$18.7 \leq x \leq 25.1$
PLA puncta between PCNA and new H3-mKO in GSCs (Figure 6)	12.3	$10.2 \leq x \leq 14.4$
PLA puncta between PCNA and old H3-GFP in GSCs (Figure 6)	7.2	$5.8 \leq x \leq 8.6$
PLA puncta between PCNA and new H3-mKO in SGs (Figure 6)	8.3	$7.0 \leq x \leq 9.7$
PLA puncta between PCNA and old H3-GFP in SGs (Figure 6)	7.6	$6.3 \leq x \leq 8.9$
PLA puncta between ligase and old H3-mKO in GSCs (sup. fig. 4)	8.5	$6.1 \leq x \leq 10.9$
PLA puncta between ligase and new H3-GFP in GSCs (sup. fig. 4)	11.4	$8.9 \leq x \leq 14.0$
PLA puncta between old or new histones and Vasa (sup. fig. 4)	1.3	$1.0 \leq x \leq 1.7$
PLA puncta in hub cells in all experiments (sup. fig. 4)	0.2	$0.1 \leq x \leq 0.3$