

SNP Associations with Lung Function Decline

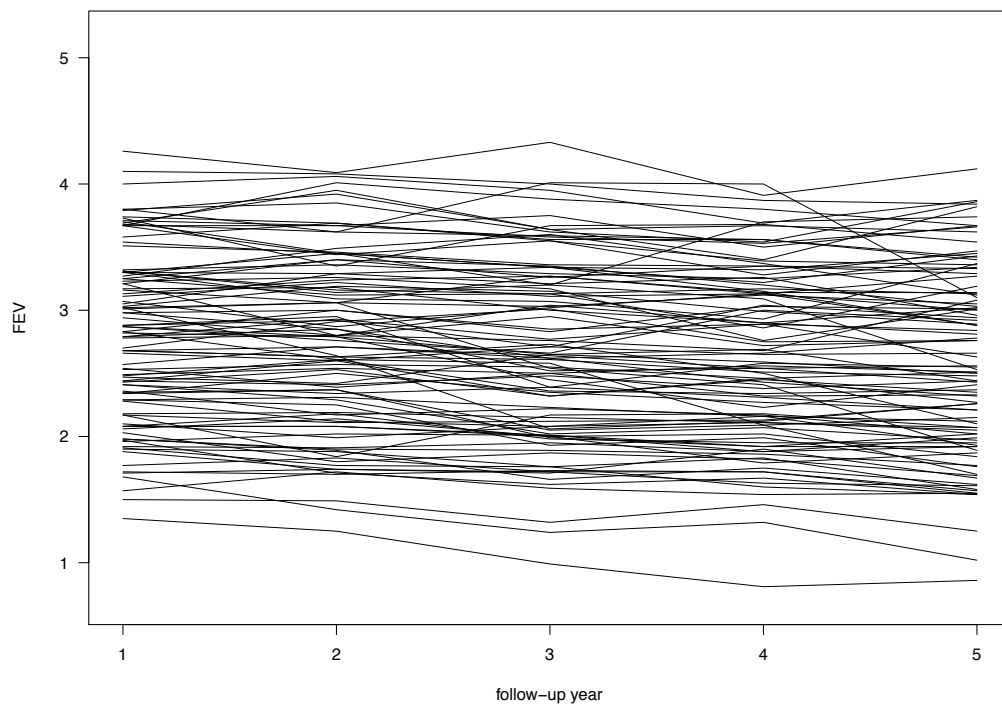
Lung Health Study

Ingo Ruczinski

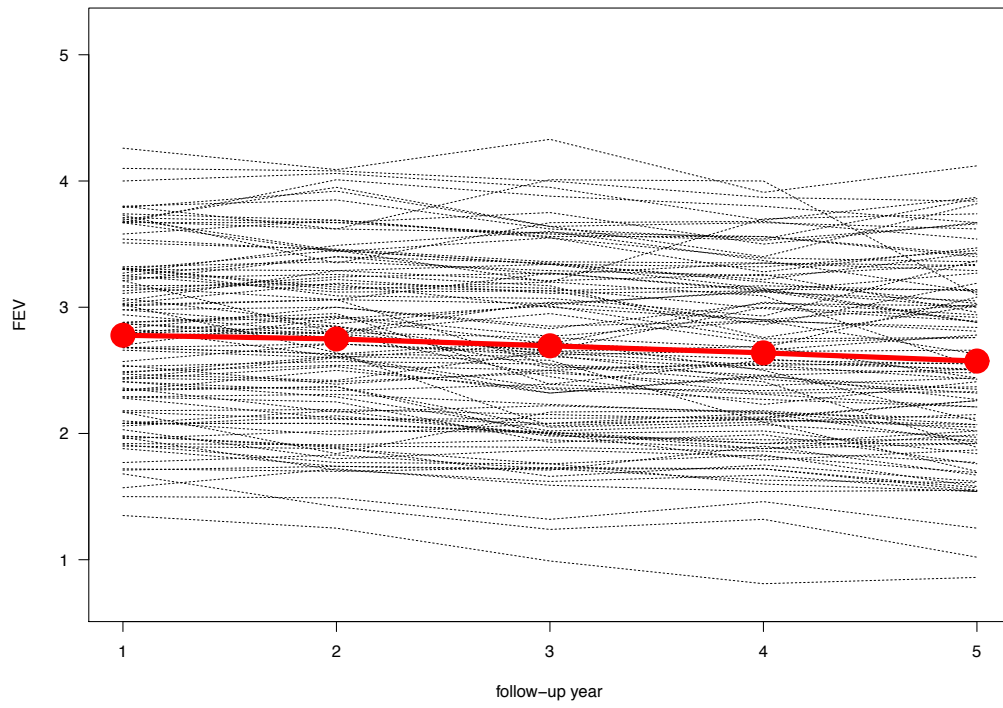
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health

January 18, 2011

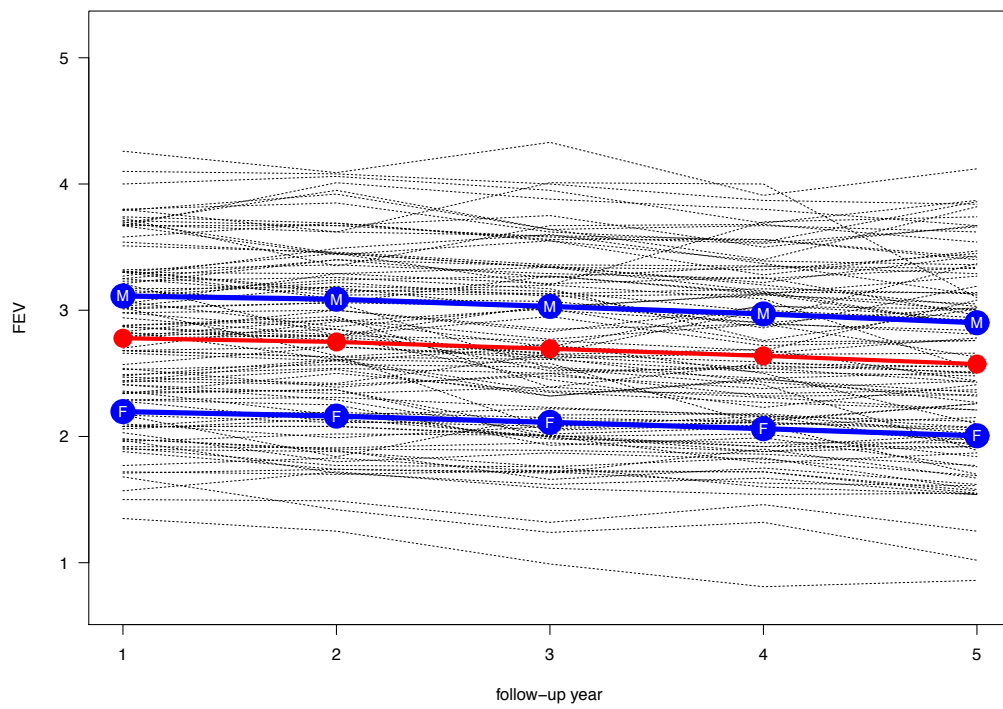
Lung function



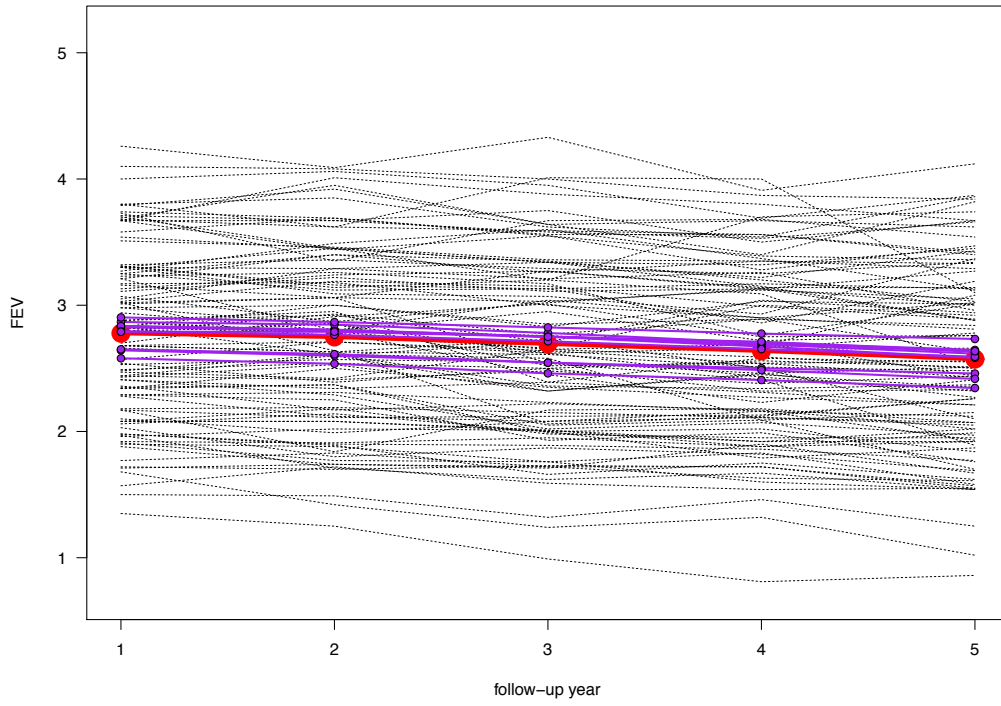
Lung function



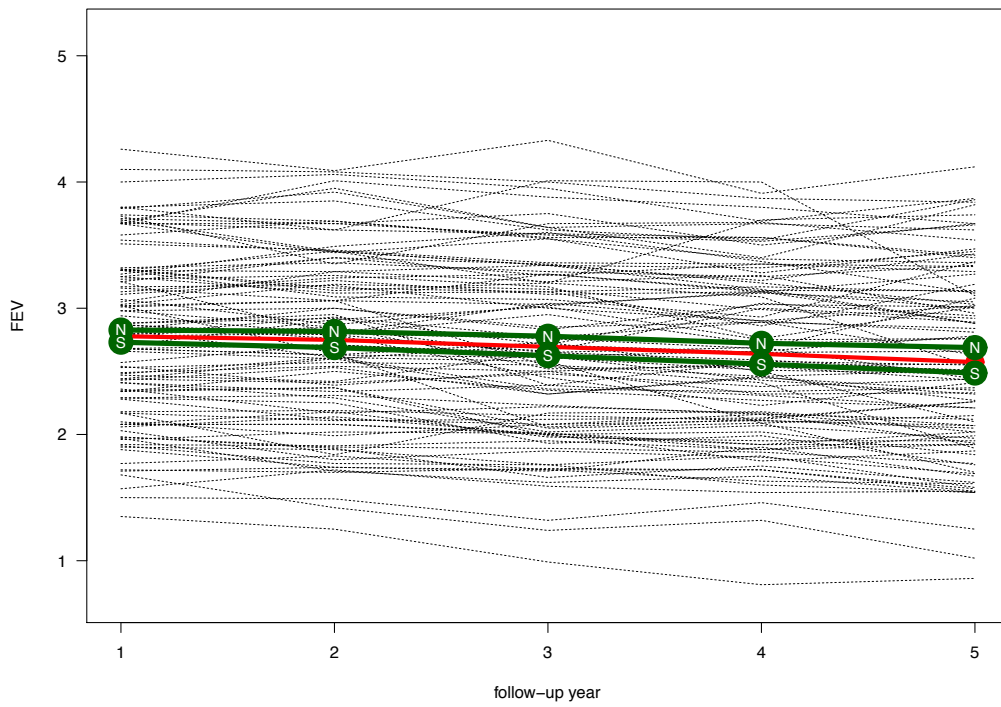
Lung function



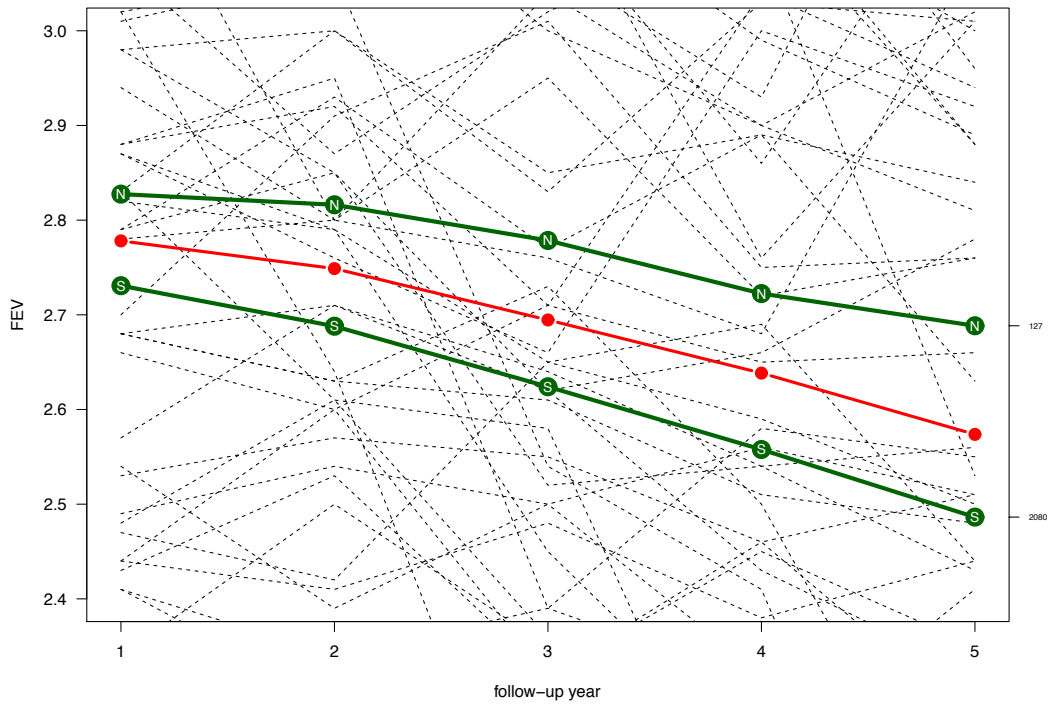
Lung function



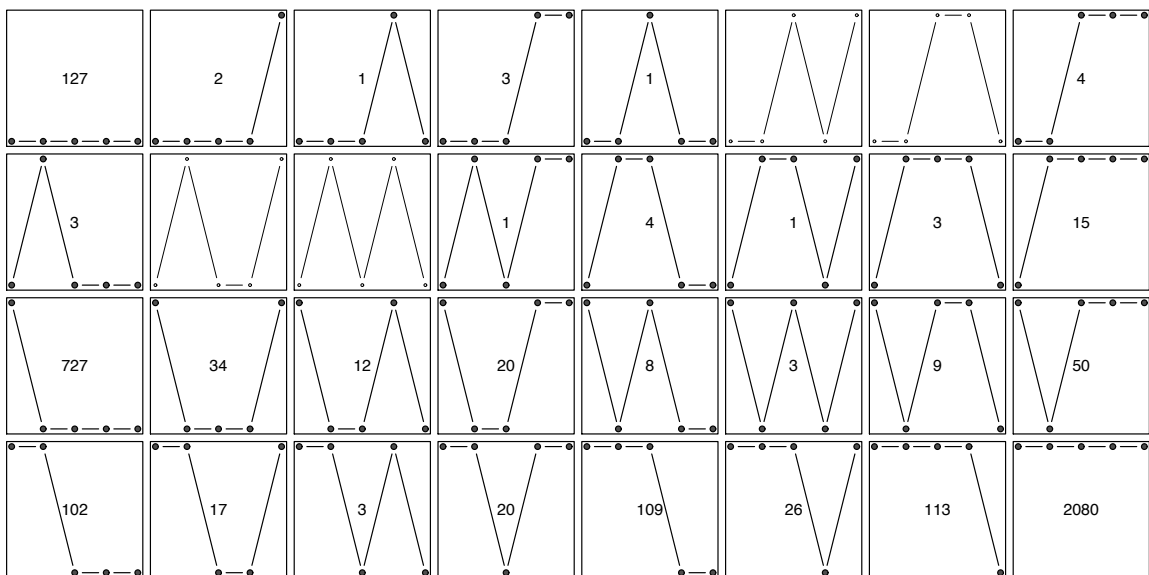
Lung function



Lung function



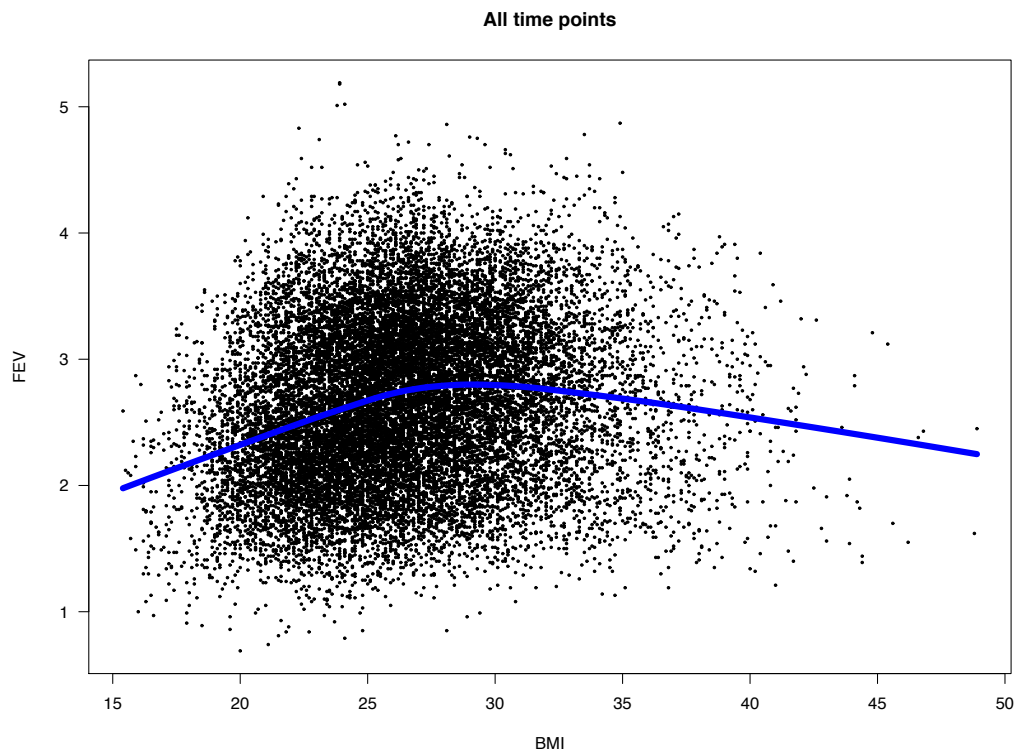
Lung function



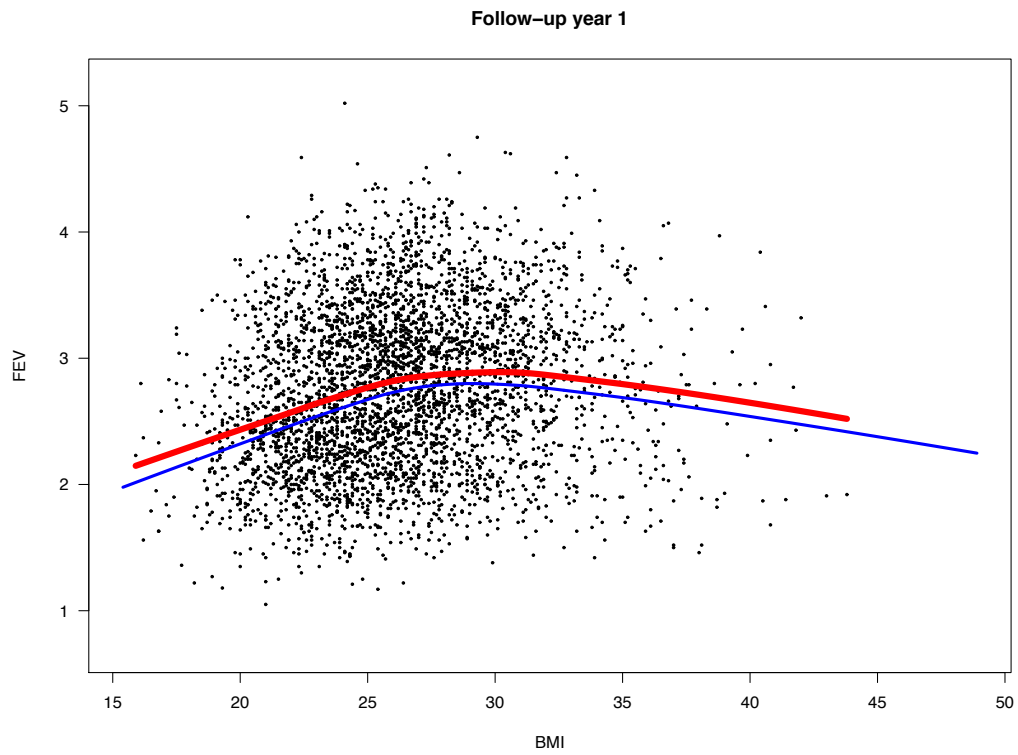
GEE

	Estimate	Robust S.E.	Robust z
(Intercept)	5.029	0.0822	61.2
cig.avg	-0.001	0.0002	-7.0
smoker	-0.017	0.0075	-2.3
smoker2	-0.029	0.0043	-6.7
time	-0.055	0.0023	-24.4
sex	-0.925	0.0124	-74.7
fitted.bmi	-0.076	0.0239	-3.2
age	-0.034	0.0009	-35.8
center2	0.076	0.0281	2.7
center3	0.077	0.0270	2.8
center4	-0.040	0.0290	-1.4
center5	0.141	0.0294	4.8
center6	-0.035	0.0303	-1.2
center7	0.129	0.0278	4.6
center8	0.108	0.0270	4.0
center9	0.124	0.0273	4.5
center10	0.113	0.0279	4.1
smoker:time	-0.008	0.0023	-3.6
time:sex	0.007	0.0016	4.0

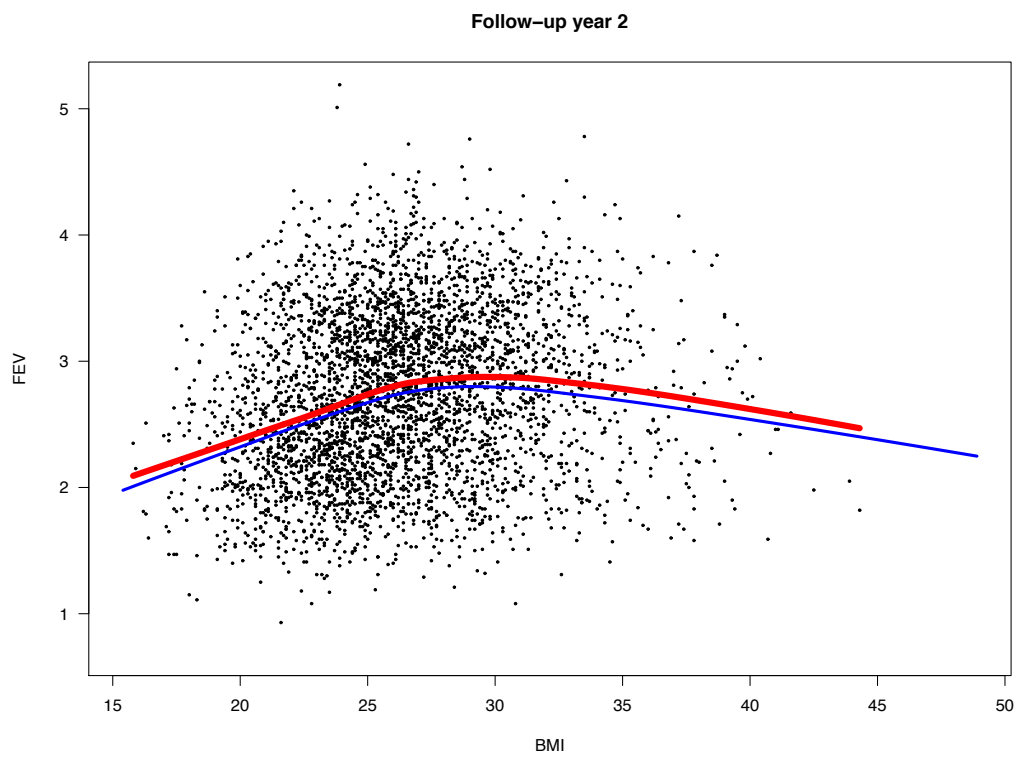
Lung function



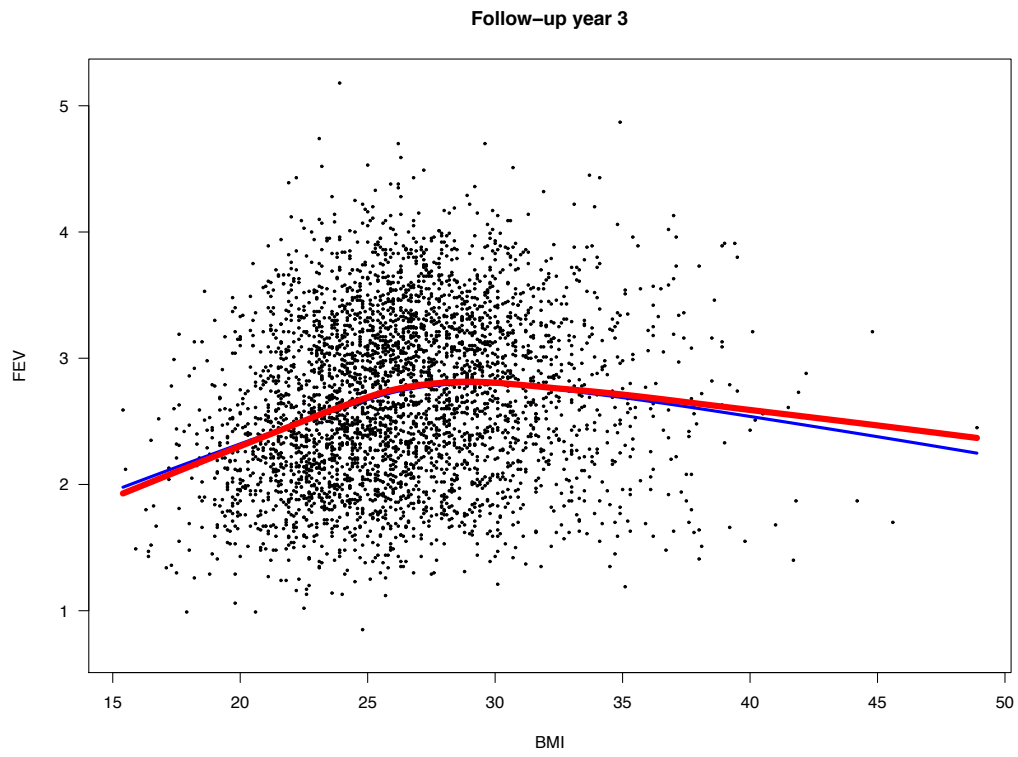
Lung function



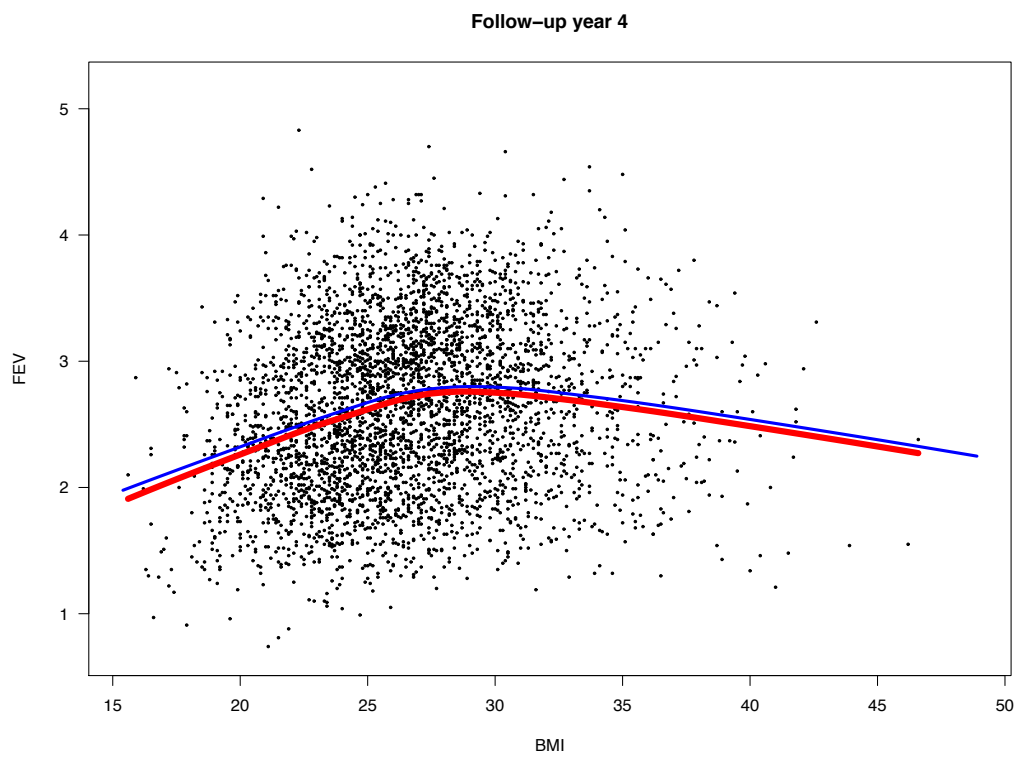
Lung function



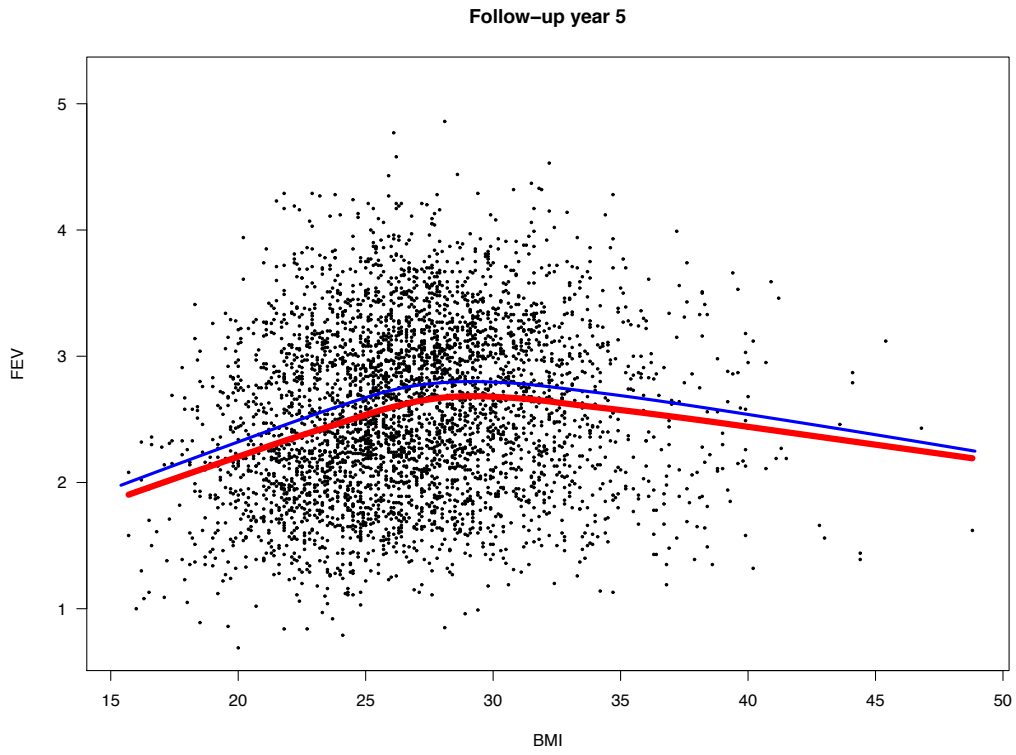
Lung function



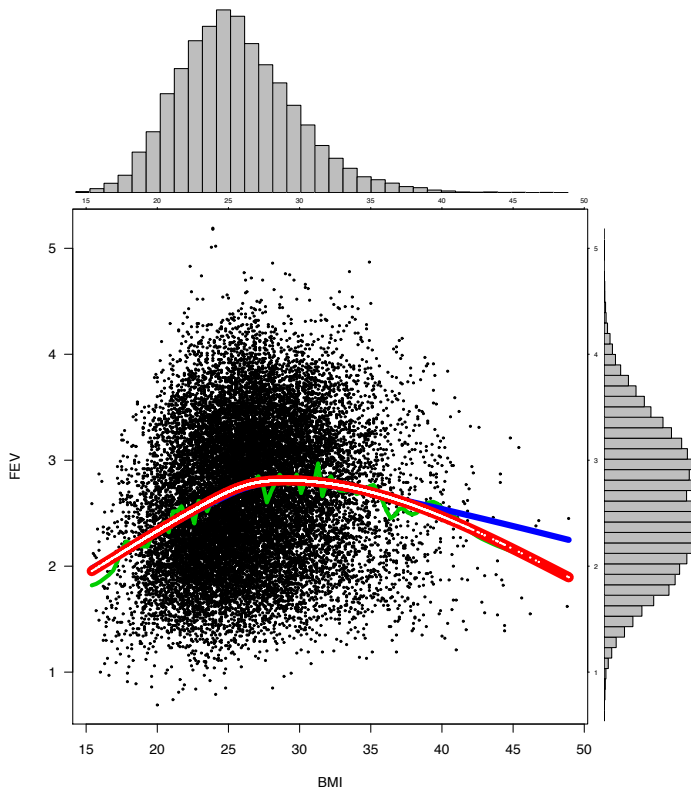
Lung function



Lung function



Lung function



GEE

PC1
PC2
PC3
PC4
PC5
SNP
→ SNP × time

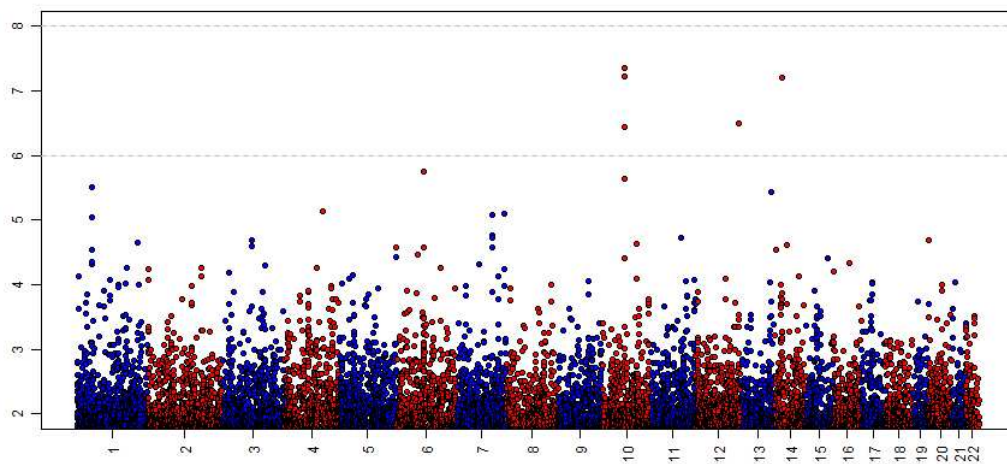
Results

snp	chr	locus	z	p	a1	a2	hwe	maf
RS7911302	10	62577232	-5.48	4.3e-08	G	T	0.68	0.44
RS10761570	10	62576961	-5.42	6.0e-08	G	A	0.25	0.44
RS177852	14	37181621	-5.41	6.3e-08	C	A	0.68	0.33
RS2030436	12	128460517	-5.11	3.2e-07	T	C	0.92	0.14
RS4948444	10	62600003	-5.09	3.6e-07	G	A	1.00	0.45
RS12194741	6	73433589	4.78	1.8e-06	G	A	0.96	0.22
RS7922793	10	62496958	-4.72	2.3e-06	G	A	0.27	0.36
RS2275456	1	53308613	4.67	3.1e-06	A	G	0.17	0.04
RS7331728	13	104219264	-4.63	3.6e-06	G	T	0.01	0.17
RS4330400	4	136256860	-4.49	7.3e-06	T	C	0.15	0.38
RS4726158	7	151748390	-4.47	8.0e-06	T	C	1.00	0.14
RS4727747	7	110236643	4.46	8.3e-06	T	C	0.62	0.09
RS10493172	1	53296492	4.44	8.9e-06	A	G	0.85	0.04

Results

	est	se	z	p
RS12772906	0.0027	0.0019	1.42	1.6e-01
RS11592920	0.0027	0.0023	1.17	2.4e-01
RS7922793	-0.0082	0.0017	-4.72	2.3e-06
RS12262459	0.0025	0.0052	0.49	6.3e-01
RS7087951	-0.0064	0.0018	-3.51	4.4e-04
RS16915839	0.0021	0.0018	1.17	2.4e-01
RS4131334	0.0027	0.0017	1.54	1.2e-01
RS7911472	0.0022	0.0019	1.17	2.4e-01
RS1906464	0.0026	0.0019	1.35	1.8e-01
RS1906461	-0.0080	0.0019	-4.11	3.9e-05
RS10761570	-0.0098	0.0018	-5.42	6.0e-08
RS7911302	-0.0099	0.0018	-5.48	4.3e-08
RS4948444	-0.0093	0.0018	-5.09	3.6e-07
RS1906455	0.0040	0.0019	2.08	3.8e-02
RS2633295	-0.0059	0.0018	-3.23	1.3e-03
RS11592307	0.0015	0.0031	0.48	6.3e-01
RS1906478	-0.0047	0.0019	-2.40	1.7e-02
RS1906470	-0.0038	0.0021	-1.79	7.4e-02
RS1906469	-0.0039	0.0019	-2.04	4.2e-02
RS11596067	0.0020	0.0021	0.96	3.3e-01
RS4145320	-0.0057	0.0018	-3.11	1.8e-03
RS7911065	-0.0058	0.0018	-3.16	1.6e-03

Results



**<http://biostat.jhsph.edu/~iruczins/>
ingo@jhu.edu**