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## Genomic systems biology

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Jonathan B Weitzman

Email: jonathanweitzman@hotmail.com

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Identifying genes linked to complex multifactorial diseases presents a formidable challenge for the post-genomic era. In the November 23 issue of *Science*, Monika Stoll and researchers at the [Medical College of Wisconsin](#) in Milwaukee describe a 'physiological profiling' strategy to investigate systems biology (*Science* 2001, **294**:1723-1726). They measured 239 cardiovascular and renal phenotypes, during normal and stressed conditions, in 113 male rats derived from an F2 intercross. They could map 81 quantitative trait loci (QTLs) to the genome and found that many were aggregated in distinct chromosomal regions (implying that several genes within a genomic region may contribute to cardiovascular and renal biology and disease etiology). They then looked at patterns of correlation, attempting to combine genetic linkage analysis with physiological pathways, and found evidence of a relationship between alleles of nitric oxide synthase (NOS) enzymes and arterial pressure responses. The integration of an extensive QTL map with physiological profiling should facilitate the cloning of genes involved in cardiovascular disease and hypertension.

## References

1. *Science*, [<http://www.sciencemag.org>]
2. Medical College of Wisconsin, [<http://www.mcw.edu>]
3. Physiological profiling, [<http://brc.mcw.edu/phyprf>]