JPBM
JOINT POLICY BOARD FOR MATHEMATICS

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Mathematics Awareness Month
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THE MATHEMATICS OF NETWORKS

In announcing the successful completion of efforts to sequence the human genome, many journalists cited the number of genes and pointed out that it was much lower than expected. The number of human genes, in fact, turned out to be only three times the number of genes in another organism whose genome was sequenced at about the same time: the fly.

How could this be?

The answer is that it's not the number of an organism's genes, but rather the web of interconnections---the network---linking the genes, that determines the complexity of the organism. Today, many scientists are focusing their efforts on gene networks. Those researchers have counterparts who are studying the networks arising in many other disciplines: physics, sociology, epidemiology, economics, to name just a few.

Fortunately, these diverse scientists are able to draw on a well-developed but still evolving area of mathematics called graph theory as they work to gain useful information about their networks. And as they team up with the applications scientists, the mathematicians, too, are moving in exciting new directions.

All this makes "The Mathematics of Networks" a rewarding theme for Mathematics Awareness Month 2004. We encourage you to use the enclosed poster, and the articles and links on the Web (itself one of the most studied networks in existence!), to learn more about this exciting area.

http://mathforum.org/mam/04

Each year the Joint Policy Board for Mathematics sponsors Mathematics Awareness Month to recognize the importance of mathematics through written materials and an accompanying poster that highlight mathematical developments and applications in one particular area.

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