



INSTITUTE OF MEDICINE

*OF THE NATIONAL ACADEMIES*

**Nutrigenomics in Public  
Health: Moving the Field Forward**



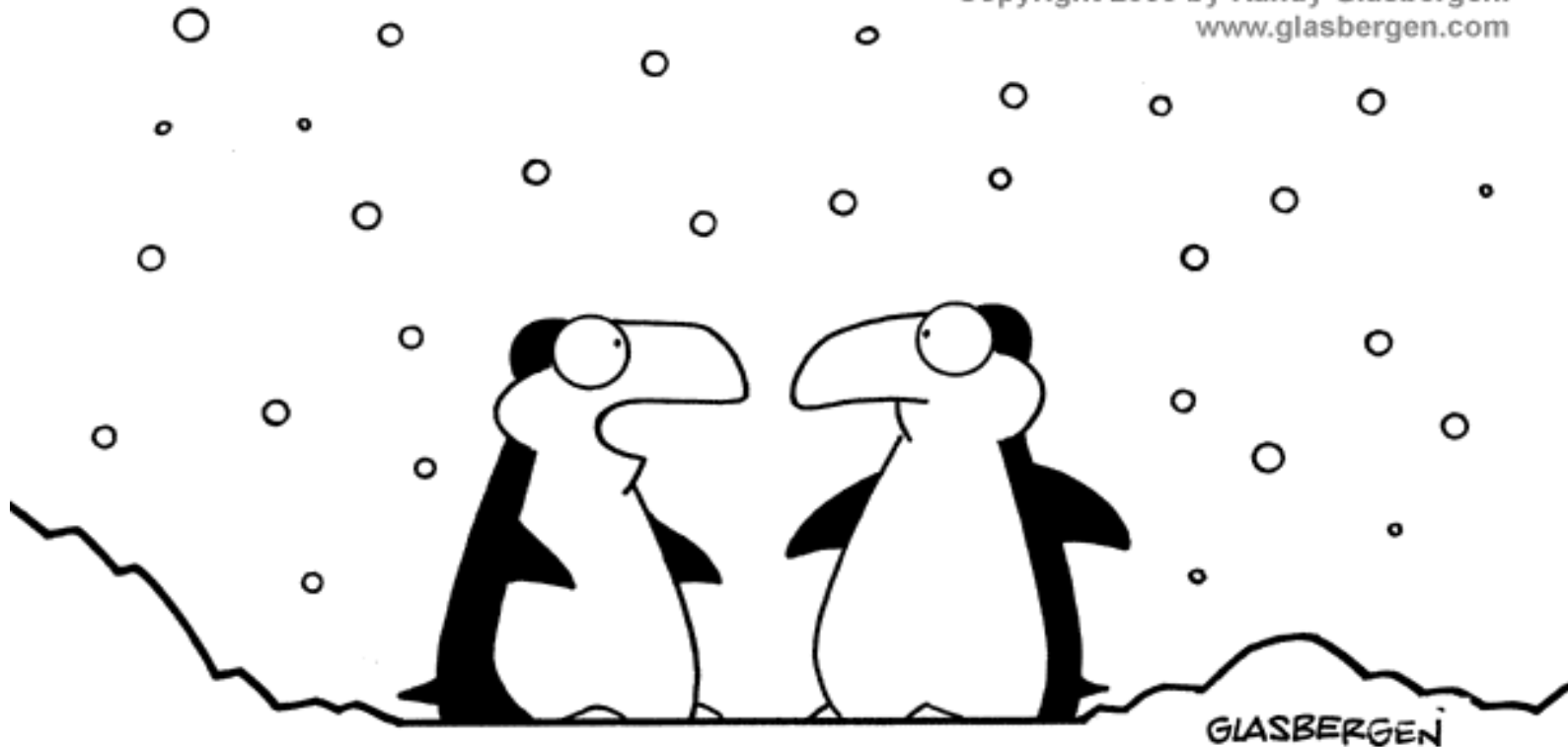
Harvey V. Fineberg

# Genetics, Nutrition and Public Health

If you seek near-term nutritional benefits for global health, genetic research on plants has delivered more than genetic research on humans.

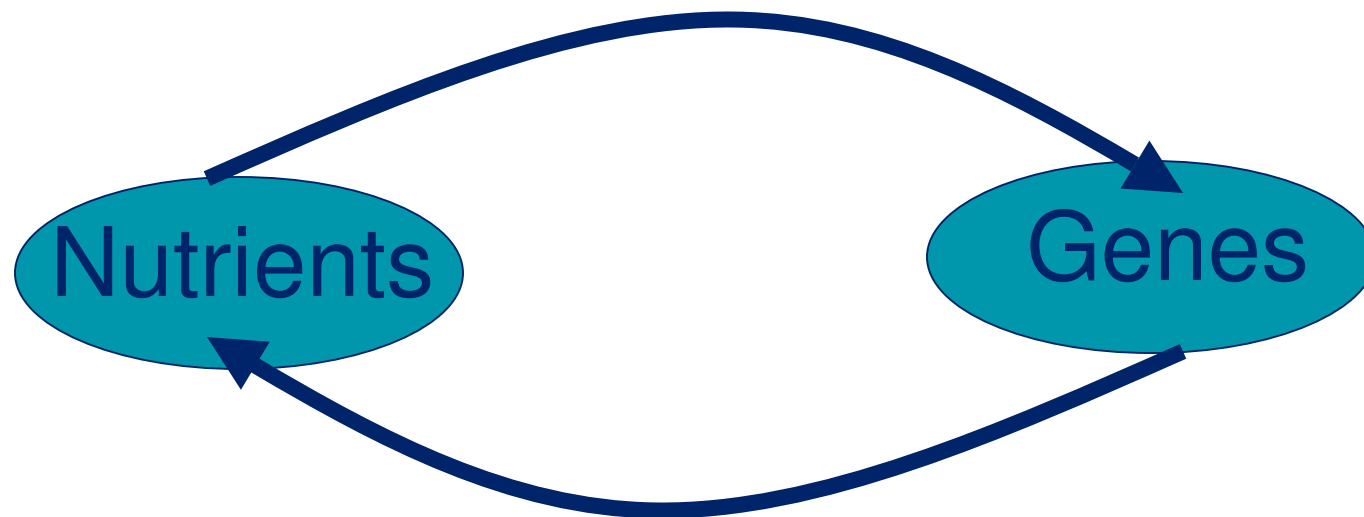
# Genotype, Phenotype, Nutrition

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**“Low fat diets don’t work. I eat fish every day  
and my butt still drags on the ground!”**

# Systems Approach



# Nutrients and Genes

- § Dietary components (nutrients) act directly or indirectly to alter gene expression or structure;
- § Some diet-regulated genes play a role in the onset, increased or decreased incidence, and pace of progression of chronic disease;
- § Individual genetic variation affects susceptibility to disease;
- § Dietary intervention, based on “individualized nutrition” may ultimately prevent or mitigate chronic disease.

# Key Tasks

- Key scientific questions
- Better, less expensive tools
- Promising research strategies
- Scientific, professional, business, and public awareness
- Public understanding and support
- Sufficient funding

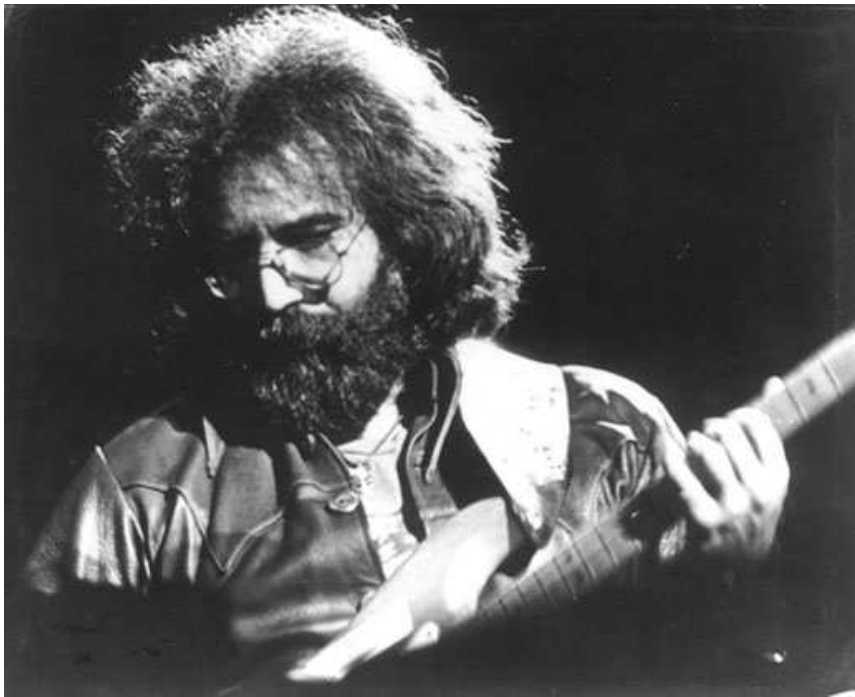
# Key Elements

- Identify and validate biomarkers and networks of effects
- Interdisciplinary research teams
- Interface with clinical care and public health professionals
- Government-Academic-Industry collaboration
- Ethical safeguards and decisions

# Where do we go from here?

Can nutrition science  
become the crossroads for  
a “grand unification theory”  
of health and disease?

# Where do we go from here?



“Something has to be done, and it is simply pathetic that we are the ones who have to do it.”

Jerry Garcia

