

Chemistry, Energy, and YOU

By

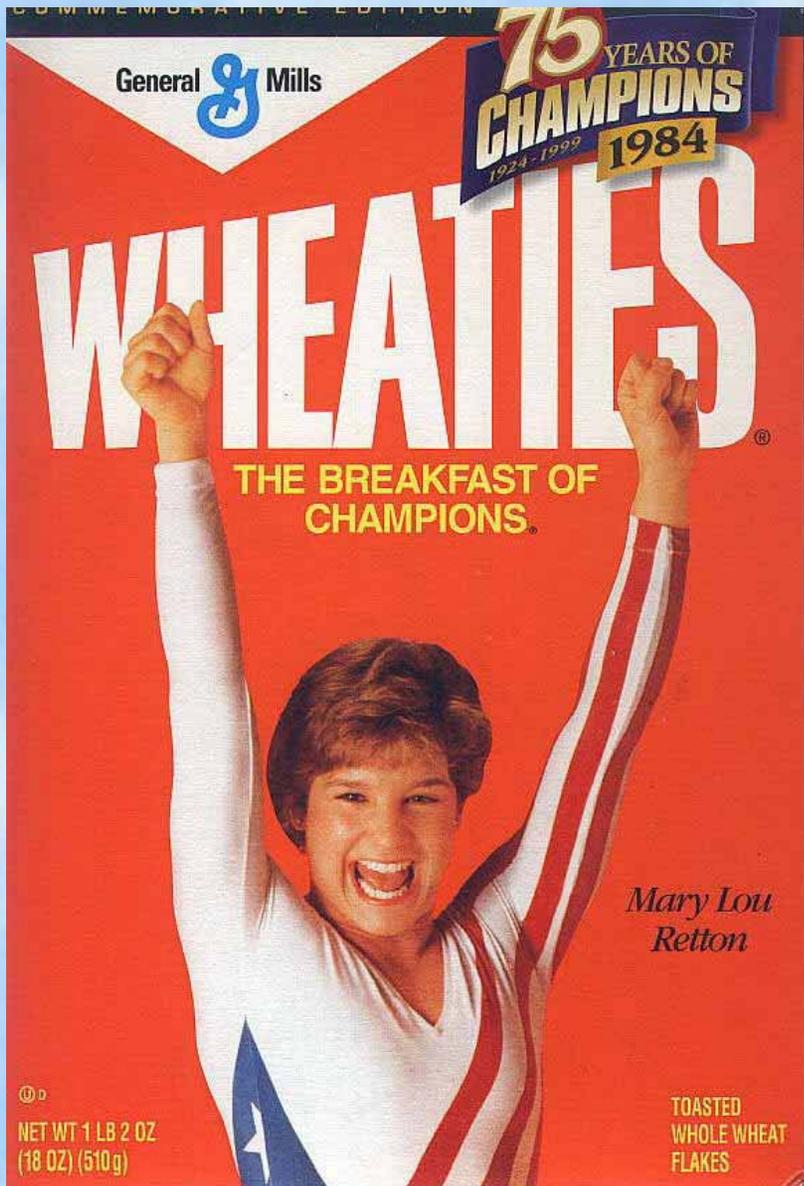
Dr. Steve
(Doctor of Chemistry)

The logo for Brookhaven National Laboratory features the word "BROOKHAVEN" in a bold, black, sans-serif font. A thin, grey, curved line arches over the letters "O" and "K". A small red dot is positioned on the line above the letter "A". Below "BROOKHAVEN", the words "NATIONAL LABORATORY" are written in a smaller, black, sans-serif font.

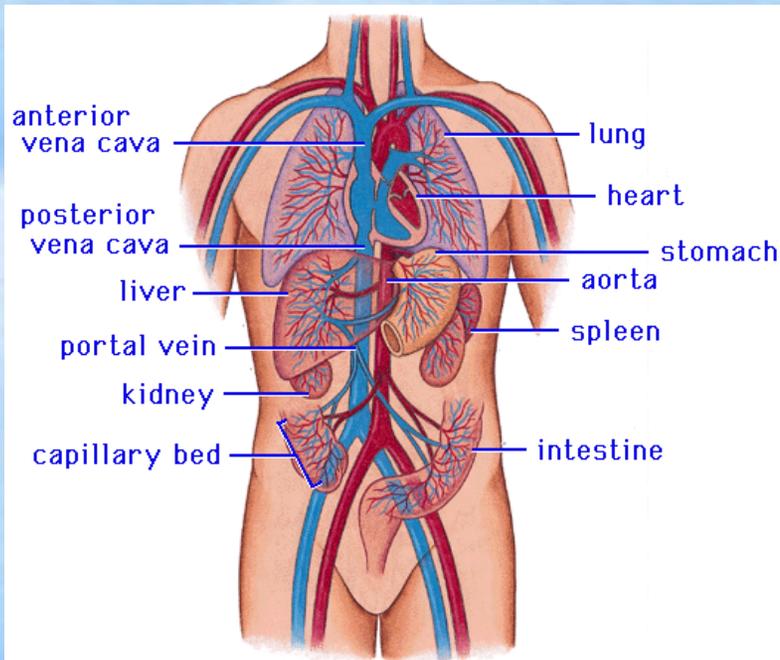
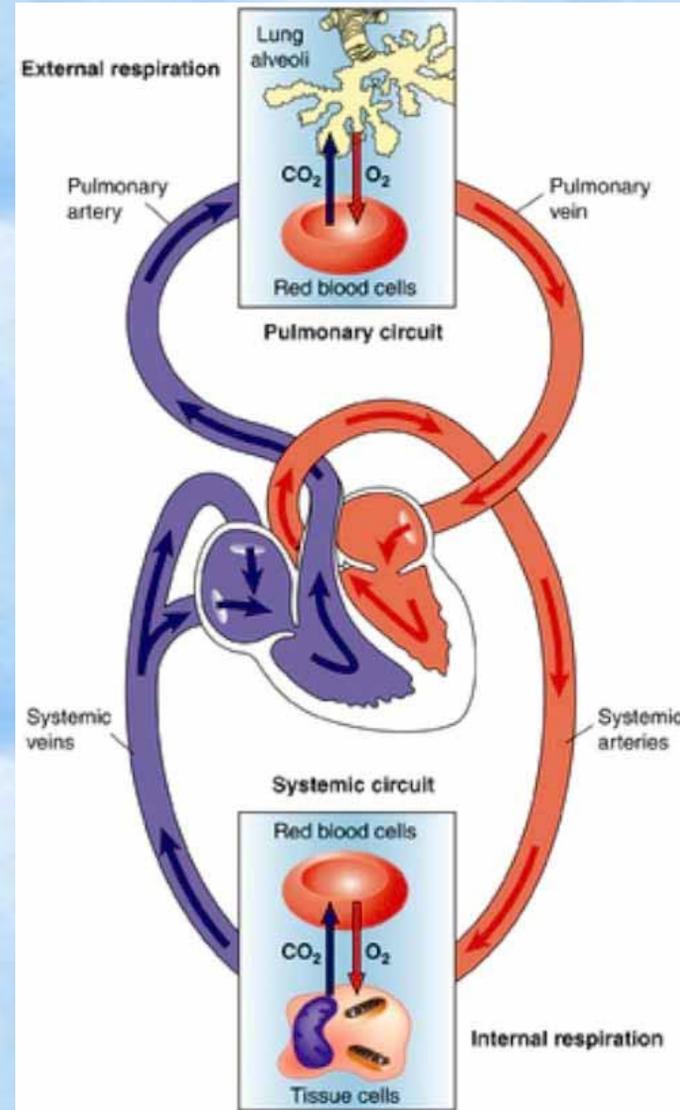
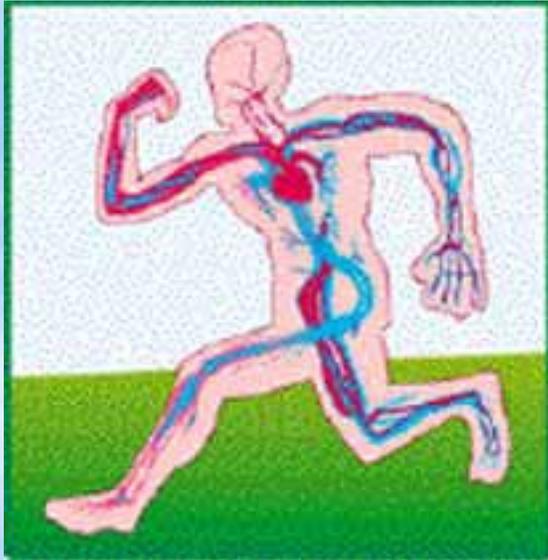
BROOKHAVEN
NATIONAL LABORATORY

Hampton Bays Middle School
February 25, 2015

WHERE DO YOU GET YOUR ENERGY?



HOW DO ENERGY AND OXYGEN GET TO YOUR MUSCLES?

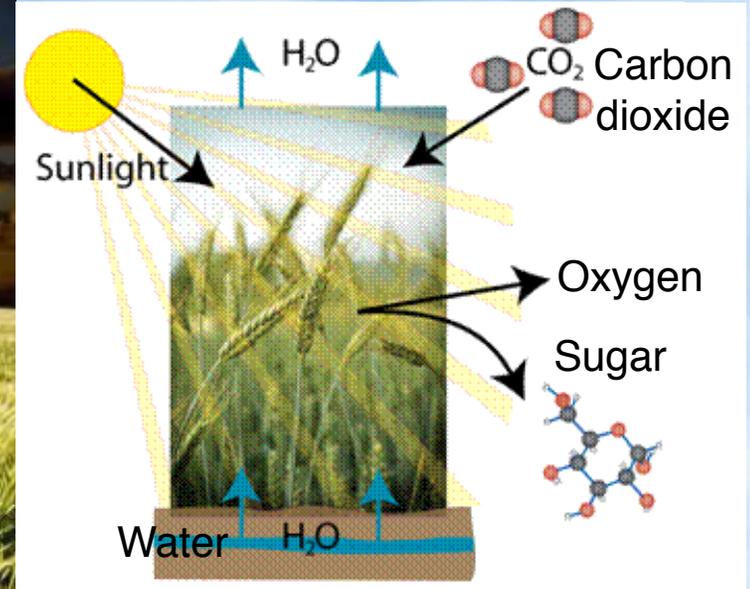


<http://www.prevent-stroke-and-heart-attack.com>

<http://library.thinkquest.org/5777/cir1.htm>

<http://newstt.com/how-is-circulatory-system-and-the-digestive-system-related/>

WHERE DOES YOUR FOOD GET ITS ENERGY?



www.ems.psu.edu/~pisupati/ACSO Outreach/Petroleum_1.html

www.desktopwallpaperhd.com

CALCULATE CALORIES PER GRAM



Nutrition Facts

Serving Size 1 serving (30 g)

Per Serving

Calories 90

Calories from Fat 0

Total Fat 0g

Sodium 80mg

Potassium 5mg

Carbohydrates 70g

Sugars 53.3g

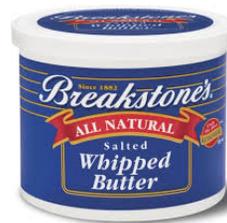
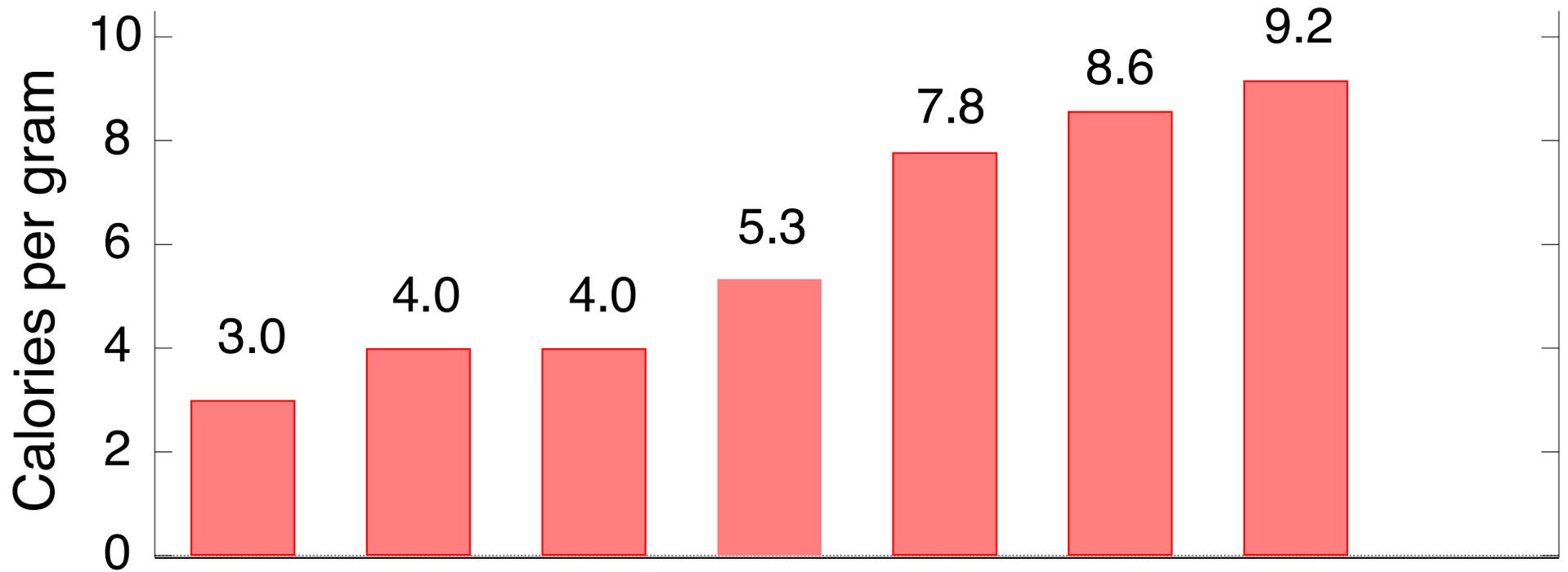
Protein 3.3g

90 Calories in 30 grams
(about 1 ounce)

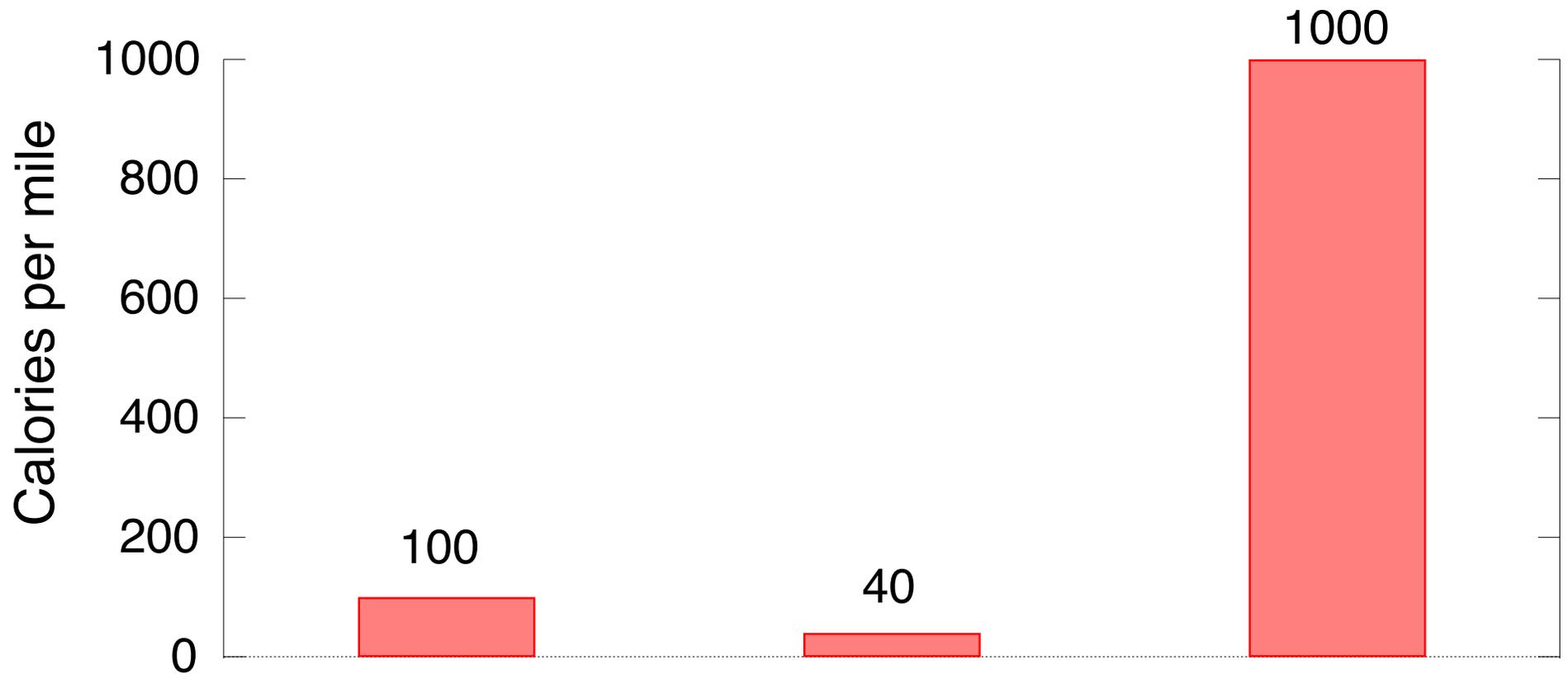
$$90 \div 30 = 3$$

3 Calories in one gram
(3 Calories per gram)

CALORIE CONTENT OF ENERGY FOODS



ENERGY TO TRAVEL ONE MILE

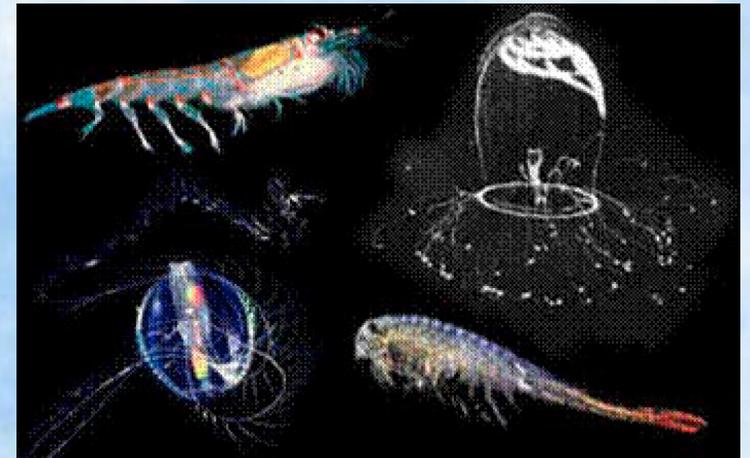
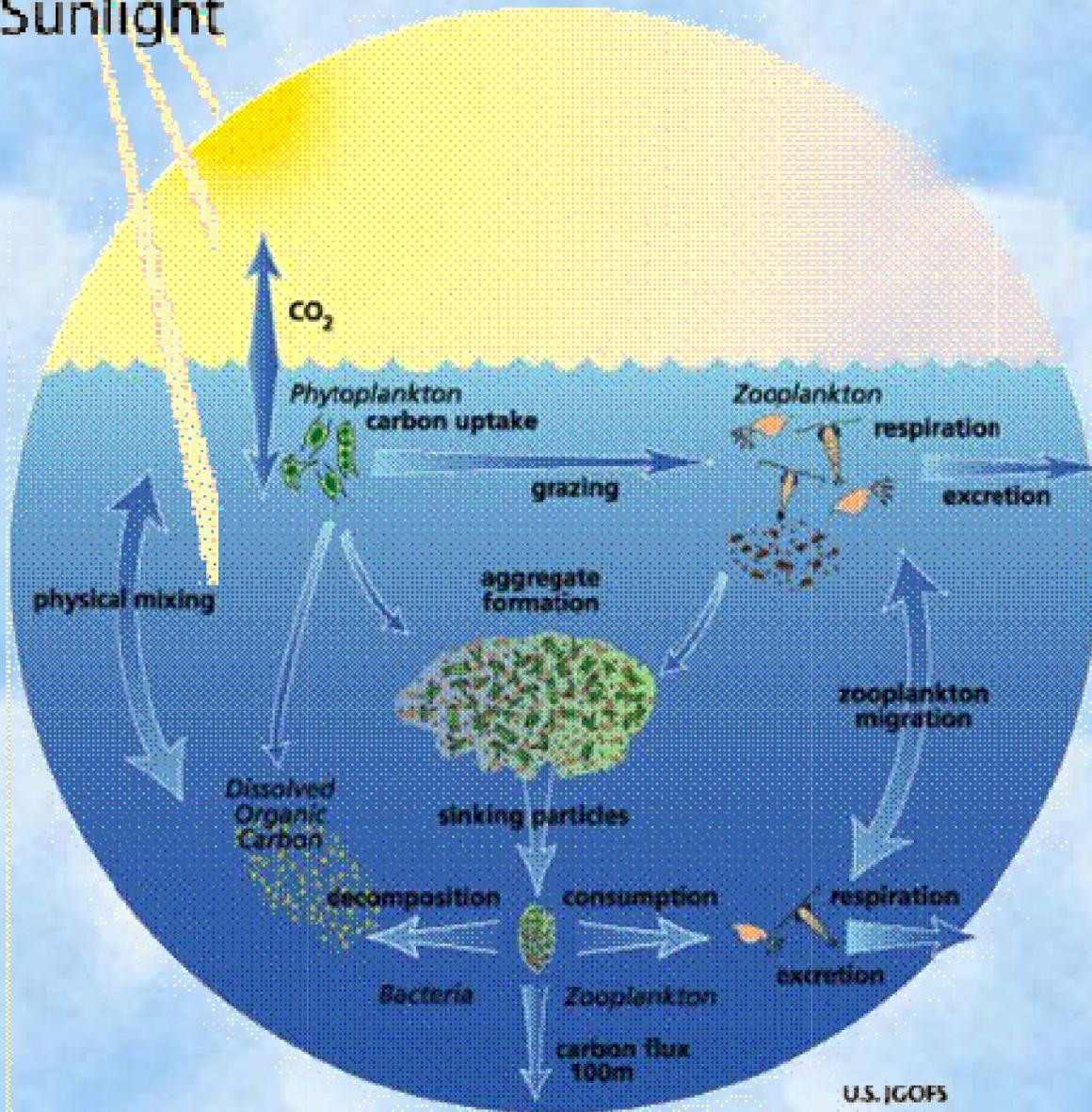


WHERE DOES YOUR CAR GET ITS ENERGY?

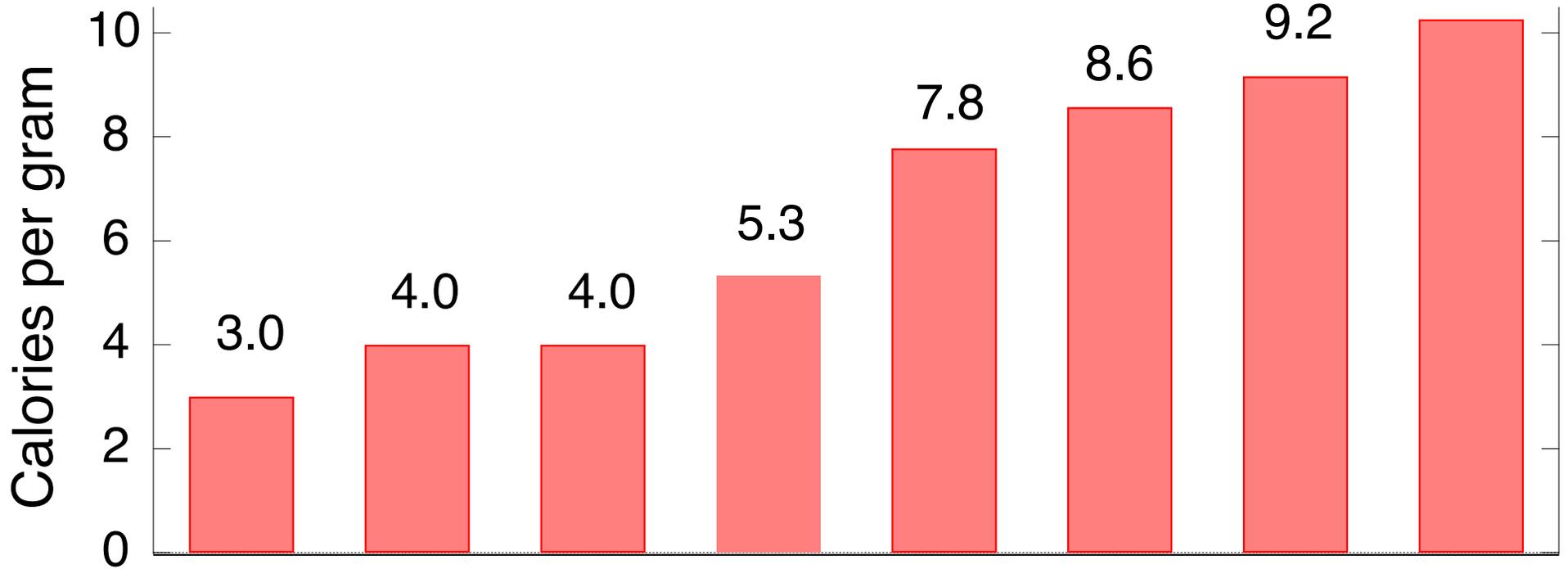




WHERE DOES GASOLINE GET ITS ENERGY?



CALORIE CONTENT OF ENERGY FOODS AND GASOLINE



We burn fossil carbon fuels to . . .



*Heat our
homes*

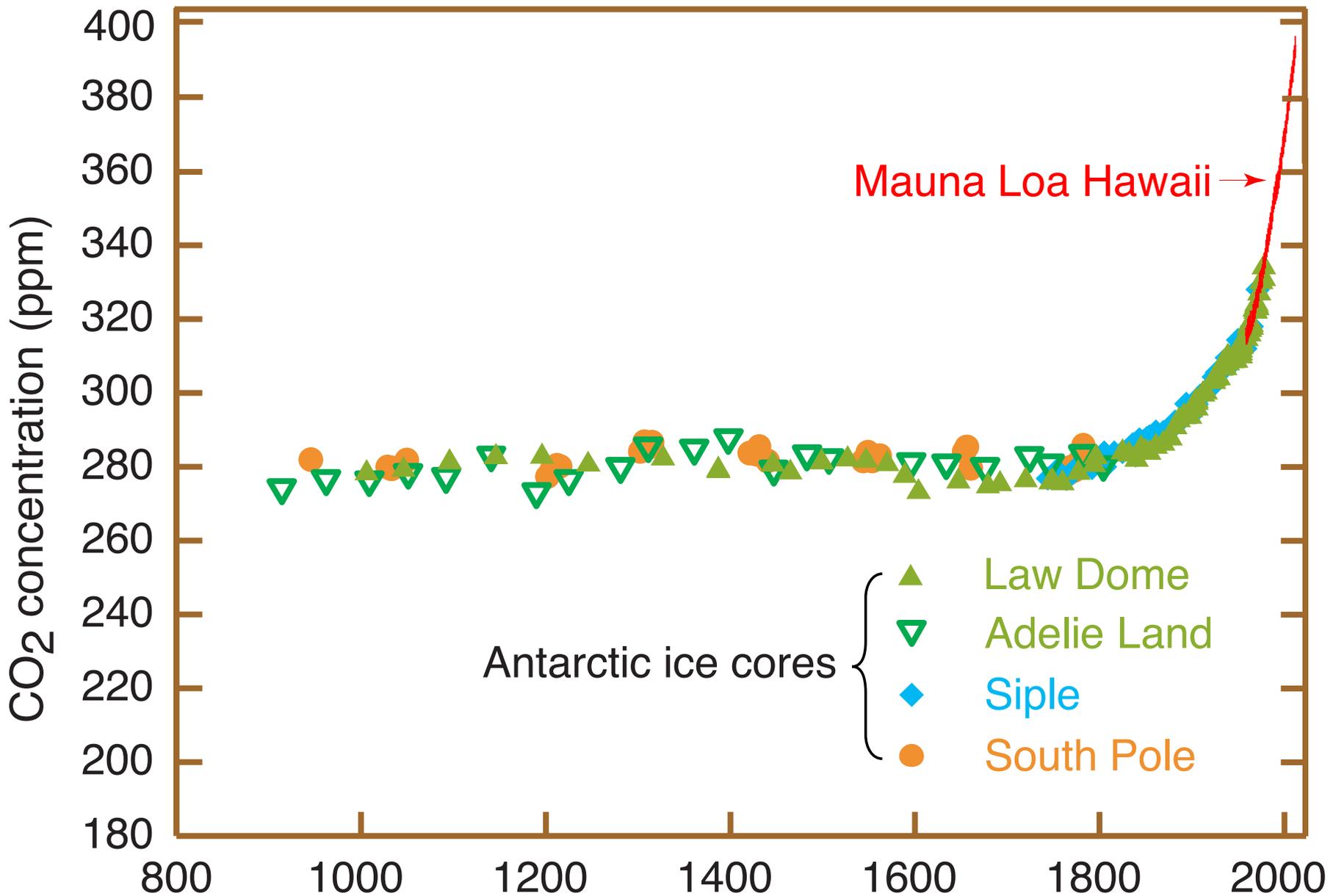


Generate electric power

*Move goods and people
from here to there*



ATMOSPHERIC CARBON DIOXIDE IS INCREASING



Global carbon dioxide concentration over the last thousand years

STUDYING EARTH'S CLIMATE HISTORY



New York Times, July 2, 2012

Lonnie Thompson, Ohio State University glaciologist, studies Earth's climate history by the ice archive.

***WHERE IS ALL
THIS CO₂
COMING FROM?***

***WHO IS
RESPONSIBLE?***



HOW MUCH CARBON IS IN A GALLON OF GASOLINE?



1 lb?

2 lbs?

3 lbs!?



5 lbs!?!?

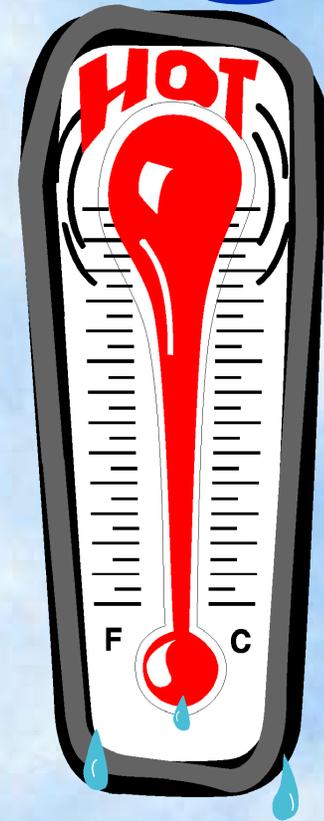
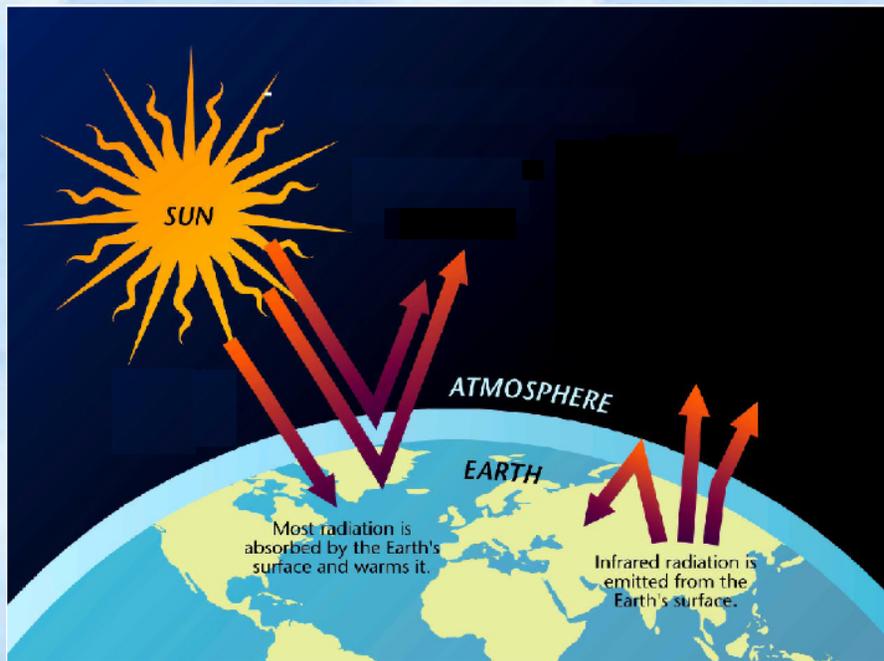


All of this carbon goes into the atmosphere as carbon dioxide when you burn the gasoline in your car.



Climate change

The Greenhouse Effect



SOLAR PHOTOVOLTAIC ENERGY

Decrease your carbon legacy by generating your own electricity



Decrease your electric bill, too; maybe even to zero!

THANK YOU!

Dr. Steve

