# leam Econauts

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#### EAS 3110: Energy, Environment, and Society

### Introduction

Concerns of global warming have brought on the necessity to lower carbon emissions. A viable approach to accomplish this task is through offsets not directly related to the production of energy. "The carbon Reduction Challenge" was a semester long project in which students competed to reduce CO<sub>2</sub> emissions by at least 10,000 Ibs. Our group accomplished this by recruiting individuals to reduce their red meat consumption and thereby offset the carbon emissions associated with red meat consumption.



Georgia Institute of Technology

## Background

**Average Annual Meat Consumption in the US in 2009** 

Beef with the highest consumption per capita

On	line	Ple	edge
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#4	COMPLETE Collector: EAS CRC 2013 (Web Link) Started: Tuesday, February 26, 2013 4:54:08 PM Last Modified: Tuesday, February 26, 2013 5:00:17 PM Time Spent: 00:06:09 IP Address: 143.215.98.33	Edit Delete
PAGE 2		
Q1: Please enter	your email address	
fatboy95ci@yahoo	.com	
Q2: Please confir	m email	
fatboy95ci@yahoo	.com	
PAGE 3		
03: How many da	we a week do you eat heat?	

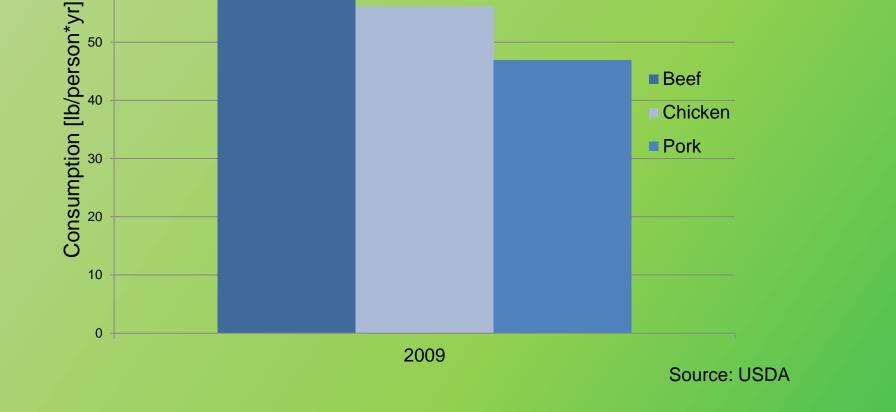
## Implementation

#### **Social Media**

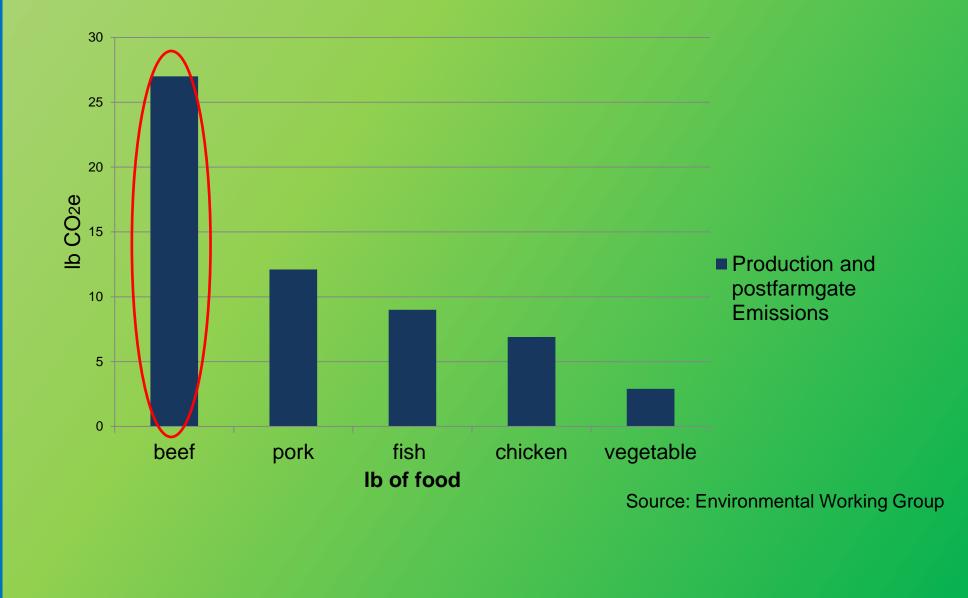
cebook 🛦 💷 🛛 🖻	earch for people, places and things Q Almu				
<b>ave Carbon, Save the V</b> Public <sup>·</sup> By Almut Schoffers, David Ch					
How is my	Friday, March 1, 2013 🕐 What time?				
steak related to global warming	♀ Earth				
🎙 ? 🤭	<ul> <li>Will you cut out beef consumption to save the Earth? http://www.surveymonkey.com/s/Q3RHHLF</li> <li>This group is for our Georgia Tech class project to try and reduce global carbon dioxide emissions by 10,000 lbs. during the months of March and April. The approach we are taking is to reduce the consumption of beef, a very carbon</li> </ul>				
ing (98)					
Almut Schoffers × (Host)	intensive food product.				
Jessica Wilh	Eating just 1 lb. of meat adds about 27 lbs. of carbon dioxide to the atmosphere! Here is where you come in! We need a group of people to help us out with our goal of saving 10,000 pounds. Below is a link to our survey to get you signed up for your fancy new diet.				
Mandy Becker					
Giulio Sinibaldi	You can go a week, a month, or both months. Any amount of time will help us and				
Selma Schoffers	the Earth, both of which will thank you. And you can go full veg-head or replace with chicken, fish, or even pork (bacon is still fair game) either way, just cut out the				
Claes Peter Westring	beef!				
See all guests (18 new)	http://www.surveymonkey.com/s/Q3RHHLF				
ybe (22)	Please, fill out the above survey and keep to your diet, we'll be checking in on you every 2 weeks via email! (If you mess up, that's ok, just let us know when we check in for the sake of our calculations)				
Usman Ahmed					

#### **Active Recruitment**





#### CO<sub>2</sub> equivalent emissions of common meats



**Expected total CO<sub>2</sub> reduction** 

	- Jes	ssica Wilh
1	Ма	andy Beck
Q4: How many days a week will you be replacing your beef consumption?	Giu	ulio Siniba
1 day	sel	ima Schot
${\tt Q5}{\tt :}$ What will you be replacing your meat consumption with? Choose all that apply	Cla	aes Peter
Fish (9 lb CO2/lb meat)	See a	all guests
Pork (12.1 lb CO2/lb meat)	Maybe (22	2)
Q6: How many weeks will you follow this diet?	Usr	man Ahm

The online pledge, made on SurveyMonkey, was used to account for participants' typical meat consumption, gather contact information, and track commitment. We turned to Facebook as a means of recruitment and also recruited participants in person.

# **Data Collection and Interpretation**

### **Organization of Participant**

### Information

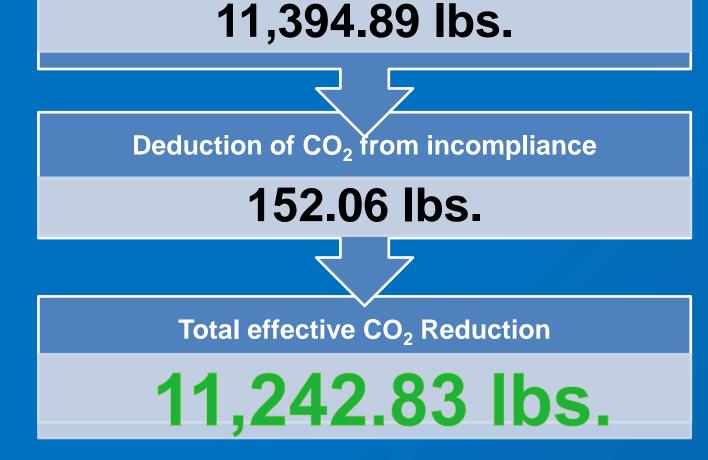
Name	e-mail	beef consumption [d/week]	beef replacement [d/week]	total without beef [d]	replaced with pork		Vegetable	Fish	CO2 reduction [lb]
				= # weeks *					
Almut	-	1	1	# day/week	0	0	1	0	36.68
Bryan	-	6	6	48	0	1	1	0	269.12
Daniel	-	6	6	48	0	1	1	0	269.12
David	-	6	6	48	0	0	1	0	293.48
Chris	-	4	4	32	0	0	1	0	195.65
Giulio	-	2	2	16	0	1	1	0	89.71
Chris	-	5	3	24	0	1	0	0	122.38

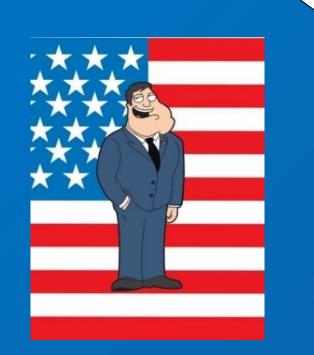
### **Emissions Reduction** Equation

 $\rightarrow$  (days with beef) \* (average beef consumption per day in US in lb]) \* (CO<sub>2</sub> eq. for beef)

### Assumptions

- $\rightarrow$  Intake of replacement is equal in terms of lbs
- $\rightarrow$  CO<sub>2</sub> eq. based on average of replacement foods





... is one third of an American's carbon emissions in an entire year

... is about what a Honda Civic emits per year



...they would reduce the  $CO_2$  equivalent of <u>2.5 times Plant</u> Bowen's emissions in a year

### Conclusion

Trying to make a difference for our environment through reducing carbon emissions does not have to end here. We believe we raised awareness of the impact of beef consumption on our climate through this project. Hopefully, we demonstrated how small changes to our daily lifestyles can help resolve this environmental issue.

### Now imagine...

If every American citizen replaced just one beef meal per week with a vegetarian meal...

1 meal per week





