

Meet
Extension Specialist
Cary Weiner



Cary Weiner is the Clean Energy Specialist for Colorado State University Extension. In this role, Cary develops energy education programming across the state, including programs for consumers, agricultural producers, volunteers, and K-12. Energy is of special interest to him because it intersects with policy and politics, money, and the environment – all things that people hate to talk about! ☺

Cary received a Master of Public Administration from the University of New Mexico and a Bachelor of Science in Ecology and Environmental Studies from Tulane University. Since entering the workforce, Cary has been Chief Endangered Species Steward for the Long Island Region of New York State Parks, Environmental Educator for the New Mexico Museum of Natural History, Budget Analyst for the New Mexico Department of Finance and Administration, and Renewable Energy Planner for the City of Santa Fe in addition to his current position.

He truly enjoys having the freedom to create and deliver resources that will help people make more informed energy decisions that in the long run may help both their bottom line and the environment. He is proud to have led the development of a Clean Energy Curriculum for Colorado Middle and High Schools, a Colorado Energy Master volunteer program, and a DIY Home Energy Audit.

Cary is very lucky to have a fantastic family – a wife and two young daughters – and a great home on two acres outside of Fort Collins. He loves to garden, chop wood, run, bike, hike, and talk like a pirate! 🏴‍☠️

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STEM Connections



Connecting Science, Technology, Engineering, and Math concepts to our everyday lives.

Energy Audit

The holiday gift that keeps on saving!

What would be the perfect gift for your parent this holiday? How about saving money on bills? That would be the best gift ever! Not only that, but your folks would keep saving month after month after month! Even better, it will be fun for you to do!

For this month's STEM activity, we are going to do something a bit different—conduct an **energy** audit on your home. Then, you can either present the audit to your folks for their holiday gift, or even do some of the simpler fixes and start the savings right away!

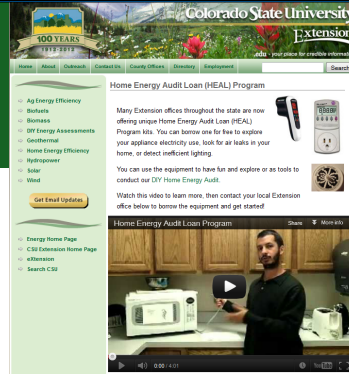
Every county extension office on the western slope has received a HEAL kit. Inside, you will find 3 different devices: a flicker checker (top with a pattern on it), a Kill-a-Watt Meter, that can tell you how many watts appliances use, and a thermal leak detector, to find the cracks around windows and doors and spots on the wall that need insulation. Cool!

EXPLORE IT - DESIGN IT - DO IT

What to do:

- Be sure to call the extension office to reserve the HEAL kit before you go to get it. Be sure to return it on or before its due date. The HEAL Kit is optional to conduct your audit, but will help you get accurate results and anyway is just fun to use!
- Go online to the CSU Extension website <http://www.ext.colostate.edu/energy/heal/> and watch the video to see how to work the instruments.
- Click on “DIY Home Energy Audit” (or go to <http://diyenergy.colostate.edu>) and follow the instructions to conduct the audit.
- If you have a smart phone, you can use that to conduct the audit. Just carry the phone around with you and enter your **data** on it. When you are done, email the audit report to yourself.
- As you collect the data, you may have some questions. Click on the green exclamation points you'll see on the website to get additional information to help you through your audit.
- With the hard copy (or smart phone) collect your data with the thermal leak detector and kill-a-watt meter. You can check florescent tubes with the flicker checker. While you are working, there is a column for you to make notes as well as a place to record your numbers.
- If you collected your data on a paper copy instead of a smart phone, enter those data on the website when you're done. It automatically calculates the results for you.
- Print the completed energy audit and evaluate the different steps that you can take to start the savings.
- Windows and doors are common places in a home that will lose a lot of heat in the winter or cool in the summer. Buy and caulk cracks around windows, cover the windows with insulate plastic, and add weather stripping around the door can mean tremendous savings in the monthly energy bill throughout this cold winter.

Wishing you a warm and festive holiday season!



Age Appropriate:
4th—HS grades

Time Required:
120 minutes

Materials:

- HEAL (Home Energy Audit Loan) kit (your local extension office has a free loan)
◦ <http://www.ext.colostate.edu/cedirectory/countylist.cfm>
- Computer
- Printer
- Pencil or pen

The Set-up:

- Call your county extension office and reserve the HEAL kit.
- If you don't have a computer or internet access, go to the library and open: <http://diyenergy.colostate.edu>
- Click on “DIY Home Energy Audit”
- Print the spreadsheet.
- Pick up the HEAL kit.
- You're ready to go!

The Clean-up:

- Bring back the HEAL kit when you promised, so the next person can use it.

Power Words

- **data:** numbers and values derived from scientific experiments; factual information organized to reason or make decisions
- **energy:** useable **power** or heat, or a source of usable power (e.g. petroleum)
- **force:** accelerate (change the speed) an object in the direction of its application
- **power:** motive **force** by which a physical system or machine is operated

Fascinating Fact from Natural Resources Defense Council: We estimate TVs in the United States consume more than 46 billion kWh every year, which constitutes about 4 percent of U.S. residential electricity use. This is roughly the same amount of electricity used annually by all of the households in the state of New York! Annual TV energy use in the United States, 80 percent of which is used in active mode, results in \$4.7 billion in consumer utility bills and about 31 million tons of CO2 emissions from power plants.