



# Citizen Science in Alaska



Corlene Rose & Michael Rasy  
Integrated Pest Management Program  
Cooperative Extension Service

<http://www.uaf.edu/ces/ipm/>



## **Our Mission:**

The Alaska Cooperative Extension Service engages and supports the people and communities of Alaska, connecting them with their university. We provide fact-based and practical information while bringing Alaska's issues and challenges to the university.



The Alaska IPM Program has adapted to meet public demand while supporting dynamic, local, statewide & national cooperative partnerships.

**PROVIDING: Educational Outreach & Services**

**SCOUTING: Early Detection of Pests & ID**

**ASSISTING: Pest Monitoring & Data Collection**

### **IPM staff & seasonal Technicians Statewide**

*Anchorage, Fairbanks, Juneau, Kenai Peninsula, Matanuska-Susitna Valley & Delta Junction*

- Approximately 14,000 public contacts - Annually





**CES  
District  
Offices:**

Nome

Bethel

Fairbanks

Delta Junction

Palmer

Anchorage

Soldotna/Kenai

Juneau

Sitka

# Digital Diagnostics Imaging

## *Western Plant Diagnostic Network (WPDN)*

### Collaborating with

**University of Alaska Fairbanks**

**USFS State & Private Forestry**

**USDA APHIS**

**UC Davis**

**Oregon State University**

**State of Alaska:**

- **Division of Forestry**
- **Division of Agriculture**

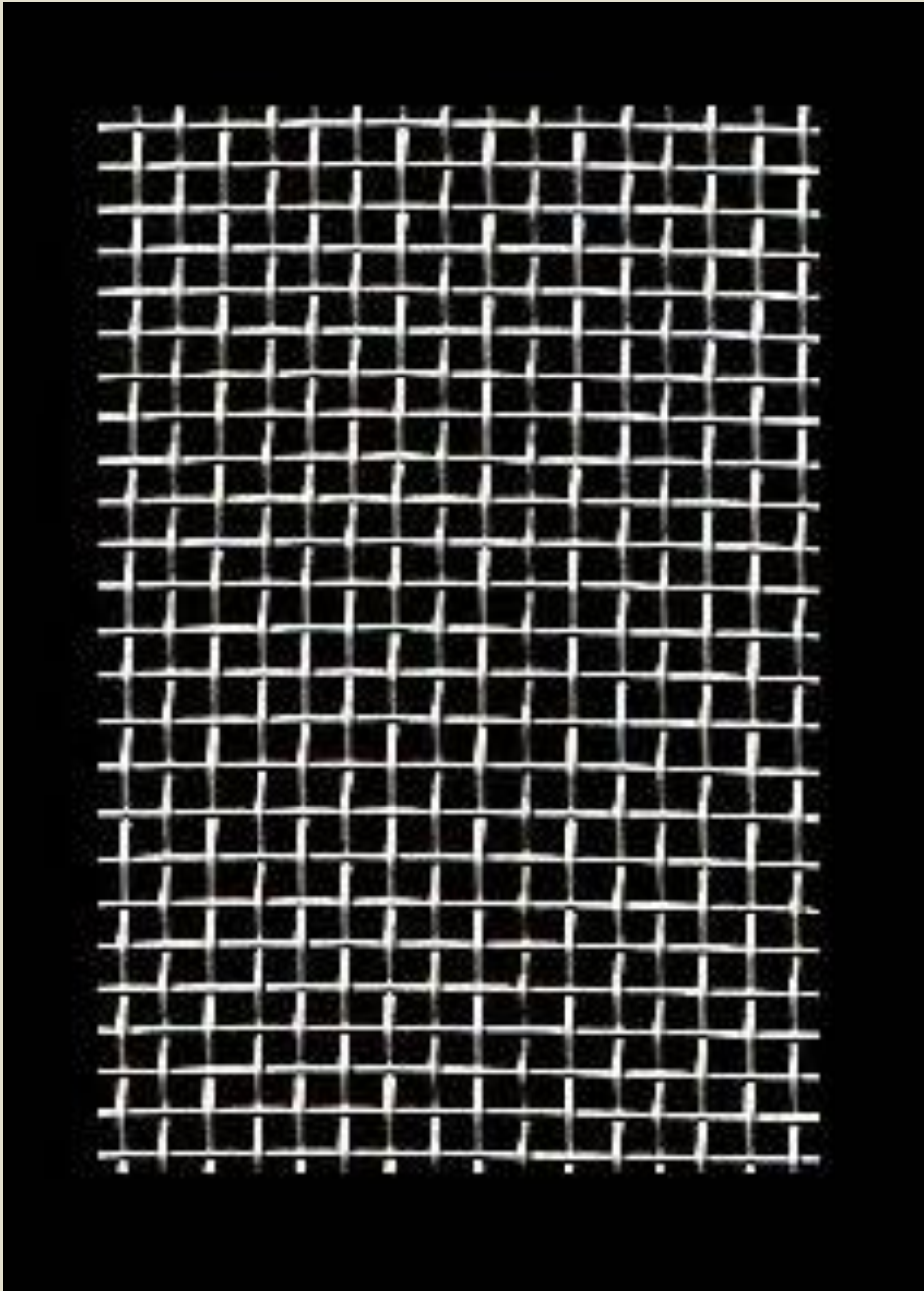


*Specimen Identification system – accessing numerous experts*

## Public Outreach & Invasive Species


**“The greatest instrument  
in the prevention & control  
of invasive species...  
is public education.”**

*(Courtesy: Penn State Dept. of Conservation & Natural Resources)*



Alaska is protected from invasive species in some ways:

- Few people
- Few roads
- Little development
- Cold climate



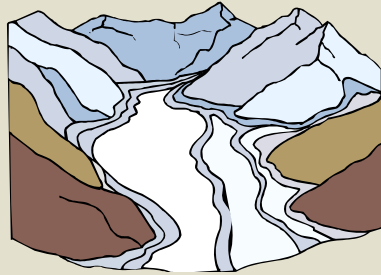
At the same time, Alaska is vulnerable in many ways:

- Extremely low tree species diversity
- Some tree species/ecosystems are stressed, apparently from changing climate
- Large geographic area to keep track of and few people to do it

- Lack of enthusiasm for government regulation
- Many people who believe it can't or won't happen here
- Many people who are unfamiliar with the idea of invasive species



# A changing climate can impact many things...



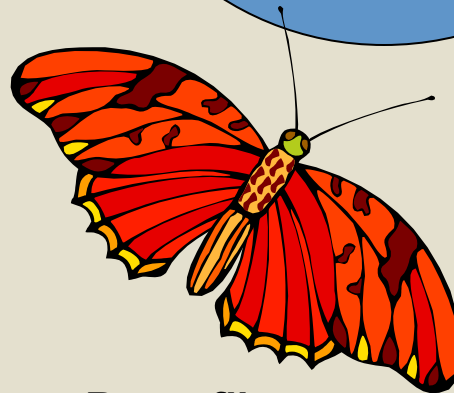
**Glaciers melting**



**Flowers blooming later**



**Oceans rising**



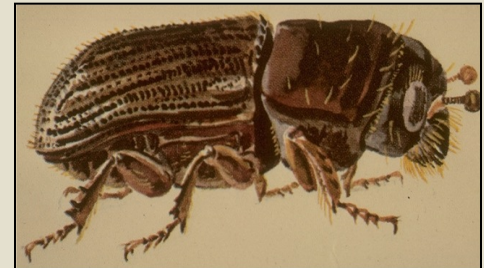
**Butterflies migrating**

**Climate**  
(Temperature  
Rain, Snow  
Wind, Lightning  
Drought  
Severe weather  
Others...)



**Polar bears dying**

**Bark Beetle attacking**



(Holsten 2000)

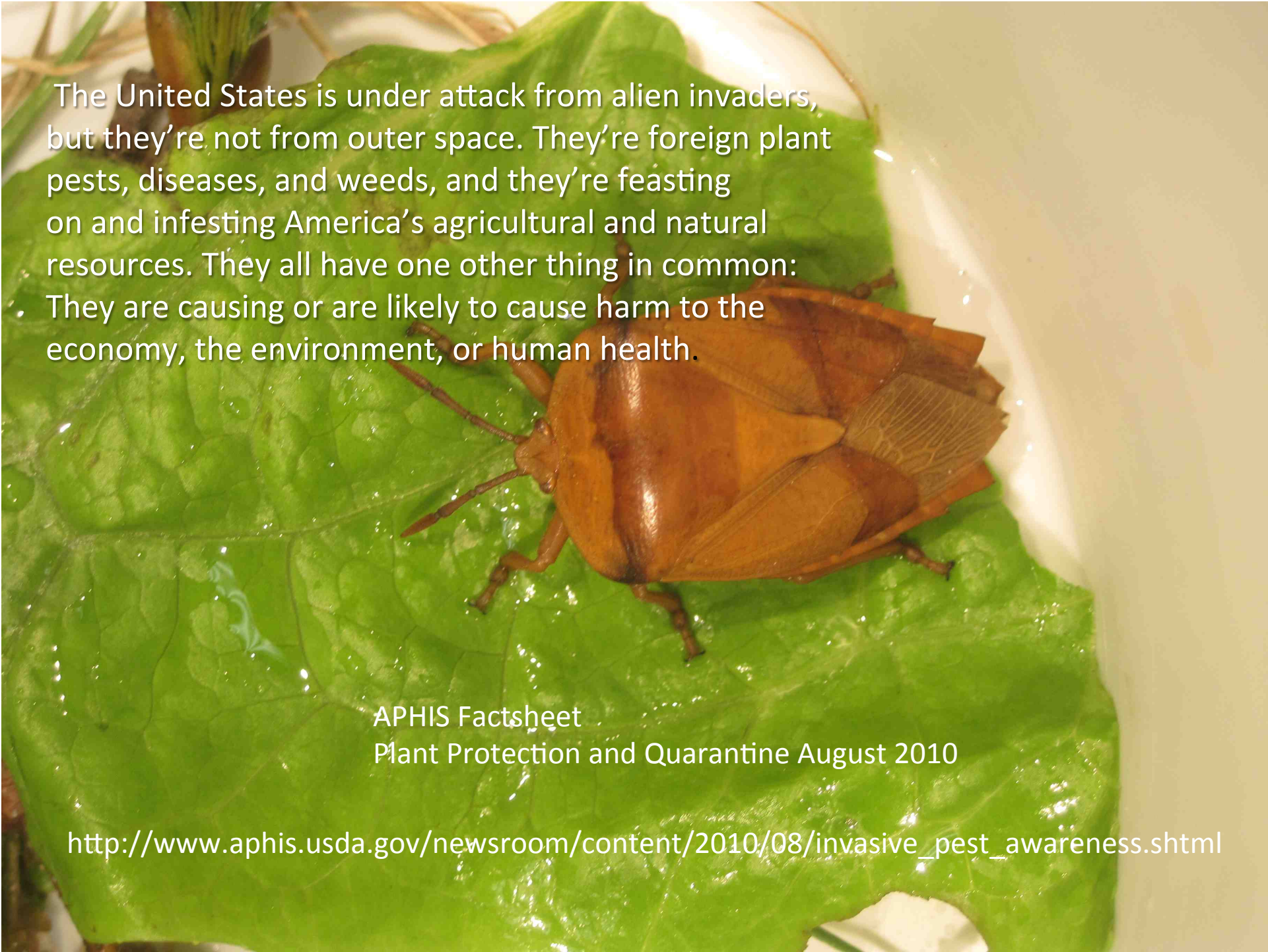
*“the ultimate integrated science”...*

# What is a high risk pest?

- A pest not currently known to occur in the continental United States = exotic



- A pest with limited distribution in the continental United States, but economically important if it spreads.

A close-up photograph of a brown, shield-shaped insect, likely a stink bug, resting on a green leaf. The insect has a prominent, shield-like pattern on its back and is positioned on a leaf that has a distinct hole eaten in it. The background is a plain, light-colored surface.

The United States is under attack from alien invaders, but they're not from outer space. They're foreign plant pests, diseases, and weeds, and they're feasting on and infesting America's agricultural and natural resources. They all have one other thing in common:

- They are causing or are likely to cause harm to the economy, the environment, or human health.

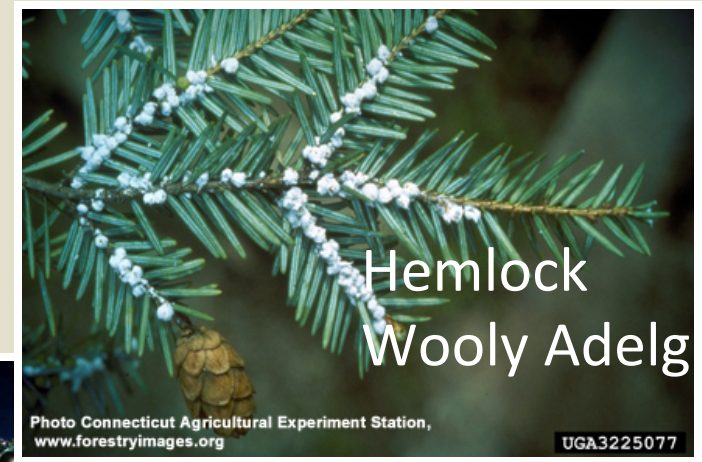
APHIS Factsheet  
Plant Protection and Quarantine August 2010

[http://www.aphis.usda.gov/newsroom/content/2010/08/invasive\\_pest\\_awareness.shtml](http://www.aphis.usda.gov/newsroom/content/2010/08/invasive_pest_awareness.shtml)

# Northeast Significant Pests



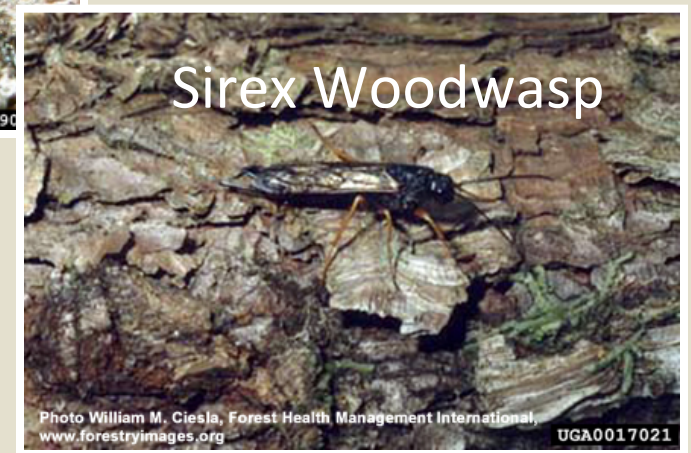
Asian Longhorn  
Beetle



Emerald  
Ash Borer



Soybean Aphid







## 2010 Pest Detection Surveys in Alaska:

### INSECTS:

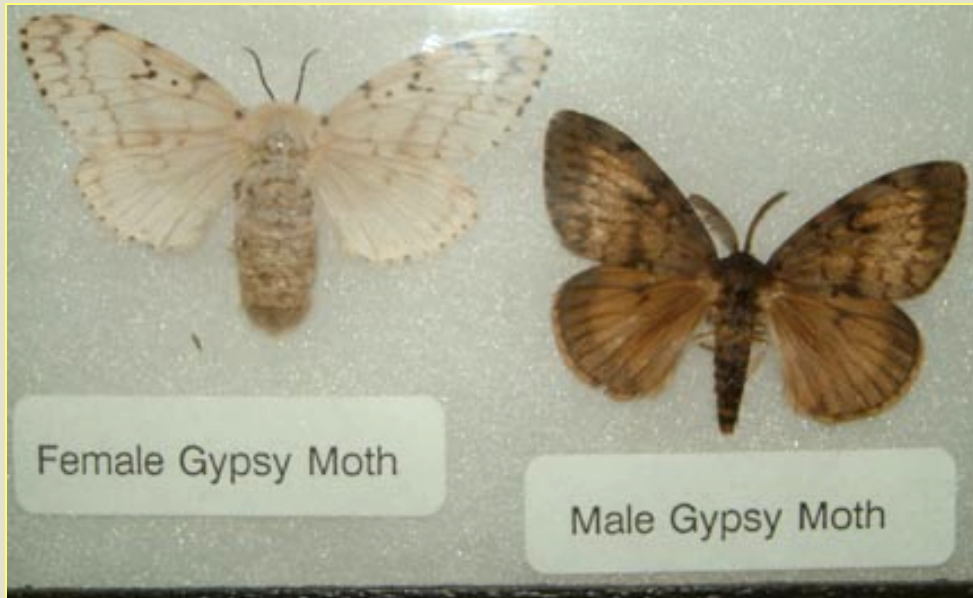
- Gypsy Moth (European & Asian) (*Lymantria dispar*)
- Nun Moth (*Lymantria monacha*)
- Pink (Rosy) Gypsy Moth (*Lymantria mathura*)
- Siberian Silk Moth (*Dendrolimus superans sibiricus*)
- Emerald Ash Borer (*Agilus planipennis*)
- Light Brown Apple Moth (*Epiphyas postvittana*)
- Green Alder Sawfly (*Monsoma pulveratum*)

### MOLLUSKS:

- Exotic Terrestrial Slugs (*Arion* spp.) and Snails



# Gypsy Moth, Asian and European *Lymantria spp.*



John H. Ghent, USDA Forest Service

**Also:** Nun moth, *Lymantria monacha*  
Siberian moth, *Dendrolimus superans*  
Rosy Gypsy moth, *Lymantria mathura*





## Geometrid moth outbreaks

*Epirrita autumnata*, Autumn moth  
*Operophtera bruceata*, Bruce spanworm  
*Eulithis destinata*  
*Eulithis propulsata*





**Western Tent  
Caterpillar**  
*Malacosoma californicum*

# The 1<sup>st</sup> Step of IPM

**IDENTIFY**

**the Organism**

*(or whatever the problem is -or- seems to be)*

# What can you do?

- Be familiar with common regional and local pests
- Know seasonal pest patterns.
- Know typical weather patterns
- Learn about common (non-pest) organisms & life-cycles
- Participate in Citizen Science

Brown Marmorated Stink bug

Birch shield/stink bug



Found in King Cove, AK

**Pest**

**Not a Pest**



You are here: [ANTHC](#) > [Community Health Services](#) > [Community Environment and Safety](#) > [Climate and Health](#) > LEO Home



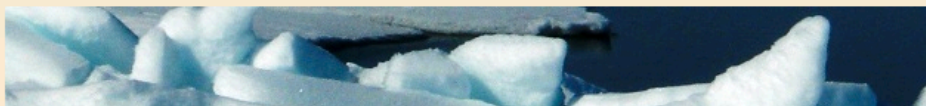
### Local Environmental Observer (LEO) Network

Arctic communities are changing due to environmental impacts, climate change and development. Monitoring the environment is important for understanding the risks and benefits and for adaptation. The LEOs are the eyes, ears and voice of environmental change in Alaska communities.



We are tribal environmental professionals who apply traditional knowledge, western science and technology to document unusual plants and wildlife, extreme weather, erosion, flooding, droughts, wildfire and other events that can threaten food security, water security and community health. Checkout our LEO monthly maps and other links to learn more.

LEO Alaska ([Flickr](#)) Photostream & LEO Alaska ([YouTube](#)) Channel



Return to: [Center for Climate and Health](#)

**LEO Oct 2012 Map**

Map Sat Ter Earth

Map navigation icons: back, forward, zoom in, zoom out, full screen

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October 2012

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**"Citizen Scientists"** have made some of the most significant pest detections in recent decades, including the Asian Longhorn Beetle and other invasive species.

*In Alaska, the early detection and rapid response to invasive pest introductions is key to prevention.*

**Citizen monitoring** is how you can help.



## Thank You from “AKIPM”

<http://www.uaf.edu/ces/pests/>

<http://www.uaf.edu/ces/ipm/>

<http://www.uaf.edu/ces/ipm/cmp/>

