

## **NOTICE**

The ideas assembled in this presentation are for the benefit of the selection committee alone.

Real world applications and implications subject to likely change.



# Renewable Energy Program

Powering the change we wish to see for Alaska's future

Presented by  
Robert Shields  
Ecological Industrialist (lorax)

# Introduction

My vision for the Matsu renewable energy program and its niche in Alaska's energy market as the core of a prosperous industry and economy.

My 5 year plan to work with Matsu and the UofA system to develop a comprehensive sustainable professionals degree certificate program

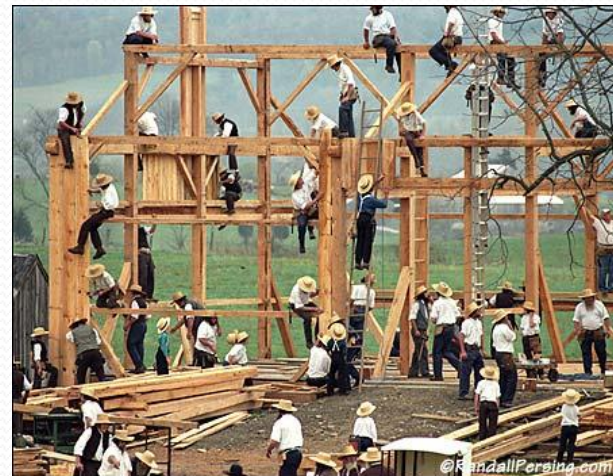
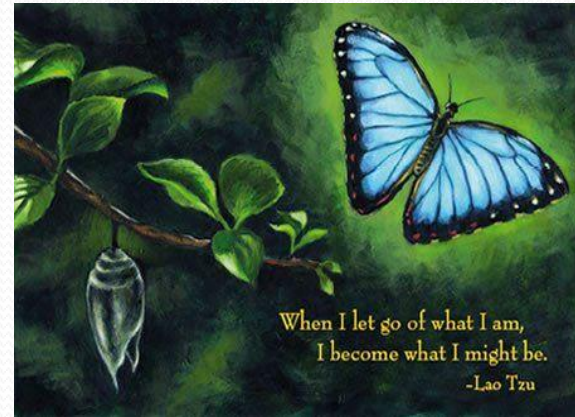
My qualifications for implementing this plan and realizing this vision. My ambition is to make a contribution to creating a world that is safe and healthy for our children and all life sharing our home.

# Earth 2112



# We Got Smart

- Smart about energy
  - Smart about food
  - Smart about resources
  - Smart about economics
  - Smart about policy
- 
- Smart schools
  - Smart people
  - Smart communities
  - Smart transportation
  - Smart industry
  - Smart cities



# Smart about Energy



Isolated Energy Transmission is

- Inefficient
- Vulnerable
- Costly to maintain
- Inflexible to changing needs

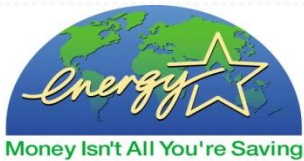
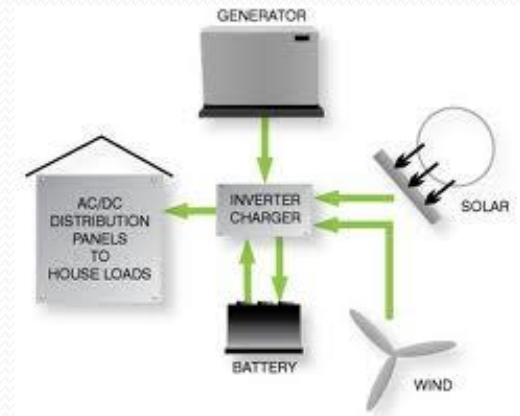


BECAME



Onsite Energy Generation is

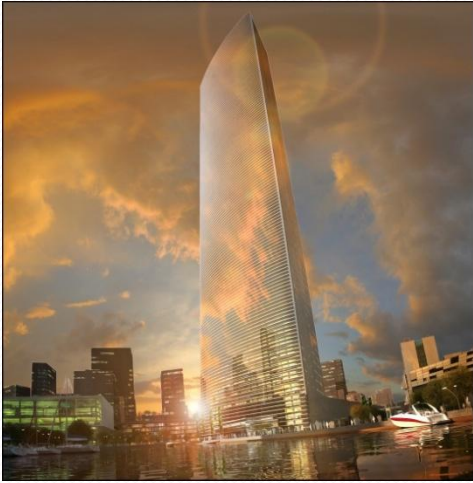
- Cost effective
- Resilient
- Creates jobs
- flexible to changing needs



A 20% increase in energy efficiency across the board offset eliminated the need for several large scale centralized power generation project.

It also trained a generation of technicians, engineers, construction managers, and architects educated in the Uof A system

# Smart about Food



18 story greenhouse construction in Sweden 2013



Not exactly a new idea



Solution to many local challenges



- Year-round crop production
- 1 indoor acre is equivalent to 4-6 outdoor acres or more depending upon the crop
- No weather-related crop failures due to droughts, floods, pests
- All food is grown organically: no herbicides, pesticides, or fertilizers

# Smart about Resources



The application of community scale technologies allowed remote communities to rebound with economic opportunities to mine their landfills and establish advanced life systems as parts of local resiliency strategies



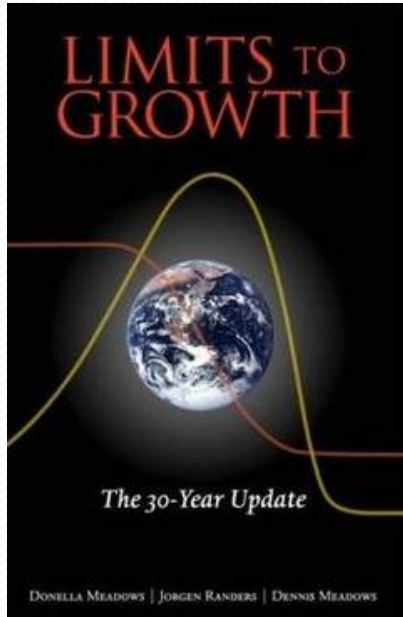
The average Alaskan produced 6.5lbs of trash each day. 2 lbs more then the national average.

We spent energy to bring things up here (packaging) which goes directly into the trash



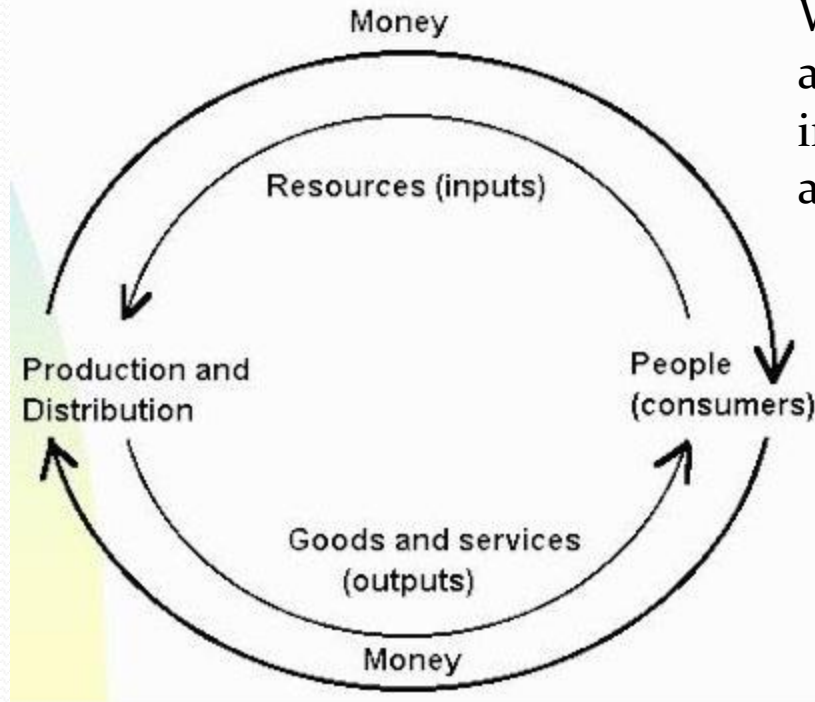


# Smart about Economics

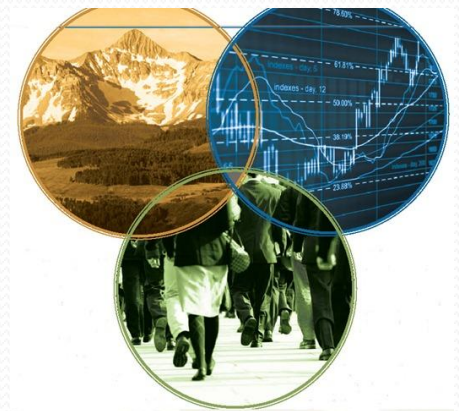


Science gave us the tools to give value to functioning ecosystems

Trash became a commodity as valuable as gold



We started valuing people and started using things instead of valuing things and using people.



Healthy planet+ healthy people= healthy profits

# Smart about Policy

We have no glorious leaders. We lead ourselves and each other

Politician's were reminded that people did not exist to give them position, their position exists to provide people with freedom. The Occupy Wall street Movement saw to that. This led to the Clean Sweep Act of 2016 which broke all connections between campaign politics and government operations.



**IN TRANSITION**  
From oil dependence to local resilience

Alignment of policy created efficiency of resource management which accelerated the transition to a clean energy economy



80% increase in voter turn out

60% increase in citizen participation



# Smart Schools



Progressive net metering can turn our schools into clean power plants providing teachers resources to live on and work with.

Just like a good harvest requires the tender care of a dedicated farmer so nurturing critical thinkers requires the tender care of a funded teacher.



Who is getting the better education??



I see working people



# Smart People



Scientists



Technicians



Electricians



Architects



Engineers



Policy Leaders

Attendance up 30%  
Graduation up 45%  
Drop out rate down 80%  
Teen Pregnancy almost non existent  
Gang violence drop 72%  
Youth addiction drops 90%

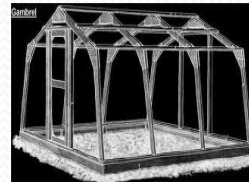
Poverty was eliminated when people were no longer dumb enough to be kept down.

# Smart Communities

## Sustainable Land Use Planning



neighborhoods into communities

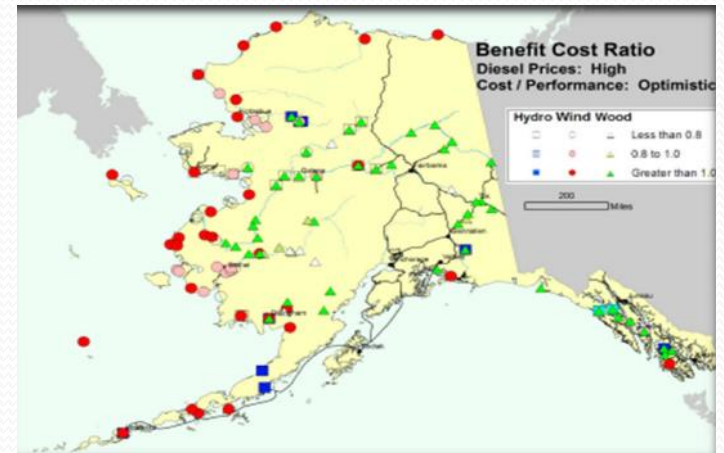


Locally developed solutions to meet local needs

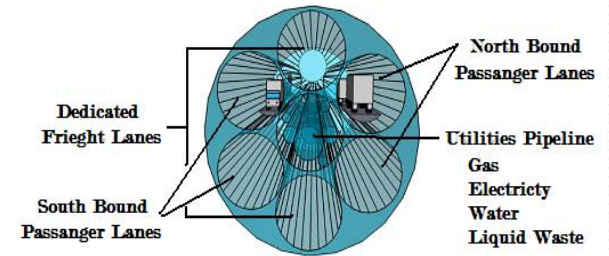
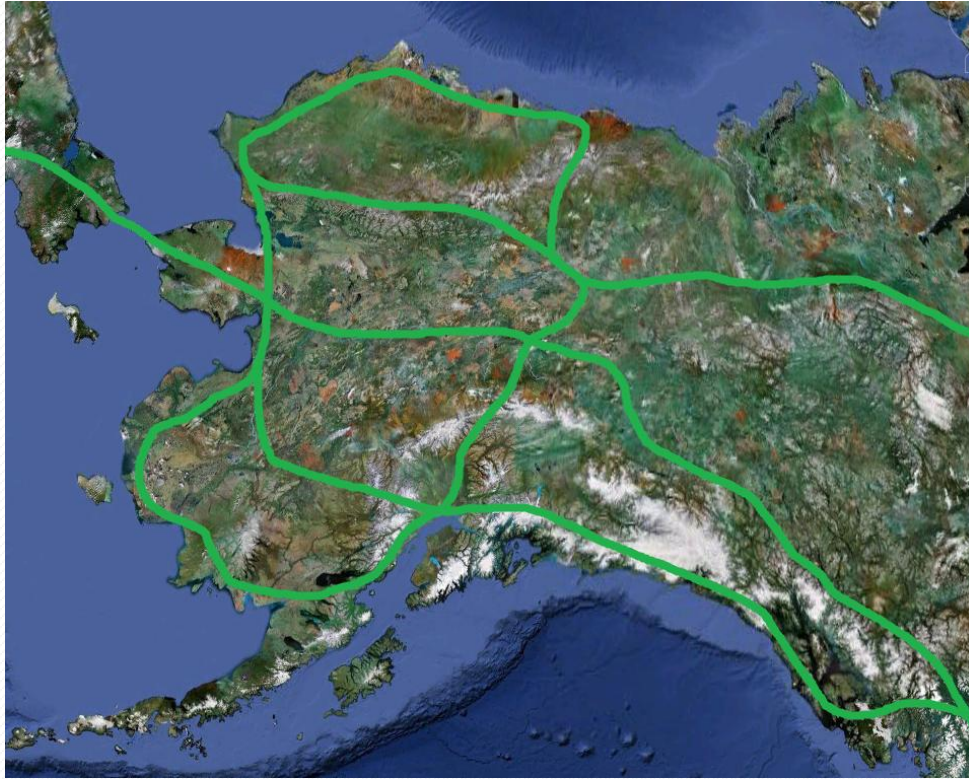


Space based solar to power remote communities

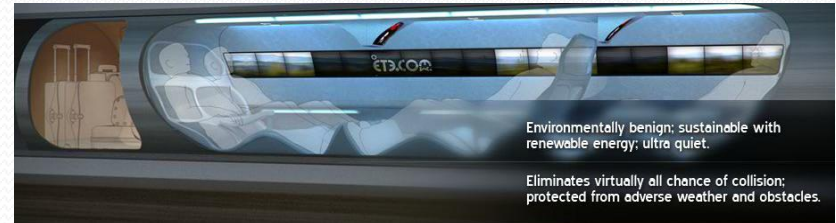
- Community Orientation
- Solar electric/hot water
- District waste heating
- Alternative transportation



# Smart Transportation



*\$0.02 cents of electrical energy needed to move 350 mph*



## Space Travel on Earth™

N.Y. to L.A. In 45 minutes

Washington D.C. to Beijing In 2 hours

350mph local - 4000mph International

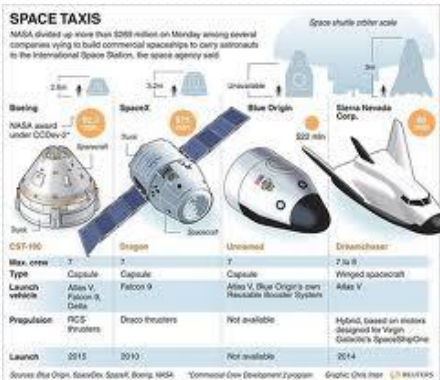


# Smart Industry



Alaskan's realized the ground was the best vault to protect their limited natural resource investments. Those companies whose focus was in these areas got on board with idea we needed a new direction.

Current reserves were reinvested into infrastructure projects which allowed us to produce critical goods, maintain a resilient clean energy supply, and attract commercial space to Alaska.



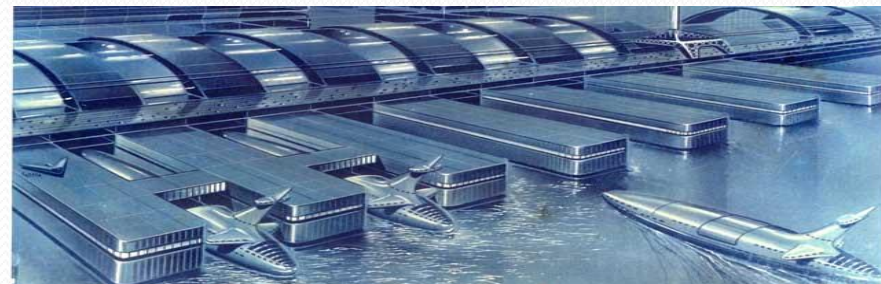
## Essential Life Science Support



Space camps  
 Prepper's Classes  
 Professional Development

# Smart Cities

A Future By Design





# The Path Forward



# The 5 Year Plan

## Goal:

Establish a comprehensive Sustainable Professionals (SP) degree program for the UofA system with the Matsu campus as the “power plant”

### **Year 1: Place Matters**

Technical proficiencies; develop curriculum scope; build teams; framework plan for campus models; creative investment pool

### **Year 2: Core Values**

Unified vision and mission; campus alignment; community outreach; framework plan for SP degree program

### **Year 3: Walking the Talk**

Complete campus model; test run on SP degree program; framework for R&D

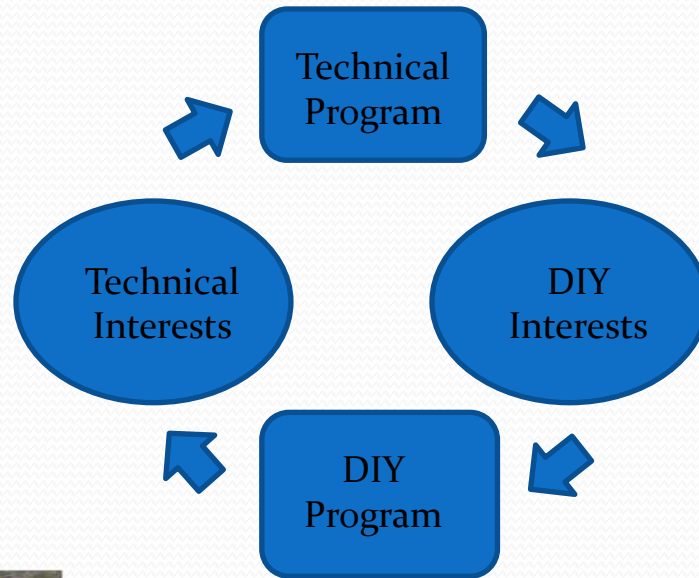
### **Year 4: Up and Running**

First offering of full SP program; all major locations now living campus models; statewide comprehensive sustainable extension database compiled for general access

### **Year 5: Unification**

Unified vision shared with public schools, government, indigenous corporations; utilities adopt Green Wave incentive program and progressive net metering standards; Alaska Environmental Trust is established.

# Year 1: Place Matters



Teach the Teachers



Build Teams

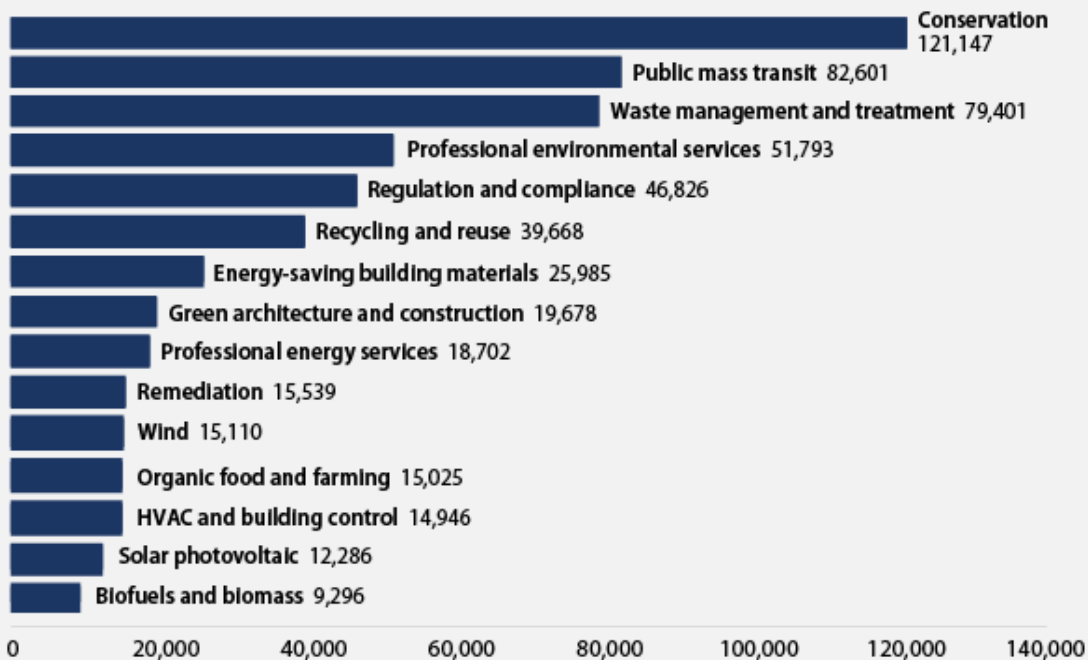


Survey the Landscape

# Opportunities for Growth

## Top 15 sectors of green job growth

Absolute change in jobs, 2003-2010



Source: Brookings Institution and Battelle's Technology Partnership Practice, "Sizing the Clean Economy" (Washington, 2011)



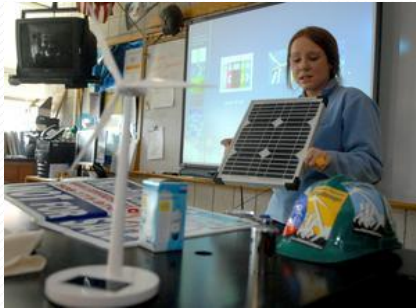
*A degree is only as good as the career it helps you build*

# Making the Connection

## Introductory

Age appropriate 5-13

- Field trips
- School projects
- Class presentations



## Fundamental Studies

Age appropriate 13-18

- Six week courses
- In-depth studies
- Fundamental focus

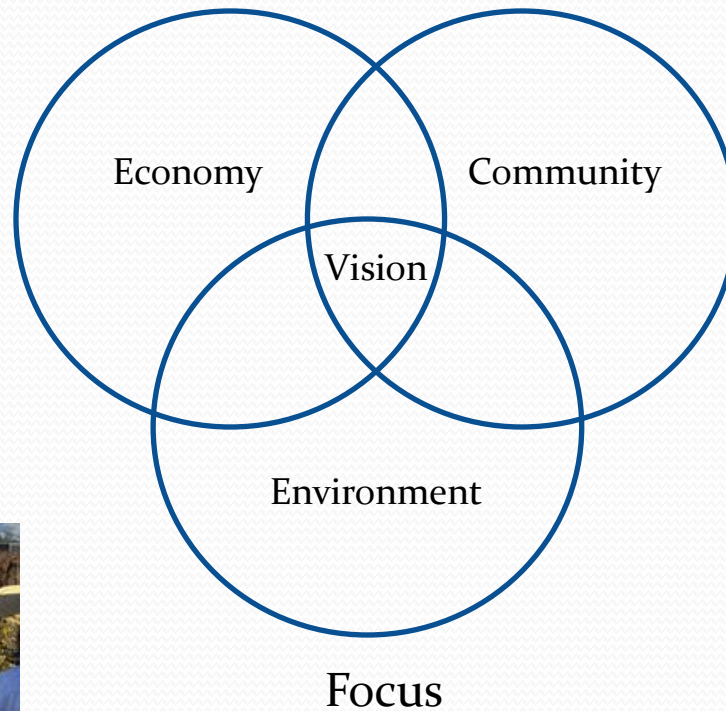
## Job Training

Age appropriate 18+

- Basic soft skills
- Technical specialization
- Employment assistance



# Year 2: Core Values



Community Outreach

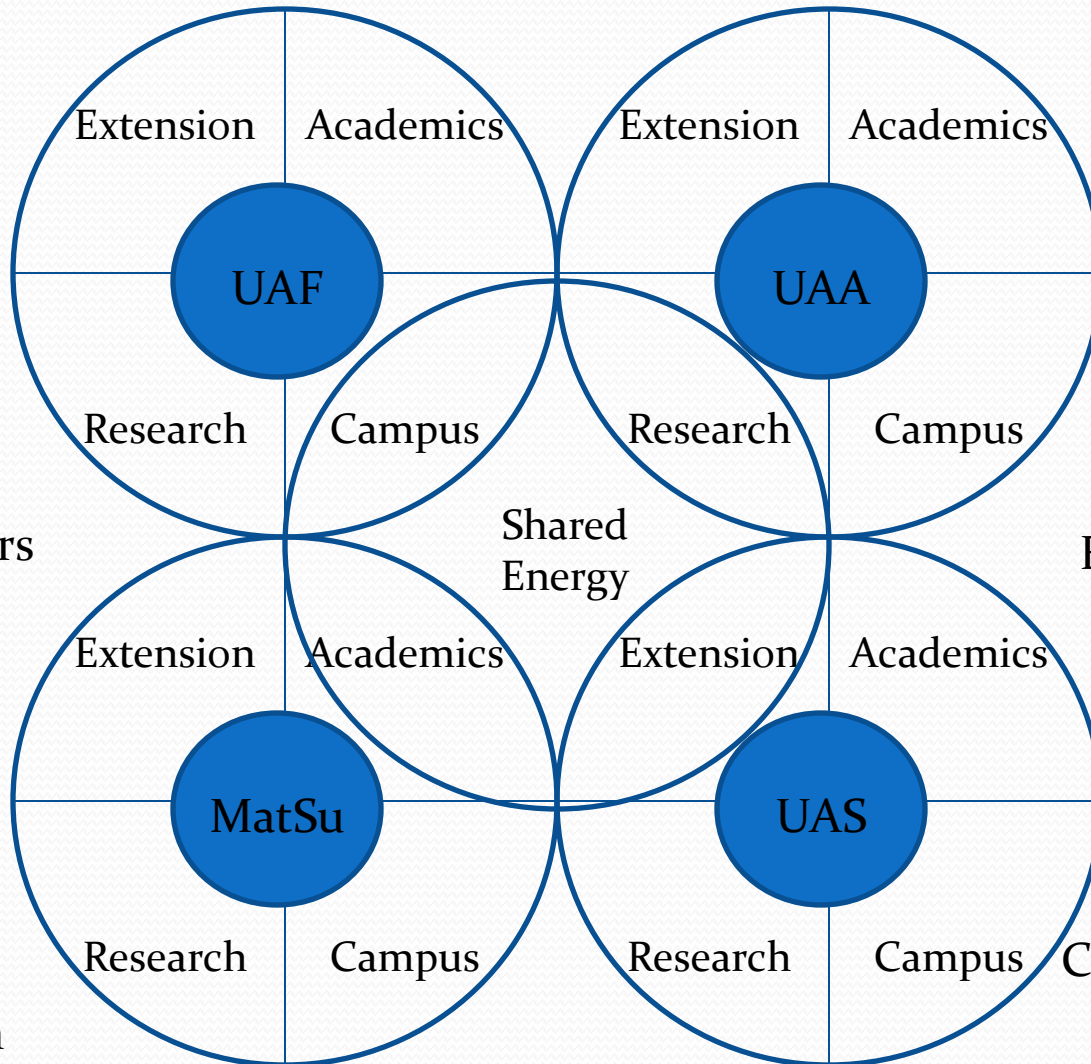


Framework plan

# Current Strategy

Isolated Campus  
Development

Inefficient  
Resource Sharing



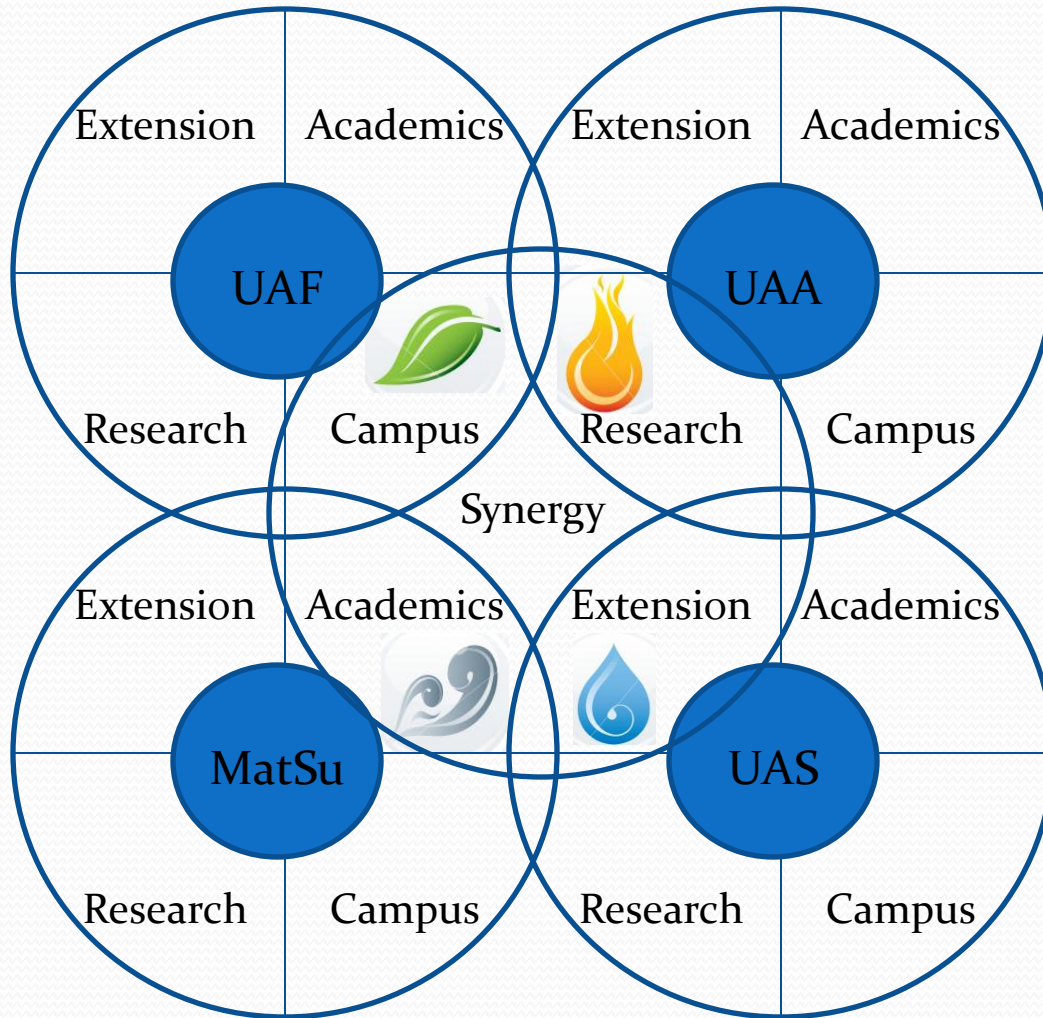
Divided Sponsors

No Collective  
Bargaining Power

Lacks Cohesive  
Degree Program

Compartmentalized  
Learning

# Natural Strategy



Bio-energy  
Building Science  
Transportation

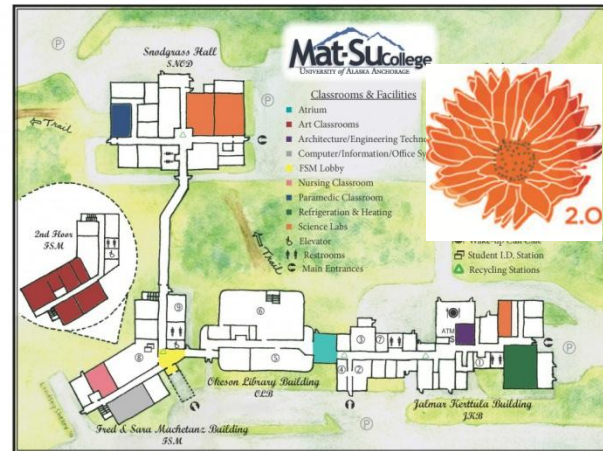
Geothermal  
Policy  
Law

Wind  
Clean Energy  
Resource Mgmt

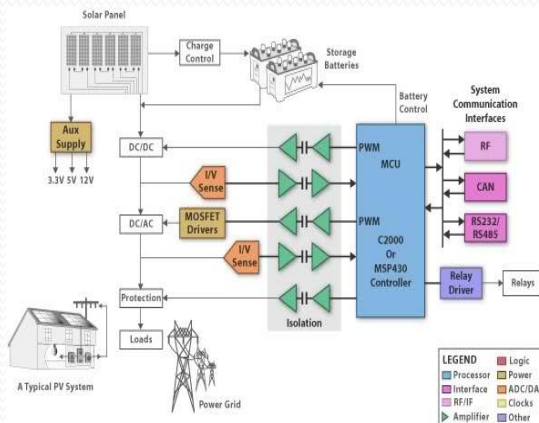
Hydro  
Biology  
Chemistry



# Year 3: Walking the Talk



Mapping Out the Future



Systems Check

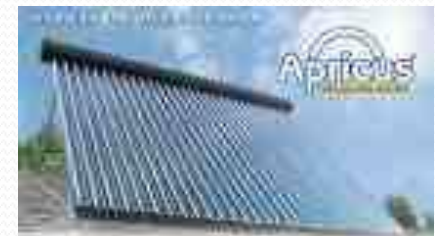
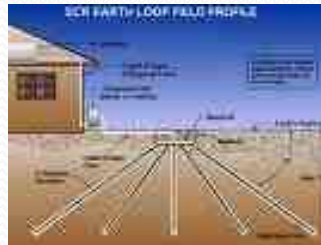


The Right Stuff

# At The Center of It All

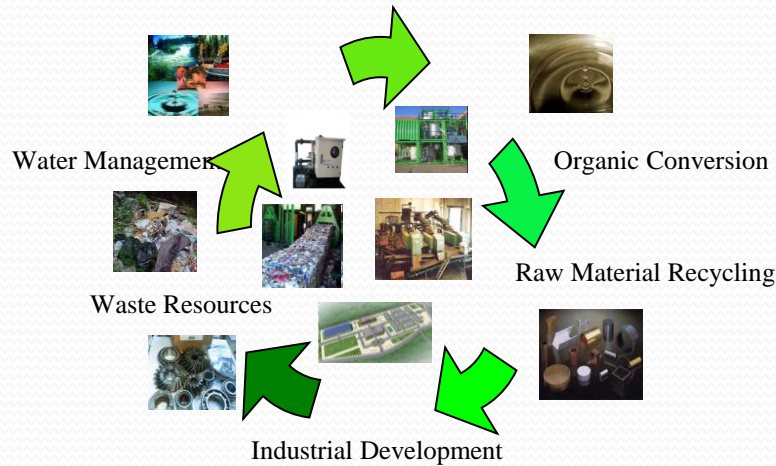


**Mat-Su College**  
UNIVERSITY OF ALASKA ANCHORAGE



# The Final Frontier for Alaska

In putting our waste to work, we found gold



- Business Friendly Environment
- Adaptive technical Services/ Equipment
- Cheap Raw Material
- Affordable Clean Energy
- Advanced Life Science Research



# Year 4: Up and Running



Unified Vision and Mission



Degree Program Offered



Secure  
Comprehensive  
Database

# The Next Degree

The challenges of the world require holistic, critical system thinkers. This is what people pay money to become.

Professional

People are awaking to their responsibilities to leave the world better than they found it. We can give them the tools to begin a career of change

The Sustainable Professional  
is:

Scientist



Teacher



Thinker



Technician



Creator



Steward

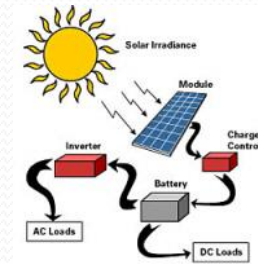
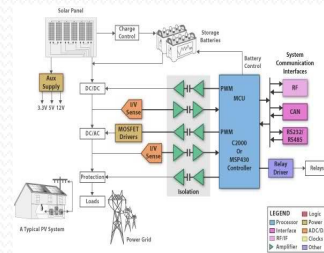
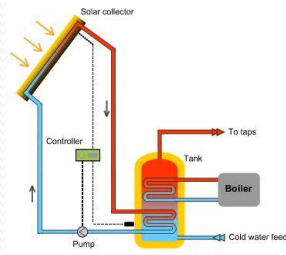


Leader

A mixture of historic and scientific study, field works, and quality accreditation create an employee in high demand.

As educators I don't believe it is our job to provide answers. Instead we have the responsibility to help people learn to ask the right questions.

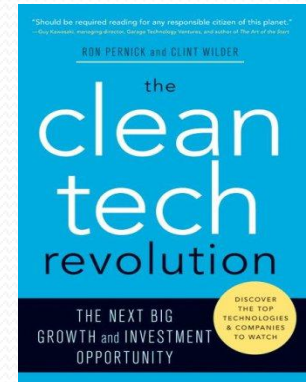
# Making It Real



Any online program can offer knowledge and a certificate

*Wisdom is the experience of knowledge*

Beyond academic study, a comprehensive education process would include:



Campus Taskforce

Internships

Community Outreach

Guest Speakers

See

Touch

Taste

Hear

# Year 5: Unification



Shared Vision



Trust



Incentives for Change

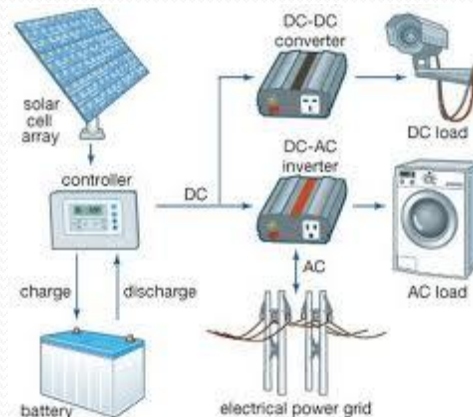
# Energy Commonwealth

Net metering is a federal law that allows individuals to sell excess power back to the utility for credit.



Smart meters measure power going in either direction

Although the energy is always flowing around, net metering turns your local utility in essentially an battery allowing you to “store” energy for later use





# Return On Investment



Many communities have developed their own programs for managing the transition to a more sustainable and resilient society. In Oregon the group managing public purpose charges for utility customers which covers upfront costs on conservation and clean energy measures



A healthy planet is a profitable investment.

# The Right Perspective



# Change Happens

One person, at the right time, and in the right place can change the world forever. It has happened many times.



Industrial revolution occurs not from the top down but from the bottom up. Not from the established but from the innovative

The courage to live for what you believe in and standing against injustice is a sign of true strength. The kind of strength that can move nations.



# The Path of a Peaceful Warrior

Even at a young age I was internally driven to become a Planeteer because growing up in the countryside of southern Indiana I first wanted to be a forest ranger.



Realizing preserving the planet was the key to protecting the people I dedicated my education and focused my experience on advocating and speaking for the trees, the animals, and those who have no voice. This is how I define the role of a Lorax.

As my passion as an advocate grew, and my experience as a entrepreneur blossomed I realized the point missed by earlier generations, the triple bottom line of social and ecological effects on economics. This study led me to see the perfection of Nature as a model to building a sustainable civilization . Applying this knowledge to the built environment is what an ecological industrialist does.

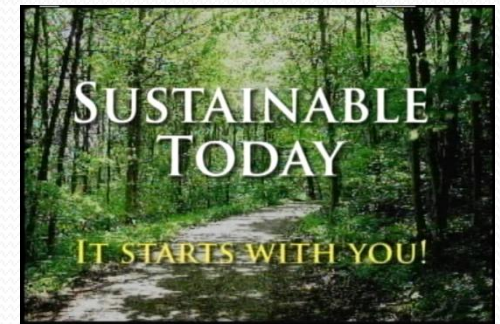


# Proven Vision and Leadership

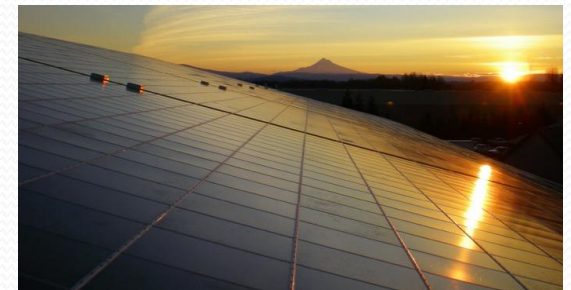


Successful Team Builder

Community Leader



Mass Educator



Visionary

# Learning Style



**Sterling College**  
WORKING HANDS ♦ WORKING MINDS



Engaging Community Life



Traditional mixed with  
Experiential Education



Real World Adventures

# Teaching Style



**F**undamental  
**I**ntelligence  
Based on  
**S**cience  
**H**istory



**R**easoning  
**O**bservation  
**D**eduction

**B**asic  
**A**ccess  
To  
**I**nformation  
**T**echnology



# The Right Man for the Job

The Right Attitude

The Right Professional Experiences

The Right Personal Experiences

The Right Professional Resources

The Right Industry Connections



*The big picture is easy to see when the pieces are in the right place*

Thank you for your time and consideration

Robert Shields  
Ecological Industrialist (lorax)