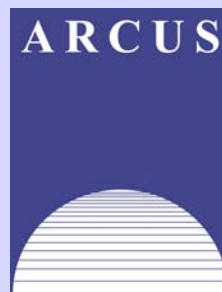


# Little Auks in California!?

A research/education collaborative model





## *What is PolarTREC?*

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers in authentic polar research experiences.





## *Main Components of PolarTREC*

- Arctic or Antarctic Field Research Experience
- Professional Development
- Classroom & Public Connections
- Sustained Community & Support

Dovekie

Little Auk *Alle alle*



Hosting a junior high-school teacher in a remote research camp....



# Benefits to Researchers



- **Less insular research**
- **Learning what makes students excited**
- **Additional field assistant and different outlook**
- **Outreach and education ..often required by funding agencies**

# NSF criteria for funding



**“Broader Impacts Criterion: What are the broader impacts of the proposed activity?”**

- How well does the activity advance discovery and understanding while promoting teaching, training and learning?
- To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?

Being a teacher in a remote research field-camp.....







# Educational Outreach Avenues



## **DIRECT**

- **Classroom programs (data analysis, scientific method, research and career awareness)**
- **Large group school lectures**
- **Community workshops**
- **Non profit group presentations**
- **Professional conference presentations**

## **INDIRECT**

- **Newspaper articles**
- **Radio interviews**
- **Nationwide educational magazine for students**
- **International educational collaboration through PolarTREC website**
- **Online-newspaper articles**

for three missing soldiers

**TOMORROW**  
In Sports: Pleasant Valley High softball team hosts Fred Bull in Northern Section playoffs

**STOCKS**

↓ Dow Industrials  
13,346.78  
up 33.56  
S&P 500  
1,503.15  
up 2.70  
NASDAQ  
2,546.44  
down 15.78  
For complete listings see chicor.com

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**GOOD MORNING**

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“It is a way to preserve into perpetuity a piece of the ranch that our parents always loved.”

Fred Hamilton  
current owner of the ranch

Photos by Bill Land at the Hamilton Ranch is full of vernal pools. The area has been in the Hamilton 50 years. The original owners, Fred and Barbara H in the middle of the property (top left) in a grave words, “in loving memory of the cowboy and acres of the land have been designated for a cons which will preserve the land from development. this land will offset land in a proposed subdivisi

# Chico science teacher going to Greenland to study seabird

By CHRIS GULLICK  
Staff Writer

This summer, when Chicanos are sweating and sweltering in typical valley heat, Mary Anne Pella-Donnelly will be shivering.

The Chico Junior High School science teacher will be in mostly ice-covered Greenland—where summer temperatures average between 10 degrees below zero and 30 degrees above—working with a research team on a remote peninsula on Greenland’s eastern coast, about three hours by boat from the nearest village, Ittoqqortoormiit.

Pella-Donnelly applied for a position through an organization that places teachers on research teams doing work in the Arctic and Antarctic, for two to six weeks each. She was one of 15 accepted from throughout the United States.

After school one afternoon last week, Pella-Donnelly talked about getting ready for the expedition and what she anticipates.

Last summer, she explained, when attend-



On the Internet  
Pella-Donnelly's journal can be found on the PolarTREC site at <http://polartrec.com/116-subs-in-greenland/overview>

Teacher Mary Anne Pella-Donnelly is seen with seventh-grader Jorge Rodriguez (left) and other students in class Friday at Chico Junior High.

Bill Husa/Enterprise-Record

Here is a view of the area in eastern Greenland where science teacher Mary Anne Pella-Donnelly will spend four weeks with a research team studying an arctic seabird, the little auk.



Contributed photo

See TEACHER, 7A

# ARCTIC RESEARCH CONSORTIUM OF THE U.S.

- Advocacy
- Planning
- Coordination
- Outreach...

## Springtime News...

### PD In Greenland!!



Website Address where you can keep up with Mrs. PD this summer:  
[www.polartrec.com](http://www.polartrec.com)

By Carly Arthur and Gabriella D'Acquisto

very own seventh grade science teachers here at Chico Junior High School will be making one of her ds off to Greenland this summer. She will stay there for four weeks while observing and researching a rming affects the stress level of a seabird. She is traveling with a company called PolarTREC. Mrs. PD osen to learn with a professional researcher named Ann Harding. The birds they will be studying are swim underwater by using their wings to pull themselves through the water. One of the groups of rich has colder water, which means that they have to process more food to keep warm. The other lives : it has to process little amounts of food. Using the information that Mrs. PD and the other researchers attempt to discover how Global Warming is starting to affect the stress level of the birds. While she tellite phone and a laptop. Oh, and just in case a polar bear tries to attack her, Mrs. PD will have a hile on this exciting expedition, each person is asked to submit a journal entry including photos, d, and online learning resources which will all be posted on a website this summer. The goal is to get s of all ages interested in this website in order to promote scientific research.

hilarating and remarkable trip, and hope when she comes back from it she will be raving with tting to sit down with Mrs. PD was a great experience for us. We got to learn about this appealing led Mrs. PD is to finally see one of her dreams come to life!

Tuesday, July 10, 2007 3A

## LOCAL & STATE

# Chico teacher heads to Greenland this week

By KAREN MCINTYRE  
Staff Intern

Tonight will be the last time Mary Anne Pella-Donnelly will see the night-time sky for about a month, while she lives in a tent in Greenland where the sun shines 24 hours a day.

The Chico Junior High science teacher is going to spend her last night in the country watching the midnight showing of “Harry Potter” before heading to the airport.

“I figured I wouldn’t be able to sleep anyway,” she said.

She will then leave her husband and four children behind, spend 17 hours flying from Chico to San Francisco to New York to Iceland, and then to Greenland where she will take a helicopter to her final destination.

“It’s just crazy,” she said. “I’ve never been on a helicopter.”

Pella-Donnelly will be one of 15 teachers chosen to participate in the

She’s going through PolarTREC, a program funded by the National Science Foundation to enhance teachers’ knowledge, connect the public and classrooms with field research, and advance scientific projects in polar regions.

The foundation supplied her with a duffel bag filled with long underwear, face gear, gloves, books, warm clothes and heavy kneepads to hike to the colony. They also provided her with a laptop computer, digital camera and recorder and a satellite phone that she will use to connect to the Internet.

“It is so well organized,” she said. “Things are double checked and triple checked.”

Pella-Donnelly was given a rifle that she has to carry in field-ready position to protect herself from polar bears. But some polar bears aren’t scared of the sound because they are used to hearing

the size of a large fist. The birds have set up nests and laid eggs which will be hatching when she arrives.

The birds will be captured by rubber netting placed over the rocks they live in. The researchers will take blood samples, but they have to do it quickly because the birds’ energy level will rise after three minutes and affect the results.

Pella-Donnelly will help monitor the rate of successfully hatched eggs and take food samples to study the animals’ basic living conditions. The team hypothesizes that the species might not easily be able to survive in Greenland as arctic waters heat up.

Every day, Pella-Donnelly will try to hook up to a hit-and-miss Internet connection to post a journal, podcasts and photos. She said she hopes her students will follow her journey online.

She said she was worried about the

**On the Internet**

Follow Mary Anne Pella-Donnelly's trip to Greenland July 11 to Aug. 5 by reading her journal entries, looking at her photos and listening to her podcasts at [polartrec.com](http://polartrec.com).

time she leaves the area will be full of wildflowers.

If the water is covered with too much ice, Pella-Donnelly will not be able to return before school starts, but she already has lesson plans prepared.

In the meantime, Pella-Donnelly will eat a lot of dry foods, live off four pairs of underwear and go to the bathroom in a bucket that will get dumped in the ocean, she said.

“I feel really lucky.”

## Some of the Media Articles

### Federal Duck Stamp Competition

By Abbie Ricketts, Rachel Jackson (and Mr. B)

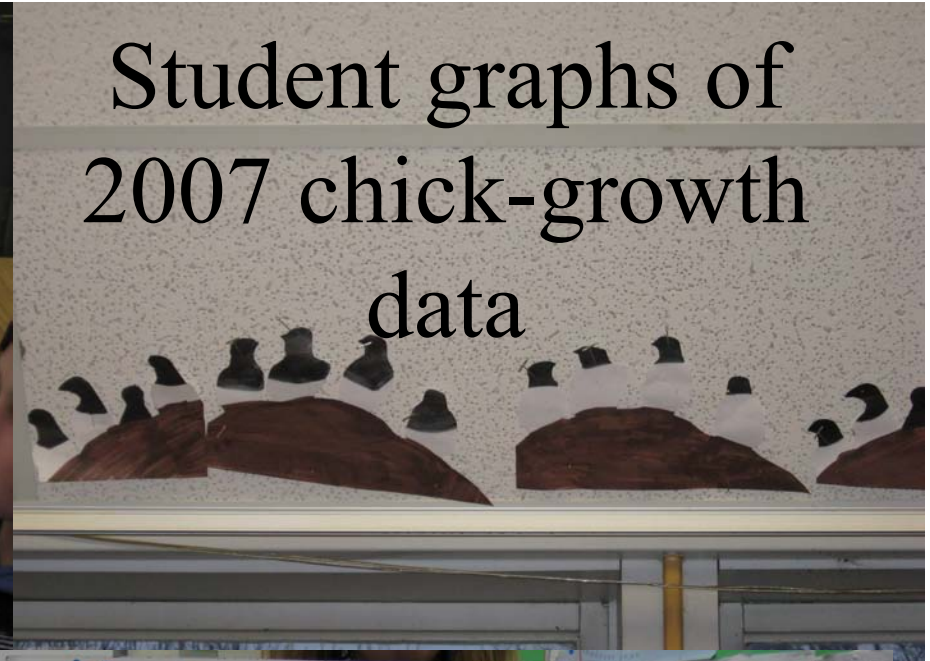
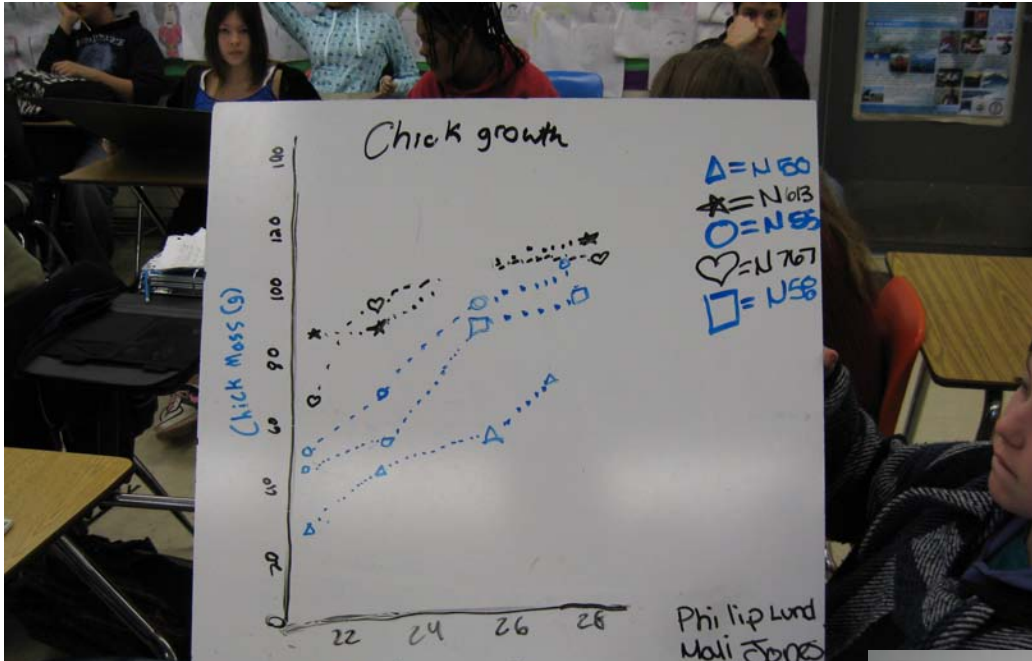
many students have been working on their Federal Duck Stamp drawings. Though many of them received honorable mentions or higher out of 1700 entries. Two CHHS students...

# Education in the field

- Daily PolarTREC Journal, questions, live podcast
- Visiting students at the colony
- Local Greenlandic school activities and teaching



# Student graphs of 2007 chick-growth data



## High School Little Auk discussion



Junior High students graphing chick-growth

## Elementary School facts and queries

### Little Auks

What we've learned:

- North Atlantic Seabird
- Black coloring on top, white below
- Short stubby bill
- Eat zooplankton = small aquatic animals

? What we'd like to find out ?..?

- What are their predators? Polar bears, sharks, seals, arctic fox?
- Where do they build their nests? In the rocks?
- How many eggs do they lay? How many survive?
- How old are they before they can have babies?
- Are they rare or endangered? Why did you choose them?
- Are they diurnal or nocturnal?
- How long do they live? Life span
- How far can they fly? Speed?
- What is their wingspan? Overall size?
- Do they protect their babies after they hatch?
- Do they dive and scoop their prey with their bills?
- Do they have special feathers for the cold?
- Do they have webbed feet or talons?
- Are they good swimmers?
- How long does it take the eggs to hatch? (Incubate)
- Do both the mom and dads incubate the eggs?
- How big are the eggs?
- What are their colors at birth? Do they change?
- Do they have good eyesight?
- How loud are they? What do they sound like?



Dear Ms. P. D.,  
you are a nice friend to us you,  
showed us an awesome slide presentation, and  
taught us about ale ales. It was a great job.  
Thank you for helping our class do an investigation.  
I hope I have you for my science teacher  
someday. from Destiny



Dear Ann,

Thank you for coming to our class-  
room. You have a fun job. It made  
me want to be a scientist too! A field  
biologist looks fun. I want to, but I  
want to be a famous tennis player. I will  
always remember you.

Love,  
Tina Laughlin









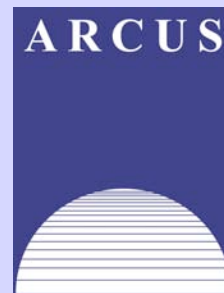








Interested in a similar collaboration?





# Acknowledgements

- **Janet Warburton, Katie Breen, Kristin Fischer (PolarTREC team)**
- **Rachael Orben, Jerome Fort, Ewan Weston (Team 2008)**
- **Chico Junior High/ Chico Unified School District**
- **David Grèmillet, Nina Karnovsky, Geir Gabrielsen, Jorg Welcker, Sasha Kitaysky, Wojciech Walkusz, John Speakman, Sandy Talbot**
- **Logistics: NANU travel, VECO, Franck Delbart, Tracy Fischbach**
- **Funding: NSF and the French Polar Institute (IPEV)**
- **Alaska Science Center**