Exploring the Suitability of Crowdfunding for Rural Appalachian Communities

Dr. Janet Nelson
Associate Vice Chancellor for Research
UT Knoxville Office of Research
1534 White Ave.
Knoxville, TN 37996-1529
Phone: (865) 974-3466
Fax: (865) 974-7400
Email: research@utk.edu

February 1, 2014 – June 30, 2015

May 1, 2015

Dr. Tim Ezzell
Research Scientist
Department of Political Science
University of Tennessee
Suite 311, UT Conference Center
Knoxville, TN 37996-4134
865-974-9036
tezzell@utk.edu

Final Report Narrative

Title of Project: Exploring the Suitability of Crowdfunding for Rural Appalachian Communities

Grant Period: February 1, 2014 – June 30, 2015

Grantee Name: The University of Tennessee

Project Director: Dr. Tim Ezzell

Description of Project:

The 2014 ATP class at the University of Tennessee will evaluate the suitability of crowdfunding for small communities and develop crowdfunding recommendations though a case-study partnership with residents of Ducktown, Tennessee. Students in the class worked closely with a local nonprofit, The Copper Basin Rural Community Association, Inc. to develop and implement a crowdfunding campaign to purchase a 3D printer for the Copper Basin Learning Center at Copper Basin High School in Ducktown.

Activities:

The students in the UT ATP class conducted the following activities in the course of the semester-long project class:

- Students developed a thorough community profile of Ducktown and the Copper Basin area, including a historical overview and detailed assessment of demographic, economic, and environmental conditions.

- Students met with the chair of UT's Institutional Review Board (IRB) and the university's IRB administrator. A project working group developed IRB guidelines for our project, attained UT IRB certification, and guided the class project through the UT IRB process.

- Students conducted a literature review related to civic crowdfunding to determine best practices. They also conducted a critical analysis of existing and recent civic crowdfunding efforts.

- On October 3rd, 2014 students met with local stakeholders, including educators and local elected officials to discuss project goals, partner roles and responsibilities, and describe the crowdfunding process. They also met

with students at the school, where they discussed college life and the challenges and benefits of attending a large University such as UT. UT students from rural areas talked about their experiences and gave advise to students considering UT as a college choice.

- In addition to the October 3rd meeting, students also made individual trips to Ducktown to collect project media. Throughout the semester, students remained in constant contact with local stakeholders. To facilitate communication, one student in the class was designated as a point of contact for local community members.

- Students developed, implemented and managed a crowdfunding process to obtain a 3D printer for the Copper Basin Learning Center. They selected a platform (Indiegogo), determined goals and "stretch goals" for the campaign, and developed campaign media, including text, photos, and a brief project video. The project website can be viewed at:

  https://www.indiegogo.com/projects/copper-basin-3d

- Students met with media relations specialists from the University of Tennessee and the Tennessee Valley Authority to develop media and social media strategies for the campaign and media materials, such as press releases, lists of potential media outlets, and Facebook and Twitter strategies.

- Using project research and lessons learned from their successful crowdfunding campaign, students in the class developed a crowdfunding guide for small communities.

- A group of students from the class travelled to Washington to present project findings at the annual ATP conference. The students also created a poster for the conference. During the conference and UT team presentation, student representatives tweeted regular updates to other class members and community stakeholders.

- A student from the class, Kassie Ernst, presented a report on the class project and activities at the annual Appalachian Studies Association conference in Johnson City.

Project Outcomes:

The UT class resulted in the following project outcomes:

- Efforts of the class resulted in a successful crowdfunding campaign. The UT class raised $2,632 from 48 donors on behalf of the Copper Basin Learning Center. As a result of these efforts, the Learning Center purchased an Ultimaker 2 3D printer in January 2015.

- The students developed a guide, "Civic Crowdfunding: A Guide for Rural Communities." The guide has been shared with rural practitioners across Tennessee, including the Department of Economic and Community Development, UT Extension, and the UT Institute for Public Service.

- Students presented at the annual ATP conference in Washington and developed a poster for the event.

- A student, Kassie Ernst, presented at the Appalachian Studies Association conference in Johnson City.

- In addition to Ms. Ernst's presentation, given as part of a UT panel on university engagement, staff from the Copper Basin Learning Center also conducted a session at the ASA conference which included a reference to the UT partnership. Outcomes from the UT partnership have also been included in current efforts to create an expanded Learning Center facility in Ducktown.

- The project received extensive press coverage across East Tennessee, including the *Knoxville News-Sentinel* and the *Chattanooga Times - Free Press.* The project website received over 1,100 site visits and 227 referrals.

Problems Encountered:

Originally we had planned to work with neighbor.ly, a dedicated civic crowdfunding platform, to host our campaign. In August, neighbor.ly informed Dr. Ezzell they were changing their programming to emphasize municipal bonding and, as a result, would no longer be able to participate. The class easily overcame this problem by adopting Indiegogo as the project platform, a decision that likely resulted in better outcomes.

Program Continuation and Sustainability:

Students at the learning center are actively using the 3D printer and educators are developing a wide range of learning applications for the device. Recently, for example, students printed and assembled a prosthetic hand. They are currently working with an international "maker" group to create additional prosthetic hands for people in need, particularly in the Appalachian region.

By creating a guide, the students in the class hope to extend the lessons learned from this project to other peer communities in the region.

Local stakeholders have expressed the belief that visibility from the project have improved the chances of creating a new and expanded Learning Center facility in the community.

Conclusions and Recommendations:

UT's 2013 ATP class first discussed the possibility of bringing 3D printing to small communities like Ducktown. While many responses to this idea at that year's ATP conference were very positive, the comments included the following:

"Some suggestions seem impractical."
"Too progressive in a small town?"
"Great presentation, but focus on emerging technologies distracted from sustainability."
"Very well planned, but is it doable?"
"Ambitious but is it attainable?"
"A lot of it focused on "tomorrow" and not "today."

The UT students in the 2014 class took these comments as a challenge and sought to prove that new technologies and ideas are not only applicable in Appalachian communities, they are also sought-after, vital, and necessary. The students also wanted to prove that communities like Ducktown should not be judged by their size, location, and perceived limitations. In these respects, this class succeeded in meeting these "unofficial" project goals.

As for the stated project goals, the class developed a number of recommendations which are included in the project guide. These include the following:

- Small communities must find a good partner
- Continuous engagement is essential
- Build project awareness ahead of time
- Strong anchor team of people is important
- Crowdfunding is best for small special projects
- Crowdfunding should be used sparingly

Attachments (in PDF format):

Attachment A: Presentation to community stakeholders
Attachment B: Project photos
Attachment C: Learning center photos of the 3D printer
Attachment D: Press stories

Attachment A: Presentation to Community Stakeholders

Copper Basin 3D

Oct 3, 2014

https://c4.staticflickr.com/4/3061/2559806685_2a326fe035_b.jpg

Topics for discussion

- ARC and class connection
- Background
- Project goals
- Roles
- Crowdfunding
- Process
- Platform
- Incentives
- Media and Marketing (Social and traditional)
- Printer options
- Timeline
- Next Steps
- Project Sustainability
- Questions and Contact info.

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Background

- This class is part of a broader regional effort known as the Appalachian Teaching Project (ATP).
- The ATP is sponsored by the Appalachian Regional Commission (ARC). ARC is a regional economic development agency that represents a partnership of federal, state, and local government.
- This class is project based and looks for a solution to a real world problem, in a real world community.

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Last year's project

- Last year the class looked at ways three important emerging technologies could impact rural Appalachian communities.
- Electric Vehicles (EVs) - Will EVs, with their limitations, improve rural areas or lead to new problems?
- 3D Printing - Will rural communities benefit from the predicted 3D printing revolution? What opportunities will this create?
- Contour Crafting - What impact will 3D printed structures have on rural housing and labor markets?
- The class worked with the town of Ducktown, TN as a case study, and recommended bringing 3D printing technologies to the local high school to develop job skills and improve employment opportunities.

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

This year's Project Goals

- Evaluate the suitability of civic crowdfunding for smaller rural communities.
- Run a crowdfunding campaign and purchase a 3D printer for the Copper Basin Learning Center.
- Develop a civic crowdfunding guide for Appalachian communities based on lessons learned during the project.

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

2014 ATP Institutions

- UT is one of 13 colleges and universities participating in the SATP this year.
- Each institution has an ATP class working on a community-based project.
- Student teams will present in Washington in December

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

What is Crowdfunding?

- Raising money from a large number of people
- Each donation is relatively small
- Giving is done over the internet
  - Different platforms include Indiegogo and Kickstarter
- Can reach a very large audience quickly through social media

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Crowdfunding Process

1. Create an Indiegogo account
2. Upload media to your campaign page
3. Set funding and timeline goals
4. Launch your campaign
5. Promote your campaign
6. Receive money when your campaign ends

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Platform

We will be using Indiegogo for this crowdfunding project.

- Has high visibility
- Is very user friendly
- Hosts many community projects

Example: https://www.indiegogo.com/projects/build-gateway-green

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

UT's Role

- First and foremost, we are assisting the Copper Basin with the Project
- Create Platform and Launch for Crowdfunding
- Devise Incentive Plans, Working with Community
- Pick best suitable Printer for the town and their needs
- Help promote the Project via Social and Traditional Medias
- Contact different Newspapers for project promotion
- Help people understand Copper Basin's history and their future goals, and see why this project is important
- Assess the ability for crowdfunding to work for smaller communities in the future

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Copper Basin's Role

- Verify Non-profit for platform
- Pick preferred Printer
- Interviews, Pictures, Etc.
- Help promote through the area's social media
- Help with possible incentives available for donors
  - (local connections—Kiwanis?)

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

3D Printing

What is it?

- Produce 3d models / parts out of plastic or other material
- Similar to an inkjet printer
  - Material instead of ink
  - Layer by layer deposition

What can it enable?

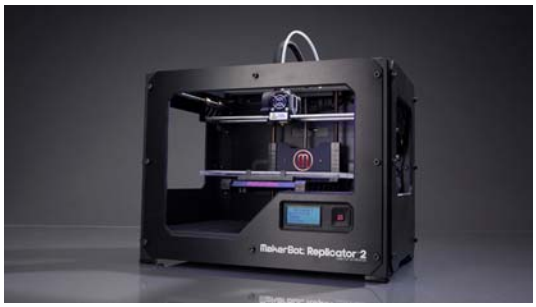
- Flexibility in design
- Stimulate creativity in STEM and Art
- Multiple material parts / models

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Printer

Goal: Cubify Cube (3D Systems)

Stretch Goal: Makerbot Replicator 2

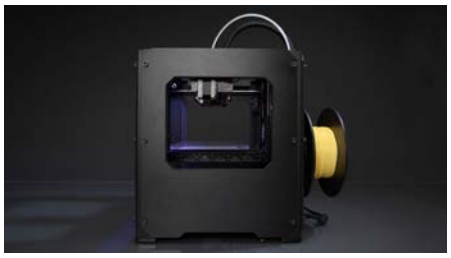


THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Printer Costs

Makerbot Replicator 2

- $2989
- ~44.2 in^3 spool / $48
- 36-41 midsized creations



Cubify Cube

- $999
- ~16 in^3 cartridge / $49
- 13-15 midsized creations

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Suggested Incentives

$10	Copper Basin Collaborator!
$35	Ducktown Donator!
$75	Philanthropic Friend!
$150	Superstar Supporter!
$300	Biggest Basin Backer!

- Discuss incentive options
- Solidify incentive decisions

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Media and Marketing (Social and Traditional)

- **Social Media** - Create Twitter and Facebook for project and/or Copper Basin Learning Center?
- **Other Social Media** - Contact other media sources (Printer Manufacture, Copper Basin, UTK, etc.)
- **Website** - Post materials on how to maintain and operate 3D printer (Weebly, Google)

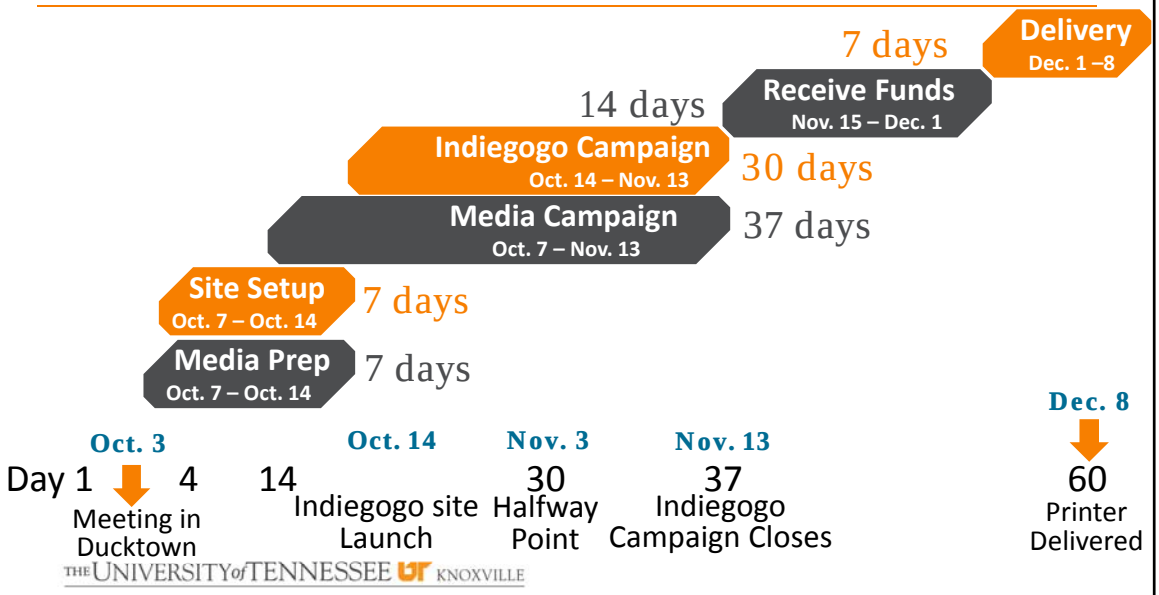
THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Media and Marketing (Social and Traditional)

- Press Release – Copper Basin / Blue Ridge / Chattanooga / Cleveland / Knoxville newspapers
- Create Twitter and Facebook for project
- Contact other social media sources (Printer Manufacturer, Copper Basin, UTK, etc.)
- Create Website – (Weebly)
- Contact the appropriate people for Kickoff Event

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Copper Basin Crowdfunding Timeline



THE UNIVERSITY of TENNESSEE UT KNOXVILLE

Next Steps

- begin campaign
- edit and produce campaign video
- distribute media through desired outlets
- find local partners to help towards goal and stretch goal

THE UNIVERSITY of TENNESSEE UT KNOXVILLE

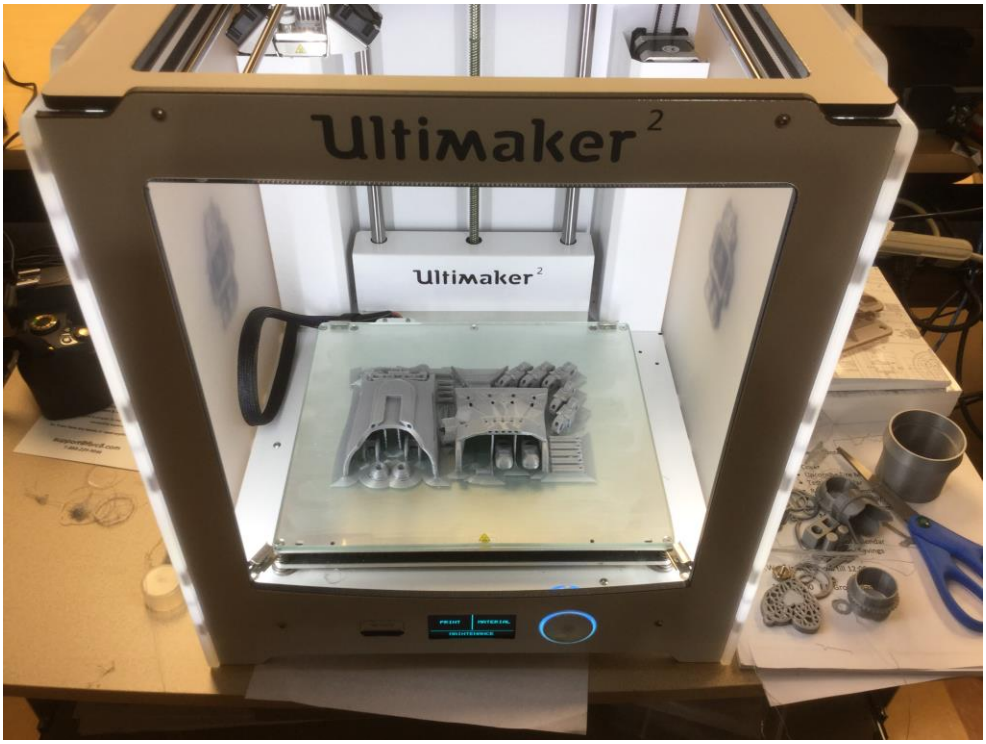
Attachment B: Project Photos

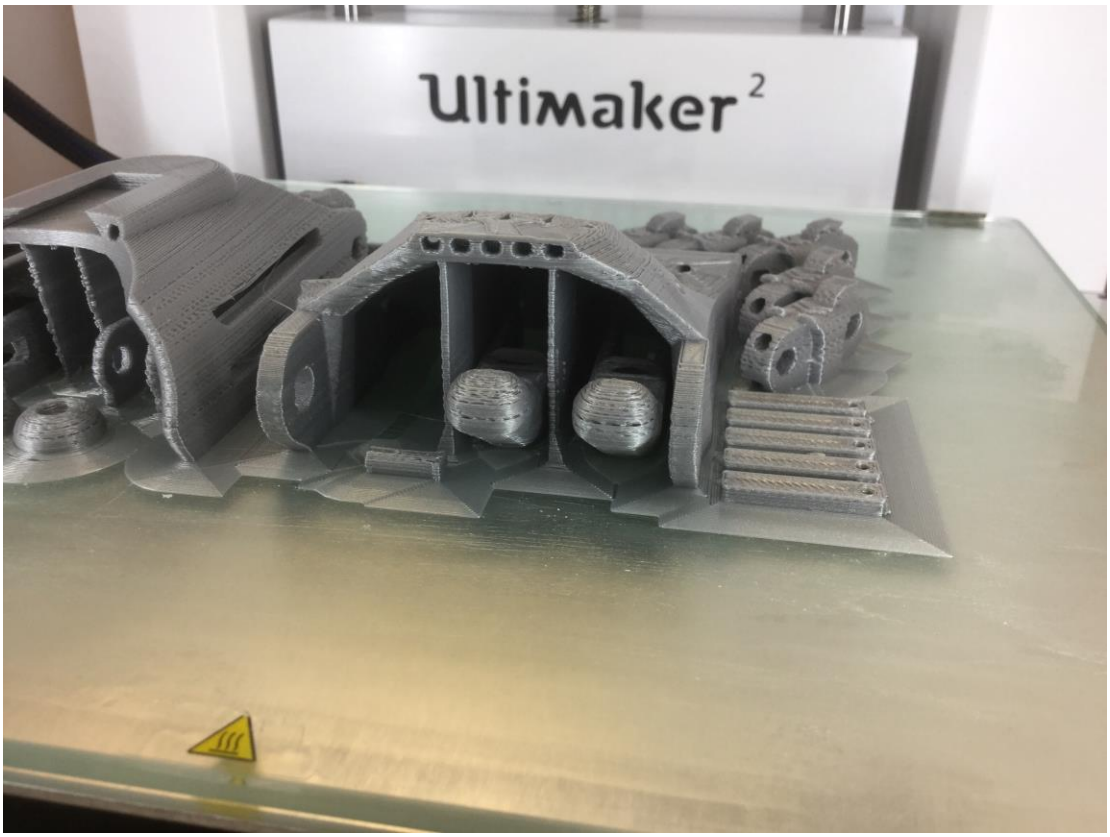

EXIT


PUT YOUR
HEART
IN
DUCKTOWN


GA
TN

Attachment C: Learning Center Photos of the 3D printer

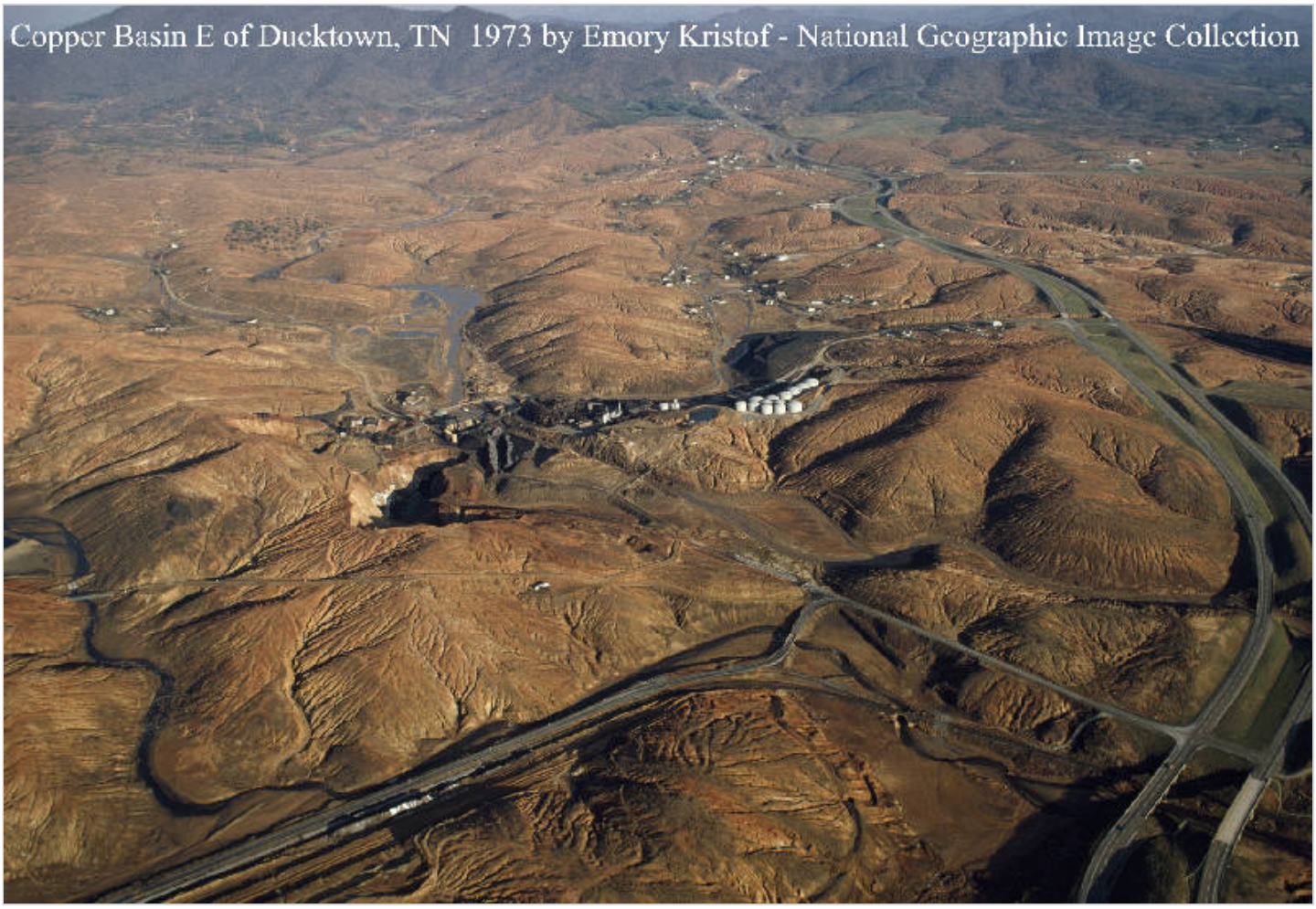



Ultimaker 2

Attachment D: Press Stories

Helping Green The Basin

November 9th, 2014 | in Opinion Free Press | Read Time: 3 mins. |



A 1973 aerial photograph shows what the area around Ducktown and Copperhill, Tenn., looked like before it sought to become one of the greenest small towns in America.
Photo by Associated Press/Times Free Press.

Ducktown, Tenn., is attempting to become the greenest small town in America, and a project led by a University of Tennessee at Knoxville professor and former Chattanooga area resident is expected to help play a part.

Dr. Tim Ezzell, a political science lecturer and director of the school's Appalachian Teaching Project (ATP), and his students are working with the nearby Copper Basin Learning Center at Copper Basin High School to raise at least $2,500 through crowd funding to buy a 3D printer for the community.

The town of nearly 500 residents, in far eastern Polk County near the North Carolina border, already produces 60 percent of its power using solar sources, has four electric vehicle charging stations and LED stoplights.

"They're crafting a new future for themselves," Ezzell said. "Tourists today never imagined what [the area] used to look like."

Once a center for copper mining, it later produced iron and copper from high-sulfide ores. The open roasting of the ores released large amounts of sulfur dioxide, which killed much of the vegetation in a 50-square-mile area, making the entire Copper Basin look like a vast, gullied, red wasteland.

Today, the area is mostly re-vegetated, or re-greened, if you will, leading to a real, not symbolic, desire to be the greenest small town.

The idea for the 3D printer came about after students involved in Ezzell's Appalachian Teaching Project, which is sponsored by the state and federally funded Appalachian Regional Commission and created to provide planning and economic development assistance to distressed communities, visited the Copper Basin area last year to think about how emerging technologies "might impact small, rural communities."

Three-D printing, they felt, was new and "had a lot of potential" for small-scale advanced manufacturing, he said. "A lot of creative things could be done with it." But students, who might also use it in technology, math and arts education classes, needed "to have more awareness of it and familiarity with it."

The project's recommendation was that a printer be bought so students could work with it ahead of any higher education and work applications down the road.

This year's ATP students, in considering how to acquire a $2,000-plus printer to be placed in the Copper Basin Learning Center, an after-school and enrichment program at the high school, hit upon crowd funding. They also considered that doing so would test the viability of crowd sourcing in smaller communities.

As part of the project, the students are researching and writing a guide to such sourcing, intending that it will offer "lessons learned" and "best practices" and could be distributed to smaller towns, which could then run their own campaigns.

They will then present their findings before the Appalachian Regional Commission in Washington, D.C., in December.

"It's a really good experience, one of the more defining moments of their education -- real-world experience," Ezzell said of the project, now in its 15th year. "And standing in front of a federal agency is good for them."

He and the students set a funding goal of $2,500, which the Indiegogo crowd funding site shows would go to purchase the CBLC Cubify Cube from 3D Systems. Should they reach their stretch goal of $3,500, the site indicates they would buy the Makerbot Replicator2 from Makerbot.

The campaign runs through Saturday, more than $1,440 already has been secured and donations may be made at http://bit.ly/1sXgAkH.

"I think we're going to get there," Ezzell said. "This will allow [students] to have access to some of the same opportunities students have in Chattanooga."

And for Ducktown and the Copper Basin area, "I see this as part of helping them reach this [green] vision," he said. "People feel like a small town can't be that progressive. But this is part of dispelling that myth."

UT class aims to provide technology to rural community

POSTED: 5:00 AM, Oct 20, 2014
TAG: local news (/topic/local+news)

Students at the University of Tennessee are working to raise money to buy a 3D printer for a small community.

For 15 years, political science professor Tim Ezzell's class has been part of a program called the Appalachian Teaching Project, sponsored by the Appalachian Regional Commission. The project provides planning and economic development assistance to distressed communities.

As a part of the program, Ezzell has asked his class to set-up a crowd-funding website to raise $2,500 for the project for the Copper Basin Learning Center near Ducktown, Tenn.

"Last year my class looked at emerging technologies and how they might impact and benefit smaller communities," he said. "We found that 3D printing had a lot of potential, but the skills and awareness were not there yet."

Ezzell said the machine will help residents by exposing them to the new technology, giving them an advantage when it comes time to look for jobs.

"The goal of the class is to engage colleges and universities in addressing issues and opportunities in the region," he said.

According to Ezzell, the class is also testing another strategy.

"Another goal we have is to test civic crowd funding, to see how it works in smaller rural areas. The students will also produce a guide for crowd funding," he said.

While Ducktown is one of the smallest communities in the state, it is one of the most progressive. According a UT press release, the town is aspiring to be the "greenest small town in the country." It produces 60 percent of its own power using solar power and has four electric vehicle charging stations and LED lighting.

The project launches Oct. 16 and runs until Nov. 15.

News Sentinel staff

Copyright 2015 Journal Media Group. All rights reserved. This material may not be published, broadcast, rewritten, or redistributed.

Polk County News
since 1883

Polk County News, PO Box 129 Benton, TN 37307
phone: 423-338-2818, fax: 423-338-4574

= Menu =

« Polk County, TN Pioneers Lewis and Kisiah Jones Arthur

CSCC Hosts Nursing Information Session Nov. 3 »

Funds being raised for Copper Basin Learning Center 3D printer

By editor | October 30, 2014 - 2:50 pm | community, featured, school news

On the first day of class, Tim Ezzell asks his students what comes to mind when they hear the word "Appalachia." Invariably, he hears words like "hillbillies" and "moonshine." At the end of the semester, he asks the same question and instead gets answers like "hard-working," "family" and "resilient."

In its 15th year, the University of Tennessee, Knoxville, class is part of a program called the Appalachian Teaching Project, sponsored by the Appalachian Regional Commission. The project provides planning and economic development assistance to distressed communities.

This year, Ezzell's students are taking on a unique challenge by working with the Copper Basin Learning Center to raise at least $2,500 through crowdfunding to buy a 3D printer for the community near Ducktown, Tennessee. The project runs until Nov. 15. Donations can be made at https://www.indiegogo.com/projects/copper-basin-3d

The small machine holds a lot of promise for the rural community. By exposing young people to one of the defining new technologies of their lifetime, the community can then prepare to participate in a rapidly expanding economic sector.

"Look at people like Steve Jobs, Steve Wozniak, Bill Gates—two of the largest and most valuable companies on earth started with young people tinkering creatively with new technologies," said Ezzell, political science lecturer and project director. "I think a lot of people underestimate these Appalachian youth. These are smart young people. Give them the tools and some space and I think they will surprise folks with what they can accomplish."

The idea for a 3D printer came from last year's class research, which investigated ways emerging technologies could impact smaller rural communities. After a survey of community members, the class found that 3D printing has the potential for a major impact on rural communities by allowing for small-scale advanced manufacturing.

"Learning these new tech skills would help the community keep pace with larger urban areas and might give them an advantage over other communities," said Ezzell.

While Ducktown is one of the smallest communities in the state, it is one of the most progressive. Located in the Copper Basin, it supplied the copper needed for the nation to grow and win World War II. It did so at a cost, making it one of the most polluted places in the nation. Yet today, the region has recovered from that era and the town is aspiring to be the "greenest small town in the country." It produces 60 percent of its own power using solar power and has four EV charging stations and LED lighting.

"They want to embrace new technologies and new opportunities, and 3D printin ›erfectly within their vision," said Ezzell. "What's more, the entire Copper Basin area will benefit from this technology. Young people from other communities in the area will also have access."

The project also tests the success of civic crowdfunding in small communities. Students will take what they learn and develop a brief guide to help small communities run their own campaigns. Students will present their findings to the ARC in Washington, D.C., in December.

UT helped establish the Appalachian Teaching Project in 2000 and has worked in a half dozen East Tennessee counties. For more information about the project, visit http://isse.utk.edu/cpc/projects.html.

Bookmark the permalink.

« Polk County, TN Pioneers Lewis and Kisiah Jones Arthur

CSCC Hosts Nursing Information Session Nov. 3 »

SUBSCRIBE

Search OK

Popular Recent Comments

Polk County, TN Wildlife Committee angered by TWRA proposed rate increase
January 14, 2015

Arrest made in Ducktown, TN carjacking
September 19, 2014

Arrest made in string of thefts
November 7, 2014

Polk County Mills – Grist and Gossip
October 16, 2014

WPFR honors members
December 19, 2014