

## **Green Fund Project Final Report**

This report may be published on the SIU sustainability website.

Name of person(s) completing report: Katlynn Hutchcraft  
Department: SIU College of Applied Sciences and Arts/Dental Hygiene Program  
Contact Phone and email address: [katlynnns@siu.edu](mailto:katlynnns@siu.edu), 618-453-7224 (work), 217-710-4348 (cell)  
Faculty Advisor (if applicable): N/A  
Project Title: Destined for Digital  
Project ID #: 18SP105  
Award Date: 4/27/18  
Completion Date: 2/8/19  
Total Funds Used: \$7,232.00 from Green Fund Project Award, \$8,020.00 total used for project

### **1. Provide a summary of your project/project experience.**

Our project goal was to reduce waste in the SIU Community Dental Center by eliminating chemical and film waste from traditional dental radiographs, increasing access to care for community members, and decreasing patient wait time for radiographic images. By obtaining a digital sensor for the Community Dental Center, we reduced our overall costs from traditional radiographs and wastes significantly, as well as increased our ability to quickly and effectively produce images. Now that we are fully digital, we can transfer images securely through online portals, instead of having to use patient time to process copied paper images or scan them into a computer to transmit to another office.

Initially, we asked for a total of \$14,465.25 in funding to buy a NOMAD portable x-ray unit in addition to the x-ray sensor. Because we were partially funded, we made the decision to choose the greater of the two needs for our clinic, which was the digital x-ray sensor. The NOMAD would have been used mostly for public outreach programs and would have been greatly used during the provision of mobile dental care in the community, but the sensor was/is needed for day-to-day use in the clinic.

Over the last year, we became the only dental provider on campus offering restorative services to students and community members with the news of Student Dental Services closing. We are also one of the only Medicaid providers in Carbondale. Both have caused us to see an increase in community members and students seeking affordable dental care over the last year, which greatly increased our need for the sensor we were able to purchase. We have always taken pride in our oral health outreach to the local community, which includes some of the most vulnerable population groups in Southern Illinois. Now, we also are able to take additional pride in the fact that we are able to be 100% digital and up to par with the accepted standard of practice in dental offices.

### **2. Provide a summary of your results (environmental, social, and/or economic) including quantifiable data as appropriate (ex. # of individuals reached, lbs. diverted from landfill, energy saved, etc.).**

We take an average of 4 full mouth series (18 films each), 5 periapicals (single films), 5 2-series bitewings (2 films), and 5 4-series (4 films) per day, which amounts to an average of 107 films/day. Films cost \$85.99 a package, with each film costing \$0.85 to expose and develop. Duplicating film cost \$67.99 per package, which cost us \$0.33 each time we duplicated an x-ray. We averaged that we were spending \$91.79/day on radiographs, with additional \$5.94 to duplicate an entire set of x-rays (18 films), \$0.33/single film, \$0.66/2 bitewings or \$1.32/4 bitewings. Our estimated cost for all paper/chemical products was about \$91.79/day, multiplied by the twelve days a month we were open, which ended up being \$1,101.48/month for radiographs (chemicals, processing, and actual film). With the sensor update, we were able to completely transition to digital, allowing us to discontinue purchasing all film products. The sensor will last for around eight years (per the manufacturer) at a cost of \$84.53/month (total cost divided by 96 months- or, the total cost divided by total months in an eight-year time span). Although our initial sensor cost of \$8,020.00 is substantially more than our monthly cost of fixer, developer, film, and repair to our traditional radiograph developing machine, we have completely reduced our waste footprint in terms of chemicals (developer, fixer, and monthly cleaning material) for processing and plastic/paper used for traditional films, and reduced overall wait time for patients while processing radiographs. We completely reduced our plastic use from traditional films, as well as plastic and paper used to duplicate radiographs for the patients to take home or to another office. An additional benefit for eliminating chemical waste is that we now no longer must smell the chemical odor or encounter the chemicals previously used, which were toxic to the skin and sensitive to the mucous membranes.

Additionally, an average of 30 dental hygiene students rotate through the SIU Community Dental Center per year as part of their rotational site requirements to graduate from SIU Dental Hygiene. Due to our ability to purchase this sensor through the Green Fund, we can provide each hygienist with additional training that will prepare the students for the workforce and future experiences as clinicians.

In summation, we have elevated ourselves to the community by claiming our place in an ever-changing, updating dental world by implementing digital radiography in our practice. Use of radiographic sensors reduce the process of taking and developing x-rays from 15-20 minutes to instant results, eliminating all processing time, in addition to providing cost-saving benefits. By streamlining the process and adding the additional sensor, we have been able to accept new patients and treat more community members who may have a dental emergency and need a diagnostic appointment. Furthermore, digital radiography has been proven to reduce patient exposure to radiation over traditional films, thus improving our ability to provide quality, holistic dental care to all patients.

**3. Summarize how your project promoted the Green Fee/Sustainability on campus including, but not limited to, flyers created, screenshots of website, signage, etc. Please include website links, if applicable. (Reminder: you are required to promote your project using at least 2 items from the awardee website promotion list.)**

We produced fliers that were distributed throughout Carbondale and the surrounding community promoting our clinic and the sustainability we have been able to achieve, updated our SIU Community Dental Center website to reflect the positive environmental changes in our clinic and

promote the Green Fee/Sustainability, as well as produced several Facebook updates to inform our followers and patients of our new “green/sustainable” status on campus. Flyers have been provided at the SIU Community Dental front desk as well. Recently, SIU Community Dental Center’s dentist, hygienist, and clinic manager participated in a ribbon cutting ceremony to promote the clinic and the positive changes made over the past year.

-SIU Community Dental website: <https://sah.siu.edu/cdc.php>

-Facebook: SIU Community Dental, <https://www.facebook.com/siucommunitydental/>

**4. Provide evidence of how you used the Green Fund Marker in your project.**

Pictures have been included, attached to this email. We hung the Green Fund Marker by our front desk area, as well as placed it on two walls in the operatory where our clinicians take the radiographs.

**5. Is there anything you would do differently if you were to do a similar project in the future? If so, please describe.**

If we were to do a similar project in the future, we would work to incorporate more outside programs into our investments. This time, we were so focused on the project at hand and updating our equipment that we were unable to focus on working with other programs to provide collaborative research.

**6. Provide as an attachment to the email (see email address below) a minimum of 5 digital images. Images should be of high a quality as possible and be attached in jpg format, if available. Images will be used to promote interest in sustainability projects on campus and may be used on our website and in other promotional material. These can be photos of the progress of the project or the completed project. Provide captions for photos here.**

-Operator with sensor- clinician Savannah holding our new sensor

-Patient with sensor- clinician taking x-rays with new sensor

-Patient with sensor 2- patient (with parental consent) receiving x-rays

-Patient with sensor 3- patient receiving x-rays

-Patient with sensor 5- patient receiving x-rays

-Ribbon cutting- Dr. Levinson (clinic dentist), hygienist Katlynn, and Renee Lipe (clinic manager/hygienist) taking part in a ribbon cutting to celebrate the new sensor addition

-Website 1- screenshot from our SIU Community Dental Center website update

-Website 2- screenshot from our SIU Community Dental Center website update continued

-Facebook post 1- screenshot from our ribbon cutting post

-Facebook post 1 continued- screenshot from our ribbon cutting post

-Facebook post 2- student clinicians Savannah and Carly holding our marker at the front desk

**7. List suggestions for the SIU Sustainability Council to improve the Green Fund Award Process here:** No suggestions- thank you for this wonderful opportunity!

Final Report forms should be sent electronically, in editable Microsoft Word format, to [greenfund@siu.edu](mailto:greenfund@siu.edu). This should be completed before requesting final reimbursement. A Sustainability Council designate will review final reports before releasing funds.

**Images below: Patients with sensor**



