THE UECPC DIGITAL DIALOG

The monthly Challenges the club holds almost always raise questions regarding how to size images for our newsletter and website. In addition the thumbnails for exhibition cards and PSA-sponsored digital events also raise more sizing questions. To someone just starting out this seems like a difficult task, but in reality it is quite simple. The major software and hardware developers for both PCs and Macs have given this considerable thought in the design of their products. As a result both platforms offer quite easy methods allowing you to completely resize images from any format into the almost universally accepted JPG format in just a few key strokes. Below are the reasons why this is necessary and methods to accomplish this task quite easily.

Resizing Images

By: Dan Ford, Phil Waitkus, and Audrey Waitkus

The first part of this month's Dialog will simply be an explanation of what and why. Parts two and three, written by Dan and Phil, respectively, will start to present some of the hows.

First of all why do we need to do this. The fundamental reason is that different uses require different sizes. Your computer screen can accommodate any size you give it, because your computer gives you the ability to zoom in or out. But zooming doesn't change the size of the image itself, it just makes it look smaller so it fits on the computer screen.

When we project images on a screen at our club and in competition we run into a problem. Projectors typically project an image that is 1024 pixels wide by 768 pixels high. So we can represent the projected image as in Figure 1.

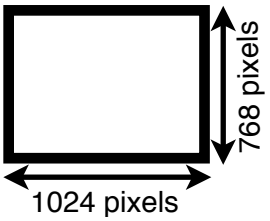


Figure 1

A modern digital camera typically produces a photo which measures at least 3000 pixels wide by 2000 pixels high (depending on sensor size and megapixels, these numbers will vary, but the principle remains the same).

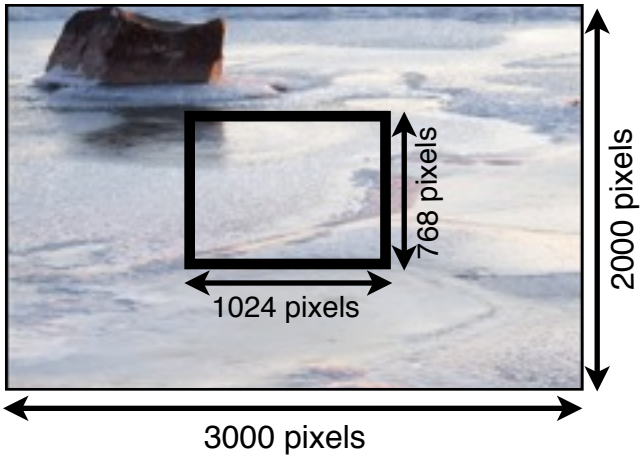


Figure 2

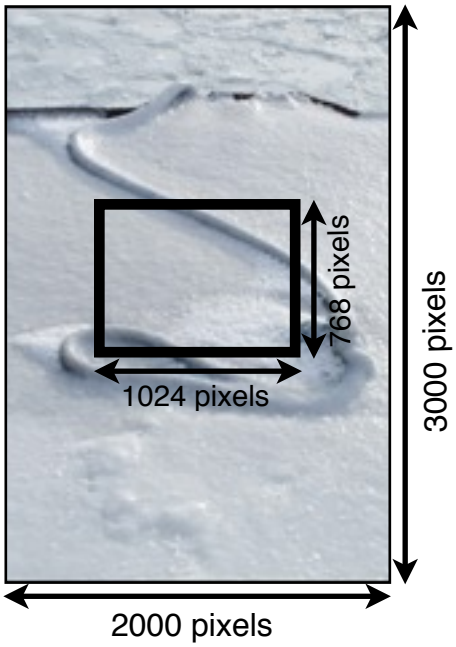


Figure 3

Here's what happens when you try to project a horizontal photo (Figure 2) or a vertical photo (Figure 3). As you can see any picture will have

to be **no bigger** than 1024 pixels wide or 768 high or some of it will “fall off” the edges.

In fact, rarely is a horizontal image 768 pixels high when the width is changed to 1024. And for a vertical image the width will be far less than 1024 pixels when the height is changed to 768 pixels. This is OK. Remember the important thing is that the **maximum** size in either direction governs how the image projects. By always being sure to constrain the proportions, you will only need to make sure the width is never more than 1024 pixels **and** that the height is never more than 768 pixels. Now your picture will all fit on the projector because you have the dimensions right.

One other number that arises at this point is the resolution. If you have a place to make a choice about resolution, just know that for projection or email or web use, 72 pixels per inch is adequate.

But there is another important issue. As our cameras’ pixel counts have increased from 3 megapixels, to 8 and now to 20 and even higher, the resulting **file sizes** have grown substantially. The file size of a photo is a measure of how much space it takes up on your disk or drive. The size of the file when it comes into your computer is controlled by your camera and the quality settings you’ve chosen for shooting. You always want to capture your images with good quality, so this is not the place to cut corners. Once the file is on your computer you can begin to make choices depending on your intended output. For this dialog, let’s limit our discussion to emailing the file. Normally, email file sizes are capped by the email provider at around 12 to 20 megabytes to keep us from hogging the bandwidth and to keep transmission times down. This translates into a lot of email-provider-rejected emails when we try to send one of those large native images right out of the camera, not to mention trying to send a Photoshop file which can easily top 300 megabytes. The answer to this quandary is governed by your choices when you save the file to attach it to your email. Basically you will want to save your file in JPEG (same as jpg) format. Once you have selected that format, you will control the size of the output file by varying the quality of the JPEG. You should reduce the quality until the file size matches the size specified by your intended recipient. Here is where the instructions will say something like “1024 by 768 at 350 KB or less.” As you can see, you can squeeze quite a few properly-sized files into a single email.

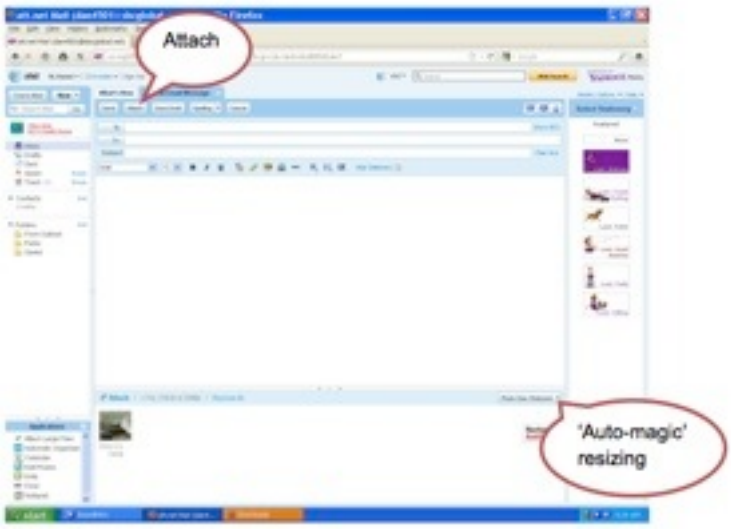
Now on to Part 2 by Dan, and Part 3 by Phil:

The methods of achieving the proper size are pretty straightforward in both the PC and the Mac worlds. For the PC world, Dan Ford has written a nice article showing ways that you can do it almost automatically in several programs. His description follows:

“Attaching Thumbnails, or any other file, is quite simple. Unfortunately, all e-mail programs are slightly different. And, In order to reduce the upload/download time(s) it’s best if the thumbnails, or other files, are not very large. ‘Large’ is a very subjective term in this case.

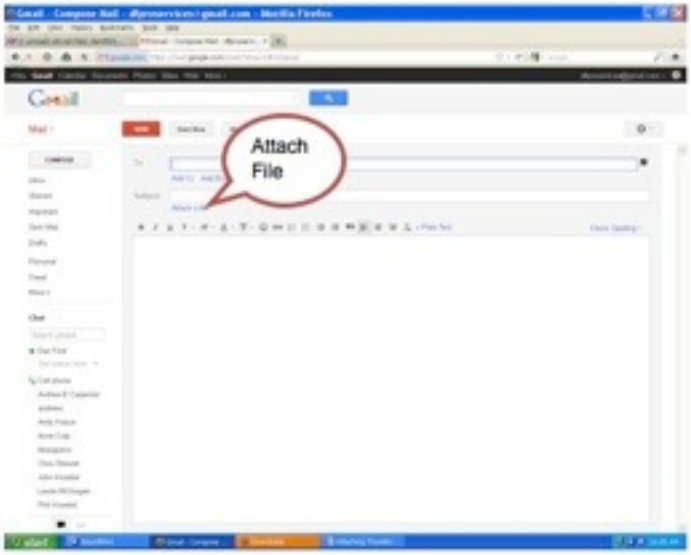
“A case in point, is if a 4 MB Thumbnail is attached to an e-mail, it may take quite some time to upload on your end, the sender, and consequently, download on the receiver’s end. This is easily remedied by reducing the size and resolution of the file, ie, 3“x 4”,(1024 X 768) pixels, and 72dpi. Usually done in photo editing software, ex. PhotoShop, Elements, Picasa. (This is a topic NOT covered in this message.)

“Some e-mail programs may do the reductiion of size ’auto-magically’ for you. See Yahoo! Figure 4 below.



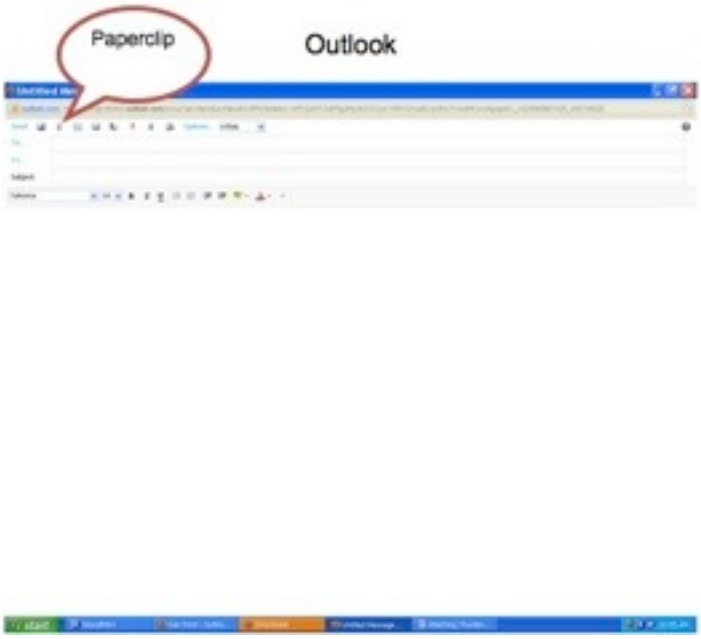
Yahoo!
Figure 4

"The key 'button' to locate is the 'Attach' or 'Attach Files' button (Gmail shown in Figure 5).



Gmail
Figure 5

In Outlook it is a 'Paperclip' symbol (Figure 6). It is always in an area near the top of the e-mail program, near the 'To:' and 'Subject' areas.



Outlook
Figure 6

"After locating the 'Attach' button, its simple! Left-click and locate the 'folder' and subsequent 'file', select the 'file' and right-click on the 'OK' button.

"It may take a few moments for the program to load the file to the e-mail progam. Some e-mail programs may show the file as a graphic and other may merely list the file. Some of the e-mail programs may allow you to select mulitple files at one-time, others you must select the files one-at-a-time. As I said earlier, each e-mail program is slightly different.

"Then, and most important, 'Send' the e-mail. This process may take a little time, and the squirrel inside your computer has a lot of work to do! (That's a joke folks, you do NOT have a squirrel inside of your computer, really.)

"I hope this helps!"
Dan

In the Apple Macintosh world there are several methods which **do not** require external programs like Photoshop or Photoshop Elements. Two such programs are the Preview program and the iPhoto program. Both of these are part of the Apple package. Of the two I prefer Preview because it seems to handle any type photo file thrown at it, so we'll use it as the demonstration case and leave iPhoto for another time.

Step 1

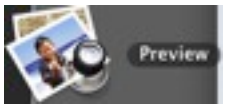


Figure 7

The Preview icon is shown in Figure 7. To start the program simply drag your picture file from your desktop directly onto this icon, and the program will start and show your picture together with the tool bar at the top as shown in Figure 8.

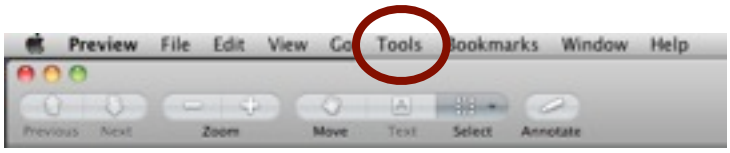


Figure 8

Step 2

Go to the 'Tools' menu and pull it down to show the selections inside. You will see the drop down menu shown in Figure 9. Near the top is the selection 'Adjust Size.' Click on it and the box shown in Figure 10 will open.

This is the important one. Since this image is a horizontal image we will use 1024 for the width. The resolution at 72 pixels/ inch is perfect so we'll leave this as is. You will want to be sure the 'Scale proportionally,' and 'Resample image' boxes are checked. Now hit OK. If you wish you can check to be sure the program has done what it said it would. I did this to see the results of the computation. The result is shown in Figure 11. Note how much the resulting size has shrunk. It's still too big to send but we still need to save the image as a JPEG for emailing, and that will shrink it a huge amount.

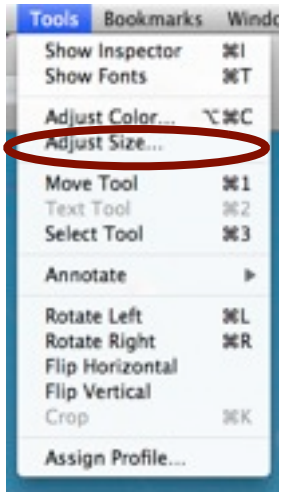


Figure 9

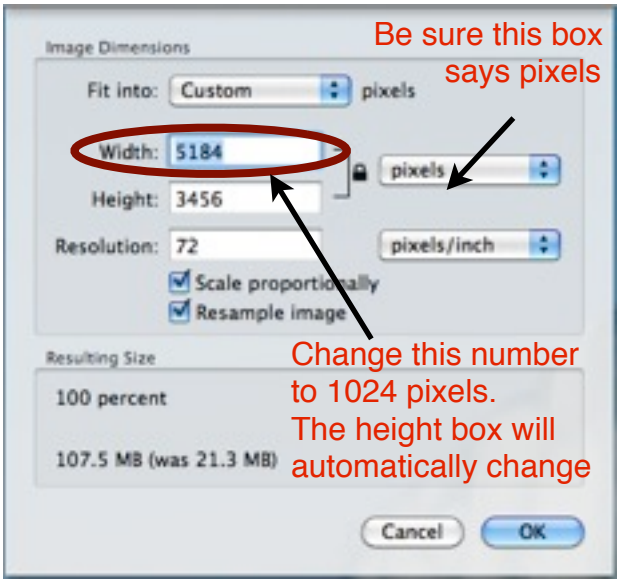


Figure 10

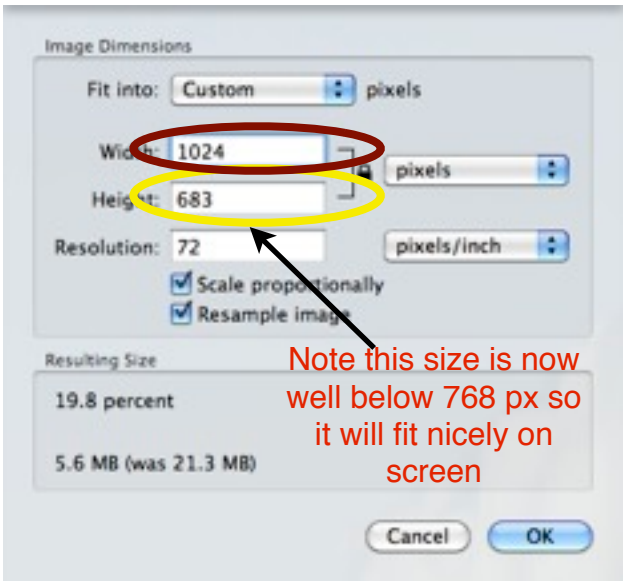


Figure 11

Step 3

Go to File, and pull down the menu. It will look like Figure 12. Go to 'Save As' and click on it. Figure 13 will appear. We will put the finished image on the desktop, so be sure it says 'Desktop'. in the window right below 'Save As.' Pull down the blue arrows to the right of the 'Format' box and select 'JPEG'. Take note of the 'Quality' selection slider circled in green. Slide the slider arrow back and forth between 'Best' and 'Least'. As you do this the file size (circled in Blue) will also change. A value between 150 and 400KB is just fine for just about

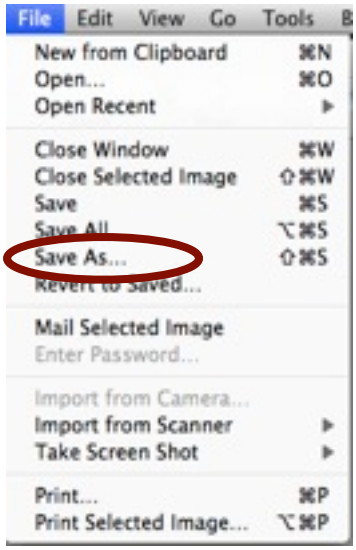


Figure 12

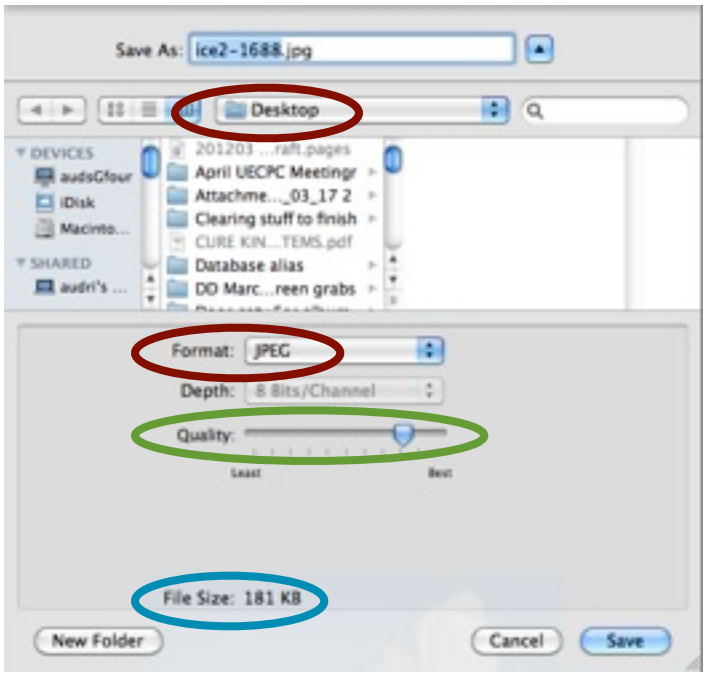


Figure 13

everything we need to do. Now go to the 'Save' box and click it. The image will now be saved as a JEPG (jpg) image on your Desktop. This can now be attached to an email just like any other type file. It can be sent either alone or with several other images. This is because the new size in no longer 5.6 megabytes but in this case only 181 kilobytes or a reduction in size of around 70%. Your email will now have room for many images per message, depending upon your email provider's file-size generosity, your patience and your supply of images. Friends and family really like to get pictures.

You will find some other fascinating options in 'File' pull down menu (Figure 12). One of these is the 'Mail Selected Image' option. This will put the image you've been working on directly into an email message. All you need to do is add the address, hit send, and it's off to your favorite friend(s), club, or PSA. Another thing worth trying, especially if you don't have image adjustment software, is the 'AdjustColor' option on the Tools menu shown in Figure 9. Therein lies a lot of power to fine tune your image's exposure, sharpness, white balance, color and levels. Also be sure to try the Auto Levels button. It can do wonders and add 'pop' to an image just by correcting the color balance. Have fun with resizing and GET those images out there!

Phil

So there you have a basic introduction to resizing. Keep in mind that you will be asked to send in submissions in a variety of pixel dimensions and file sizes, as well as different resolutions. These will require you to substitute the values requested for the ones used in this article. For instance a request for "1000 pixels on the longest side, at 100 ppi, less than 300 KB" would mean you'd put 1000 in place of the 1024 (for a horizontal) or in place of the 768 (for a vertical); and you'd put 100 instead of 72 where resolution is called for; and when you saved your JPEG, you'd adjust the quality until the file size is less than 300 KB.

In addition, you may be wondering why we didn't tell you how to do all this in YOUR software. Well, we saved that for last, and you'll have to do a bit of work, since we don't know what kind of software you have. Here are a few links to instructions for some of the most common software packages we've heard members talk about. Another option is for you to consult the Mentor Program spreadsheet you received earlier, and contact someone who is using your software.

How to Resize Digital Images for Digital Competitions (read this for general information)
http://www.raritanphoto.com/competitions/resize_digital_images.html

Photoshop Elements 7 Video Tutorial - Resizing Photos and Images
http://www.youtube.com/watch?v=Qe851wEGPdU

Batch Processing in Photoshop Elements
http://www.digital-photography-school.com/batch-processing-in-photoshop-elements

How to Resize Images in Lightroom 2
http://www.digital-photography-school.com/how-to-resize-images-in-lightroom-2

How to Batch Resize in Photoshop (applies even if your batch is only one photo)
http://www.digital-photography-school.com/how-to-batch-resize-in-photoshop

How to Resize Images in iPhoto '11
http://howto.cnet.com/8301-11310_39-20075477-285/how-to-resize-images-in-iphoto-11/

How to Resize Images in Picasa
http://support.google.com/picasa/bin/answer.py?hl=en&answer=171944