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Best practices for producing high quality PDF files

Formats Group, Deep Blue

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Adobe's Portable Document Format (PDF) is a popular means of sharing documents, especially those formatted for print. Not coincidentally, PDF files—when prepared properly—also provide an excellent archival file format.

The two most common ways to create PDF files are with applications like Microsoft Word, or by a scanning process that starts with printed materials. Below you'll find specific recommendations for producing high quality PDF files using each of these methods.

This document includes instructions for working with Windows and Macintosh versions of Adobe Acrobat, and scanning instructions.

Creating PDF files with applications supported by Adobe Acrobat on a Windows platform
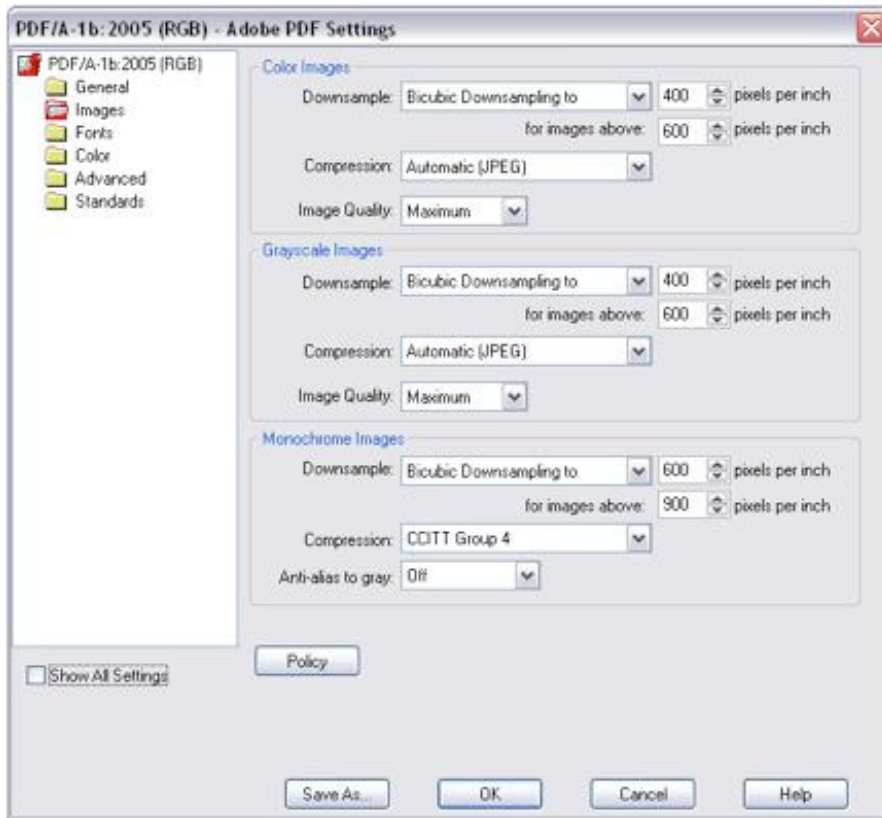
You can create PDF files from within Microsoft Word, for example, when you have the Adobe Acrobat Standard or Acrobat Professional software. *Note that Acrobat Standard and Acrobat Professional are not the same as Acrobat Reader, the latter being a free product with limited functions.* When configured properly, the resulting PDF files will be of high quality, suitable for deposit.

Use the following steps to configure Adobe Acrobat and create PDF files from within a supported application such as Microsoft Word.
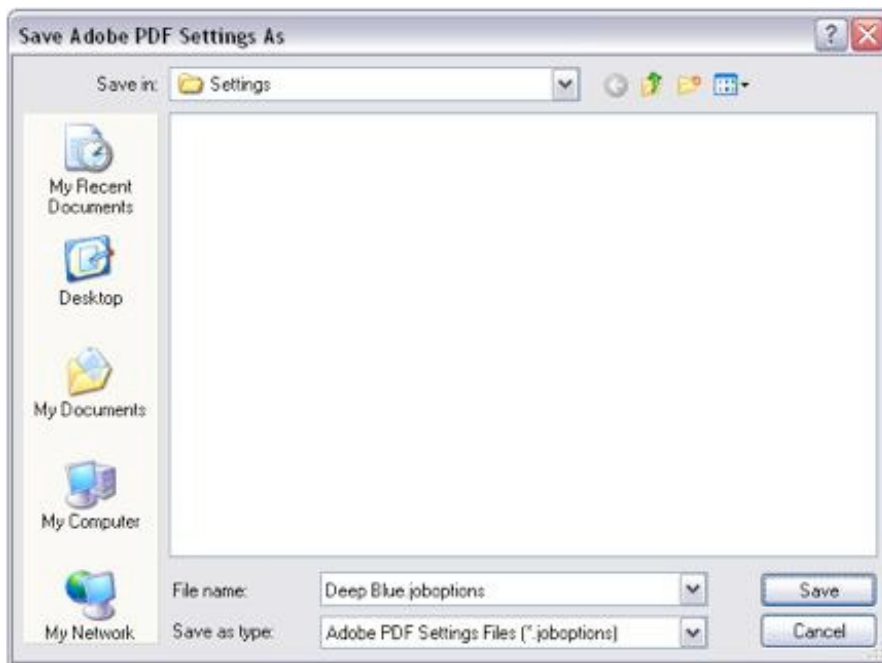
1. Under the **Adobe PDF** menu, select **Change Conversion Settings**. A new window will appear, as shown.
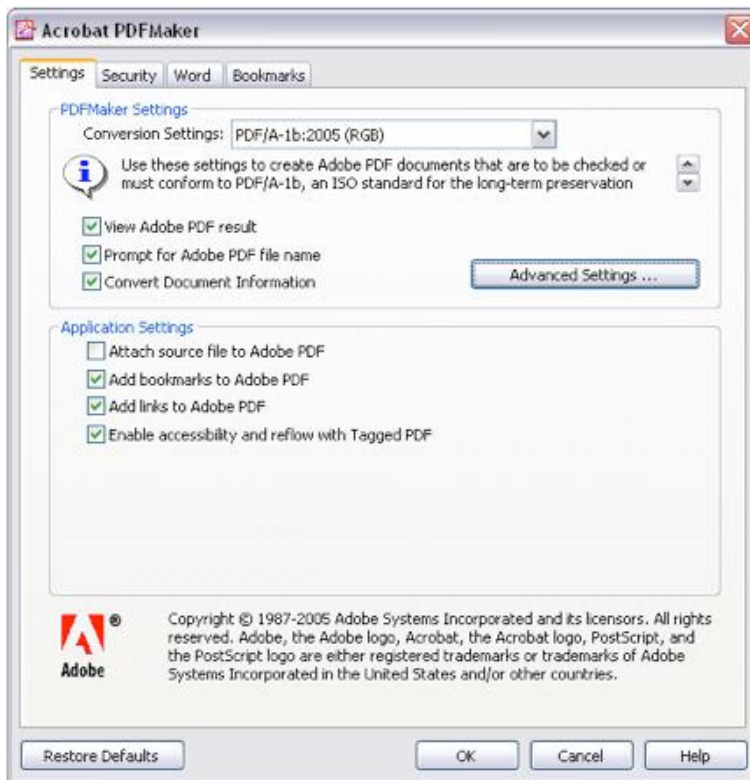
2. At **Conversion Settings**, select "PDF/A-1b:2005 (RGB)" and click **Advanced Settings**. A new window will appear. In this window, click the **Images** folder and change all three of the pixels per inch settings, as shown.
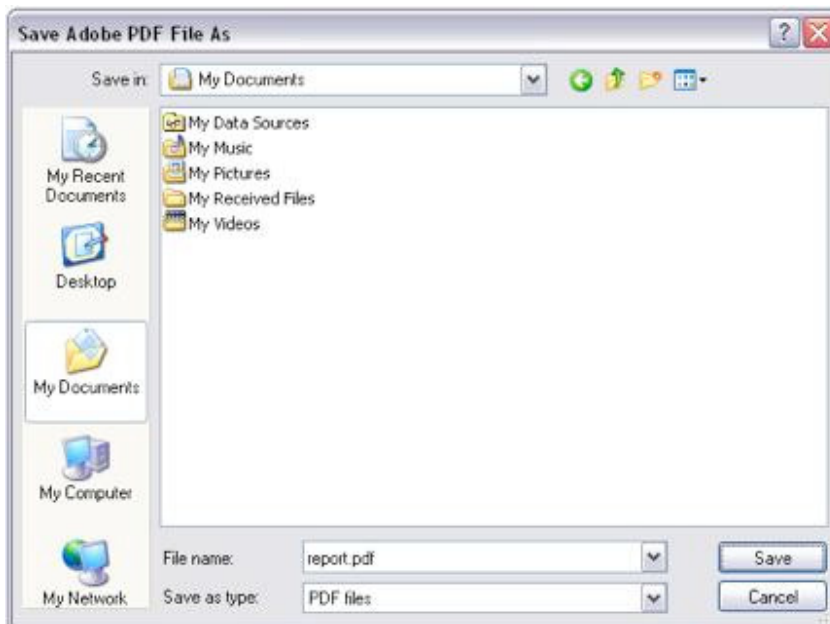

3. Click **OK**. You will be prompted to save the new settings. Enter "**Deep Blue.joboptions"** and click **Save** as shown.

4. Click **OK**. As shown, you will now have a special Deep Blue conversion setting available whenever you want to create PDF files for deposit.
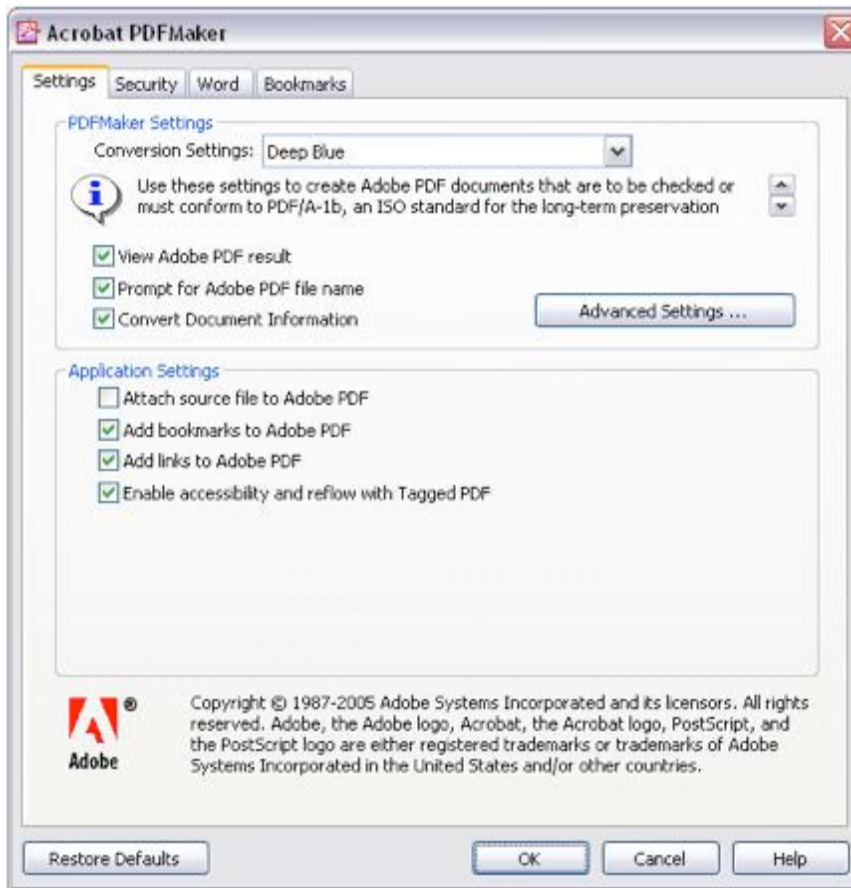

5. Now, under the **Adobe PDF** menu, select **Convert to Adobe PDF**. You will be prompted to save the PDF file, as shown.

Creating PDF files with applications supported by Adobe Acrobat on a Macintosh platform

As per above, you can produce high quality PDFs using the Adobe Acrobat Standard or Acrobat Professional software. *Note that Acrobat Standard and Acrobat Professional are not the same as Acrobat Reader, the latter being a free product with limited functions.*

1. In Acrobat, open **Acrobat Distiller** via the **Advanced** menu.

2. Under Distiller's **Advanced** menu item set the **Default Settings** option to "PDF/A-1b:2005 (RGB)".
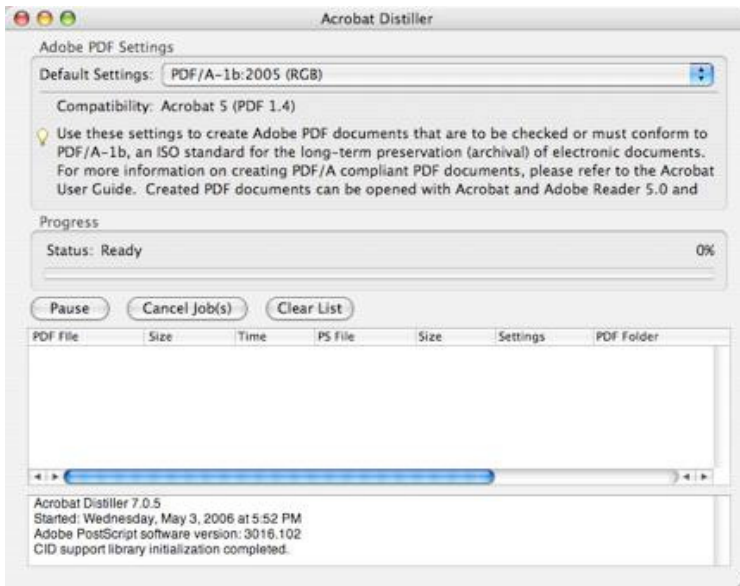
3. Under Distiller's **Edit** menu, select **Edit Adobe PDF Settings…** A new window will appear. In this window, click the **Images** tab and change all three of the pixels per inch settings, as shown.
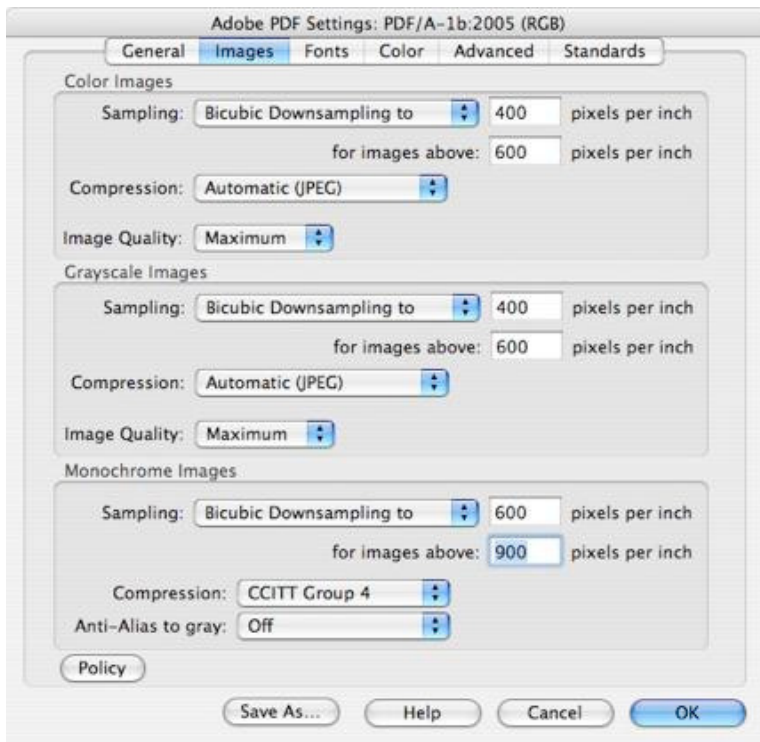
4. Click **OK**. You will be prompted to save the new settings. Enter "**Deep Blue**" as shown.
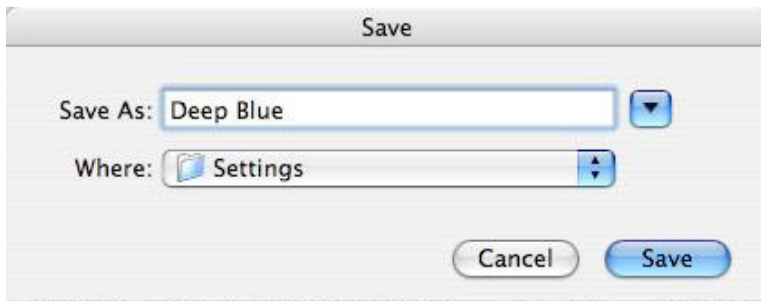
5. Click **Save**. As shown, you will now have a special Deep Blue conversion setting available whenever you want to create PDF files for deposit.
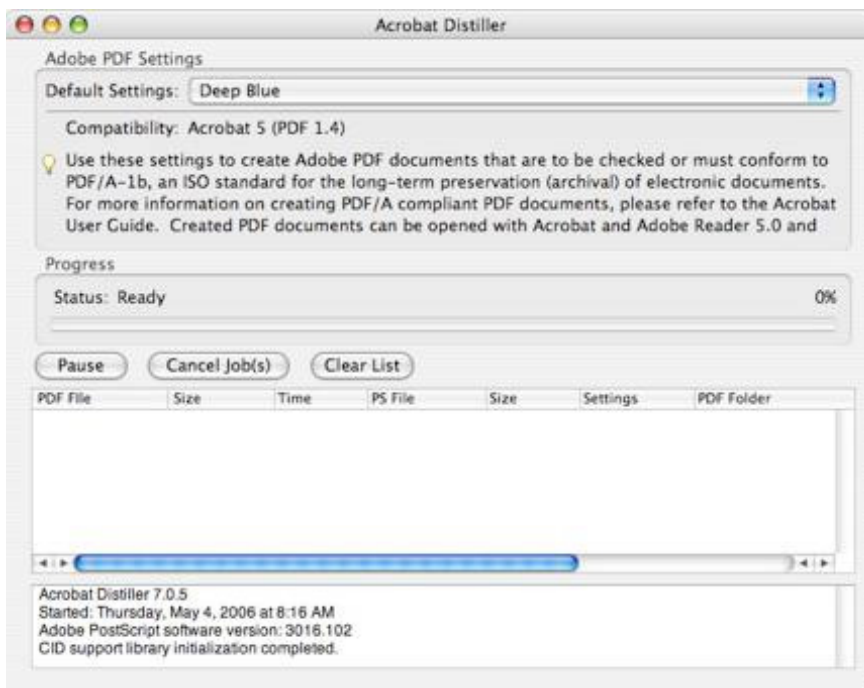
6. Now when you select **Print…** in Word, under the **Printer:** menu, select "Adobe PDF 7.0" as shown below and then click the **Print** button. *Note that this is different from using the PDF option at the bottom of this dialogue. Doing so will not produce the results you want.*
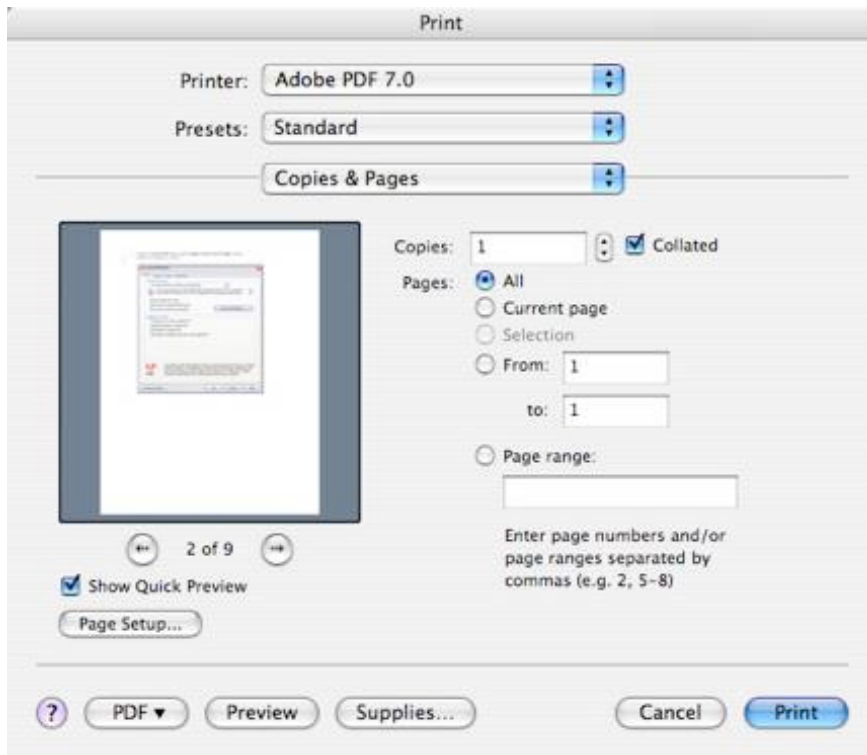
To create PDF files by scanning print material…

PDF files may also be created by scanning print materials. From almost every perspective, all of these methods are less preferable than creating PDF files directly from an application as described above due to increased file size and compromised viewing and printing characteristics. Nevertheless, PDF files created from scanning are a reliable way to preserve materials when no other options are available. Regardless of the method, the produced PDF file should have the following properties:

- All materials should be scanned at 100% scale to the dimensions of the original.
- Pages containing text and/or line art should be monochrome (black and white), 600dpi (or 300dpi for oversized materials greater than 11x16 in/28x41 cm), and be compressed using ITU Group IV compression.
- Pages containing photographs and/or illustrations should be 24-bit color using the sRGB color space or 8-bit grayscale, 400dpi (or 300dpi for oversized materials greater than 11x16 in/28x41 cm), and be compressed with JPEG compression using the highest quality setting.
- Missing or blank pages should be represented as blank images of the same size as the original.
- The PDF file should be optimized and should be in ("Searchable Image (Exact)"/"Image+Text") format.

…using Adobe Acrobat Professional

Adobe Acrobat Professional has built-in scanning capabilities that can be used to create PDF files using printed materials. *Note that Acrobat Professional is not the same as Acrobat Reader or Acrobat Standard; only Acrobat Professional has support for scanning.* Use the following steps to create PDF files using a scanner with Adobe Acrobat Professional. These steps apply to both Windows and Macintosh, with only slight variations in appearance:

1. From the **File** menu, select **Create PDF** and then **From Scanner**. Select your scanner device, choose **Front Sides** or **Both Sides** as appropriate, select **Recognize Text Using OCR**, and select **Add Tags To Document**.

2. Click **Image Settings**. A new window will appear. In this window, change the settings as shown.

3. Click **Scan**.

…using your own choice of software

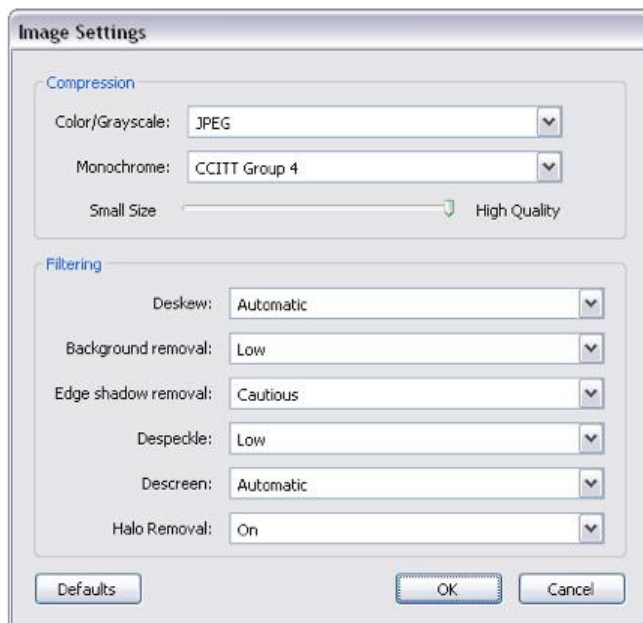Regardless of the method you use, to create high-quality PDF files, follow the general guidelines above as well as the following:

- If your process creates intermediate files (TIFF, PostScript, etc), it must not change the resolution of the original scans (downsampling) or use lossy compression such as JPEG. (These methods, although they do reduce file size, will cause irreversible quality loss.) TIFF is an excellent choice for an intermediate file format, and acceptable compression schemes (which can all be used in combination with TIFF) are ITU Group 4 (for black and white material only), LZW, and Flate (Zip).

Creating PDF files on a large scale

If you need to create a large number of PDF files, these approaches will not be efficient for you, although the same principles outlined here will apply equally to a large-volume operation. Before you start your project, contact us and we will be happy to provide advice to your staff or to your scanning vendor to make sure that your materials are in the best possible form for preservation.

Questions?

If you have any questions, please contact us at deepblue@umich.edu and we will be happy to help you create PDF files for the ages.