

Documenting Your Institution's Patents: A Case Study from Clemson University

Abstract: R.M. Cooper Library at Clemson University is a Patent and Trademark Resource Center (PTRC). In 2013, we embarked upon a project to add access to Clemson patents to TigerPrints (our Institutional Repository) and to our online catalog. The steps that we took can be followed by anyone who is interested in showcasing patents associated with their own institution. I focused on using free, widely-available resources, so there is no need to rely on databases that are only available at a PTRC, although these resources can be very helpful.

Create a Plan

The first step in this project was to determine the scope. Which documents should I collect? What time frame? Should I limit to employees, or consider students as well? The answers to these questions have implications on how to continue, so get the answers before you get started. (Ask me how I know.) In my case, I decided I wanted to collect all documents assigned to Clemson University.

Once I knew what I wanted to collect, I contacted the Clemson University Research Foundation (CURF). They are the department that coordinates intellectual property and technology transfer activities. We discussed the purpose of the project, which is to promote Clemson research. We agreed that it would be best to limit the collection to issued patents. Patents are, of course, public documents, and available at many different sites. I would simply be adding an additional access point. But there are a number of reasons not to promote published patent applications. While they are also public documents, they are not equivalent to patents. First, an application may change significantly during the examination process. So information in the application could be outdated. An application may never mature into a granted patent, so it may reflect a line of research that will not be continuing, or has changed significantly. And finally, although it is a requirement that an invention be fully disclosed, it is sometimes desirable to keep the details as secret as possible until it is fully protected by a patent.

Your Tech Transfer Office might maintain a list of patents, or have some other means for tracking intellectual property. In my case, the Office had recently deposited their files with our Special Collections Unit. This became a valuable resource, as I was able to identify and verify the earliest patents associated with Clemson.

Determine what information to collect

Once I determined the scope of the project, and garnered the support of the Tech Transfer Office, the next step was to create a comprehensive list of documents that met my requirements. In essence, I needed to create a list of patents associated with Clemson University. An organization that owns the rights to a patent is referred to as an assignee, so the Assignee field is essential. What other information should I collect? Certainly all of the bibliographic data from the front page of the patent would be useful. Inventor, title, patent number, patent date, and abstract are also essential. Classification data and information about the application are not essential, but can prove to be very useful for researchers.¹

¹ Note that classification information has changed significantly since 2015 when the USPTO and other partners began using the Cooperative Patent Classification (CPC). Consider this carefully.

Next I needed to determine what was available for download. Because I assumed that there would be more than a handful of documents, I was hoping for a way to download bulk data. This is not an option with the PatFT database. Luckily, two other free databases have useful features.²

freepatentsonline.com (FPO)

Users must create an account, which is fast and free of charge. Registered users have access to RSS feeds for categories of patents/patent applications and lists of patents/patent applications issued in particular classifications. In addition, registered users can save searches and create alerts. But the most useful feature for my project is the ability to create portfolios of patents and published patent applications that can be exported into spreadsheets. Each account can create up to 20 portfolios with a total of 10,000 documents. I was able to create a list of patents assigned to Clemson University from 1970 to date. I saved my search of *Clemson as Assignee*, and created a search alert. So I am notified weekly as to how many patents /patent applications are issued to Clemson, with links to bibliographic data and pdfs of the full patent.³

Espacenet

Espacenet is the patent database hosted by the European Patent Office (EPO). It contains more than 90 million patent documents from around the world, including the United States. It is possible to export up to 500 documents from Espacenet into a spreadsheet. It may be necessary to do several searches to create sets small enough to download all the needed data. Note that the search field for institutions is “Applicant” not Assignee. Be sure to click on *load more for export* on the bottom of the page, to allow downloading more than 25 records at a time. There is a lot of unique information relating to the search that is not available in the USPTO PatFT database, but not all of it is relevant. (See Appendix 2).

Search by Assignee

Once I had determined what information I wanted – and where to find it – the real work began. The first step is obvious: create a list of patents that have been assigned to Clemson University. But this is not as easy as it may seem. Creating a list of current patents was fairly straightforward. I went to the official USPTO database page <http://patft.uspto.gov/> and did a search in the PatFT database using “Clemson University” as the Assignee. However, even this simple search quickly became more involved. “Clemson University Research Foundation” is the name of the entity to which Clemson patents are currently assigned. But there are many variations. Some patents – particularly those that have an additional assignment – list “Clemson University.” So a more general search of “Clemson University” captured all of these. However, there was a period of time when patents were not assigned to Clemson at all, but to an outside firm. So it was necessary to search for patents assigned to “Research Publications” and limit to “Inventor State SC” to ensure a complete list.

² See Appendix 2 for a list of fields displayed by these two databases.

³ As a side note, when I get these emails, I send a personal message to the inventor congratulating them on their accomplishment, and letting them know that their patent will be included in our Institutional Repository. I also invite them to deposit other work in TigerPrints.

In addition, Clemson University has accepted patents as gifts in kind. I needed to consider whether or not to include these patents, as they were not technically invented by Clemson affiliates. In the end, I decided to retain them, as they relate to research being performed at Clemson.

There are several limitations to searching by assignee that should also be considered. First and foremost, the assignment data reflects the assignment recorded at the time the patent issued. If a patent assignment changes, the database may or may not be updated, as it is not a legal requirement to register changes in assignment. Also, the assignee field is only searchable from 1976 to present. Older patents can only be searched by patent number, issue date, or current classification.

The USPTO also hosts an assignment database. <http://assignments.uspto.gov/assignments/?db=pat> This is a very useful database, containing assignment data back to 1980. It allows searching for “assignor” as well as “assignee,” which helped me identify several patents that had once been owned by Clemson. There are other useful filters in the advanced search, such as “conveyance type-license.”

The USPTO also hosts a beta version of a new database called PatentsView. <http://www.patentsview.org/web/> From their site:

“PatentsView allows users explore technological, regional, and individual-level patent trends via search filters with multiple viewing options. The database links inventors, their organizations, locations, and overall patenting activity using enhanced 1976-2014 data from public USPTO bulk data files.”

Finally, I would be remiss if I didn’t mention two databases available only at a PTRC. PubWEST and PubEAST have many features to identify and download/print documents that can save users time and energy. Contact your local PTRC for further information. (See Appendix 4)

Searching for pre-1976 patents

Although assignment data is not searchable for patents issued prior to 1976, surprisingly, some of the data can be found in google patents. This can be useful as a supplement, but searching google patents has its own set of challenges. Clicking on the gear icon to open the advanced search screen allows searching by issue date and assignee. I searched “clemson” in the assignee field and selected an issue date range of 1790-1975. This search yielded 52 results – nearly all of which were for Clemson Brothers, which is not relevant. But I found a couple of gems. 15 patents assigned to “Clemson Agricultural College,” and 7 assigned to “Clemson University.”

Searching for patents issued to individual inventors

Once I had a list of patents assigned to Clemson University, I also had a list of inventors associated with those patents. Because one of the goals of this project was to document the earliest patent activity, I focused on pre-1976 patents. I searched by inventor name to see if I could uncover other relevant patents associated with these early inventors, and in many cases I did.

Another way to find pre-1976 patents issued to individuals is to search specialized databases of early inventions by geographic area. Many of these lists are limited to very early patents. But if your institution has a long history, it may be useful. Here is a comprehensive list of databases for individual states or metropolitan areas: <http://libguides.clemson.edu/c.php?g=230608&p=1529741>

Patent Family ID Number

The USPTO has recently begun assigning a patent family id number to correlate related documents under a unique Family ID number. Members of the family include published patent applications, US patents, and foreign references, as well as other documents. The information has been added retroactively to the PatFT database, so it is available back to 1970.

It is important to note that this field is NOT available in google patents. It is searchable as a keyword in freepatentsonline.com, but there is no Patent Family ID Number (FMID) field, so it is not available for export. The information is also searchable in Espacenet, but it is not a field that is included when exporting documents. The only way to get this data in bulk is from the USPTO. If your list of patents is relatively short, it is worth the time to input the data manually.

Final Steps

After some trial and error, I refined a set of steps to create a comprehensive list of documents. (See Appendix 1.)

After the spreadsheet was complete, I met with my colleagues Andy Wesolek and Lisa Bodenheimer to determine the best way to transfer the information to TigerPrints, and ultimately into our Integrated Library System (ILS). (We use III Millennium for our online catalog.) There are as many ways to do this as there are projects. At first we thought we would import the data directly from freepatentsonline.com. The fields that they include for downloading covered our needs, without the extra fields provided by Espacenet (see Appendix 2). However, a close reading of their license agreement made it clear that this was not within our rights.⁴ At the time we began the project, our best option was to manually input the metadata for each patent. There is now a way to get bulk data directly from USPTO:

<http://www.uspto.gov/learning-and-resources/electronic-bulk-data-products>

Now that the patents are displaying in our IR and our ILS, it is a relatively simple matter to add new patents as they issue. When new patents are added, I am notified via my preset alert from FPO. Then I send a note to the IR Coordinator, who adds it. She in turn contacts the Cataloger to ensure that the metadata is added to our online catalog. In addition, on those happy occasions when I find a Clemson patent from our archives, I can simply send a message to the IR Coordinator and she takes care of it from there.

This has been an extremely rewarding project, and it has been well-received. Statistics from the first two years of the project are encouraging. From 7/2013-7/2015 there have been 3144 views and 1968 downloads from TigerPrints of the 328 patents in the system. In addition, there have been 632 views from our online catalog. Well worth the time spent to make this project happen.

⁴ For more about this aspect of the project, please see our article: Andrew Wesolek, Jan Comfort and Lisa Bodenheimer. "Collaborate to Innovate: Expanding Access to Faculty Patents through the Institutional Repository and the Library Catalog" *Journal of Collection Management* Vol. 40 Iss. 4. Available at: http://works.bepress.com/jan_comfort/24/

Appendix 1

Working with Search Results

- Perform a search in the PatFT database
 - Copy the search string and paste it into freepatentsonline.com (FPO)
 - This prevents having to do a search in the AppFT database at USPTO, as fpo will search both simultaneously
 - Edit the search if necessary to conform to FPO search conventions
 - Create a portfolio in freepatentsonline.com
 - Repeat for each relevant search, adding records to the same portfolio
 - Download the portfolio and export the data into a spreadsheet
 - Save the spreadsheet
 - Be sure to also save the portfolio (create a new portfolio for updates so that you can easily add the latest patents without disturbing the existing portfolio)
- Perform a search in the Espacenet database
 - Revise the search if necessary to ensure that results do not exceed 500
 - Download search results into a spreadsheet
 - Save the spreadsheet
 - use a naming convention that includes dates so you can see at a glance what you need
 - sort the columns to ensure that the fields used by both fpo and Espacenet are visible and in the same order (hide or delete the extraneous columns)
 - Create a copy of the spreadsheet with a distinct name
- Copy the fpo spreadsheet data and paste into the 2nd Espacenet spreadsheet
- Sort the data by document number
 - Delete any duplicate records, being careful to retain all of the useful data
 - When given a choice, keep the formatting from fpo – beware of differences in patent application number
- Create a column for patent family id and manually input (optional)
- Supplement spreadsheet data with additional search data
 - Google patents
 - Commercial scientific/technical databases
 - Cited patents
 - Search paper records in Special Collections

Appendix 2

Fields available for Downloading and Exporting into a Spreadsheet

freepatentsonline.com

Document Number

Document Type <US or USAPP>

Publication Date

Title

Abstract

Inventor Name

Assignee

Application Number

Filing Date

Primary Class

Other Class

Espacenet

Title

Publication number

Publication Date

Inventor(s)

Applicant(s)

International Classification

Cooperative Patent Classification

Application Number

Date of Application

Priority Number(s)

Patents cited in the search report

Literature cited in the search report

Patents cited during examination

Literature cited during examination

Other patent citations

Other literature citations

Patents used in opposition

Literature used in opposition

Patents cited by the applicant

Literature cited by the applicant

International search citation

International search NPL citation

<NPL = non patent literature>

Supplementary international search citation

Supplementary international search NPL
citation

Appendix 3

Metadata

Metadata for Millennium (Clemson's Integrated Library System)

Author

Title

Publication Info. <patent issue date>

Summary <abstract>

Genre <patent>

Added Author <additional inventors>

Standard No. <Patent Number. The words "patent number" precede the number to make it key word searchable. MUST have the words to make it searchable>

Permalink <the way to get to TigerPrints>

Metadata for TigerPrints (Clemson's Institutional Repository)

Title (no field heading)

Inventor(s) (no field heading)

Document Type <Patent>

Patent Number <keyword searchable without the words "patent number">

Publication Date <make sure it is the date the patent issued and not the date the application was filed>

CPC (as of 2015)

Abstract

Application Number <NOT the searchable number – the one used internally by USPTO making it a bit more difficult to determine patent families>

Assignees

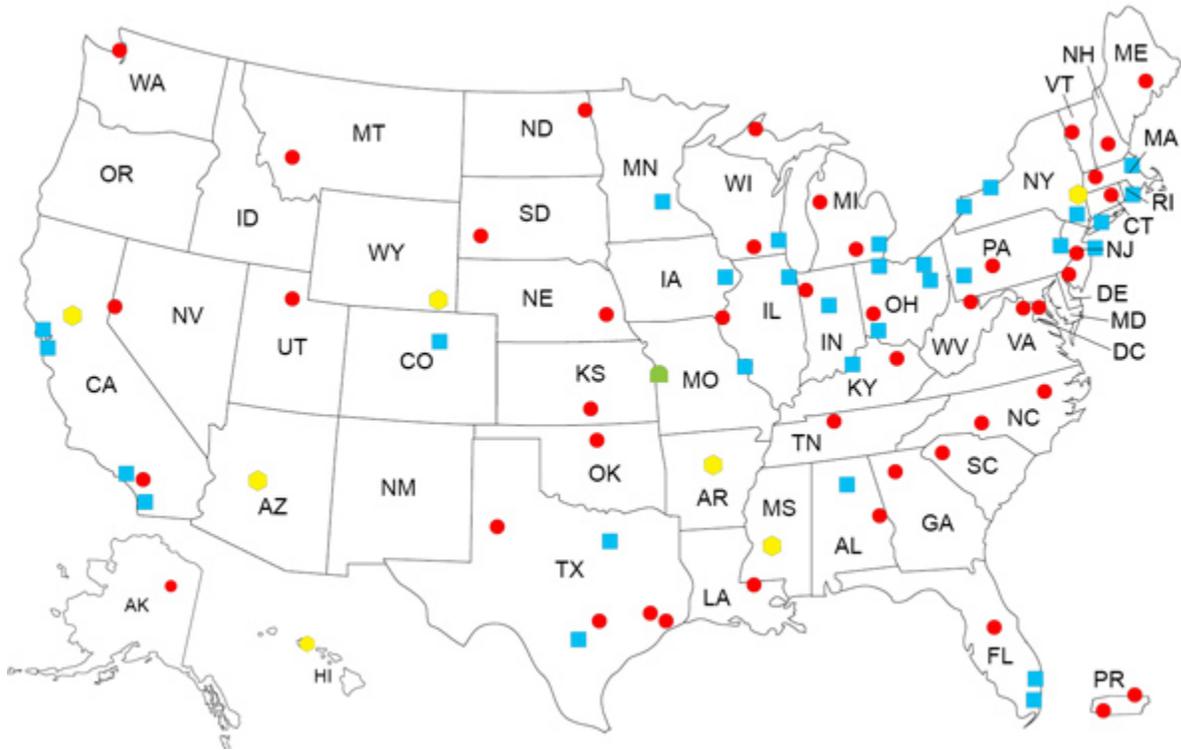
Filing Date

Primary/U.S. Class

Other/U.S. Class

Appendix 4

Patent and Trademark Resource Centers (PTRCS)



 - City or County Public Library  - College or University Library

 - State Library  - Special Library

PTRCs by State <http://www.uspto.gov/learning-and-resources/support-centers/patent-and-trademark-resource-centers-ptrc/ptrc-locations>