

Getting Started with BaBase

The following steps will introduce you to the new web-based BaBase database system, show you how to login, how to navigate to the tables, and where to write queries.

1. Become oriented with the available resources.

BaBase Documentation

Before you can effectively use any data tables in BaBase, you must understand how the data are collected in the field, input into the database and what the data codes mean. At each step in the data flow, there are various integrity checks and quality control measures. Understanding the limits of the quality control will help you determine which data in Babase are the right data for your analysis.

There are a number of resources to help you become familiar with the Amboseli Baboon Project and the BaBase database. The BaBase Wiki is the best starting point. A Wiki looks like a regular webpage but is an online collaboration tool that allows any user to edit content of the webpages through a browser. Becoming a registered user of the Wiki will allow you to not only read what is on the pages but also edit. This will be a nice resource for us to post useful tips and hints for each other as we learn this new system.

<http://papio.biology.duke.edu/babasewiki/>

From the starting page of the BaBase Wiki there is a link to **BaBase Help**. This page has links to all of the important documentation you will need to use the database. There are 4 main documents related to BaBase data collection and structure

- a. **Amboseli Baboon Research Project** – General overview website for the project
- b. **Amboseli Baboon Research Project Monitoring Guide** – Defines protocols specific to the field data collection in Kenya
- c. **BaBase Pocket Reference** – Diagrams the relationships between data tables
- d. **BaBase Technical Documentation** – Technical specifications for data management that lists the ‘rules’ for data input and the integrity checks that occur within Babase programming.

The **Monitoring Guide** and **Pocket Reference** will be the most useful source of information for users. You will learn how the data is collected, what information is in each table and column, and how the tables are connected. This information is crucial to using the database since you often have to link multiple tables in order to assemble the data necessary for your analysis. You should familiarize yourself with these two documents before you start using the system. These are in PDF form and can be printed easily.

BaBase Mailing Lists

There are two BaBase mailing lists, the babase@princeton.edu list for everyday questions and conversations about BaBase, and the babaseannounce@princeton.edu list that is low traffic and used only for important announcements. BaBase users are encouraged to sign up on both lists, but especially the BaBase Announce list. Links to signup for both of these lists can be found on the BaBase Wiki.

<http://papiro.biology.duke.edu/babasewiki/BabaseMailingLists>

2. Get a login

Everyone needs their own login to access the web interface for BaBase. This is created by the primary database manager, Karl Pinc. Please contact a BaBase administrator (Lacey or Tabby) with your login of choice and they will contact Karl. If you need access to the unix server, Papiro, (where Babase is held) as well, then you will need a separate login from Hunter at Duke. (Access to Papiro is only necessary if you need to store files and FTP documents back and forth on Papiro.) Once you have a BaBase login and temporary password you are ready to login.

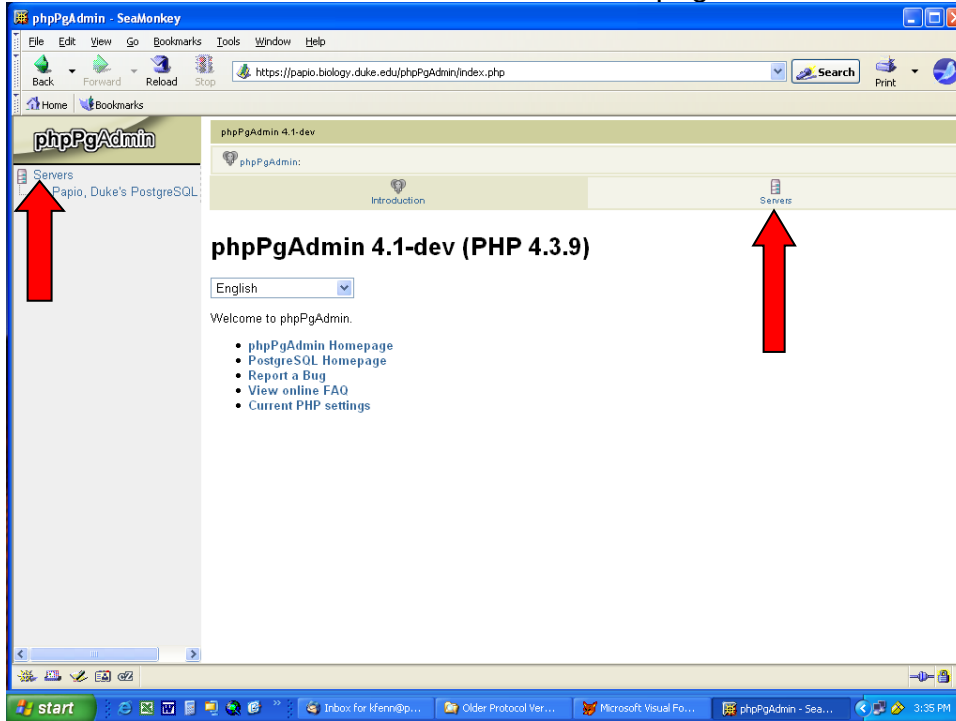
3. Get to the Login Screen

Using Mozilla SeaMonkey (not Internet Explorer), go to the BaBase login screen

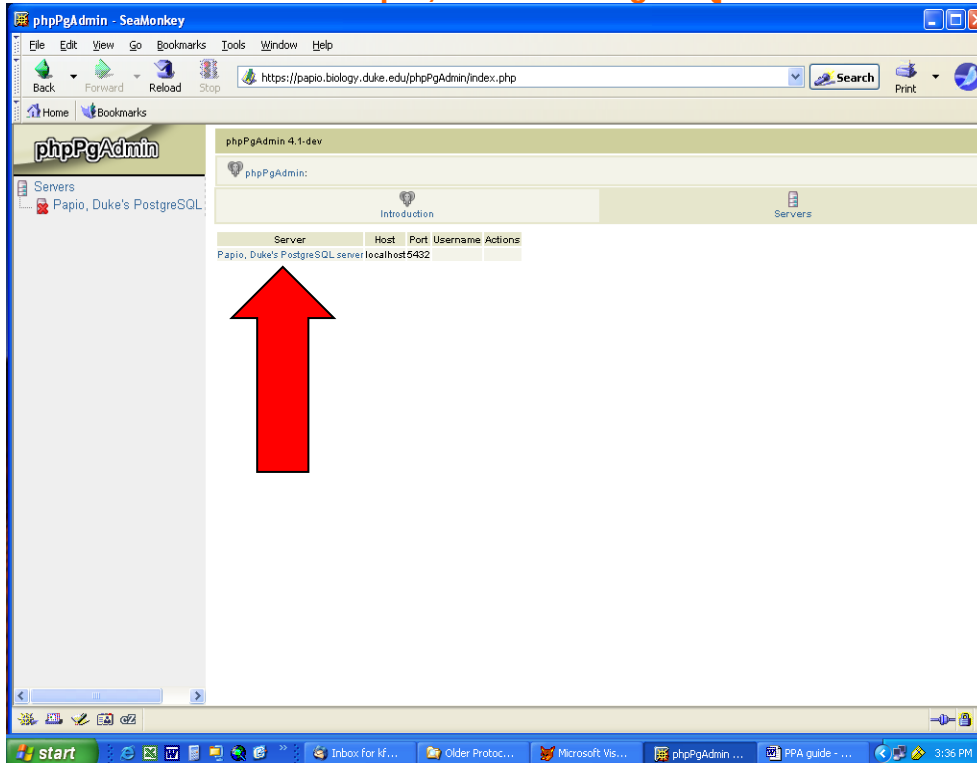
<https://papiro.biology.duke.edu/phpPgAdmin/>

There are slight differences in the login process with Macs and PCs. The PC interface is shown below, but a similar process should be available in Macs.

Click on the **Servers** link on either side of the page.

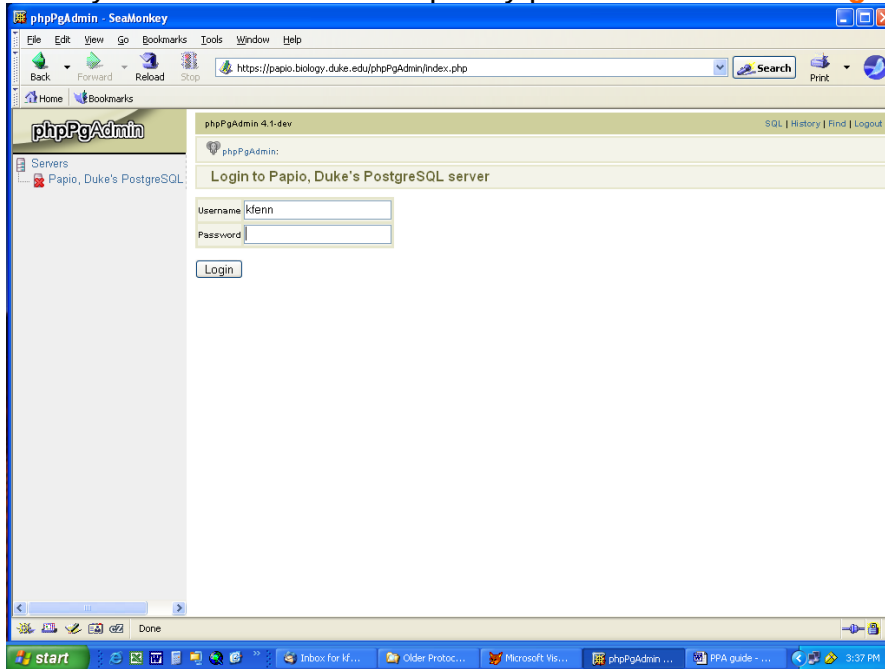


Now click on the link to **Papiro, Duke's PostgreSQL Babase Server**.

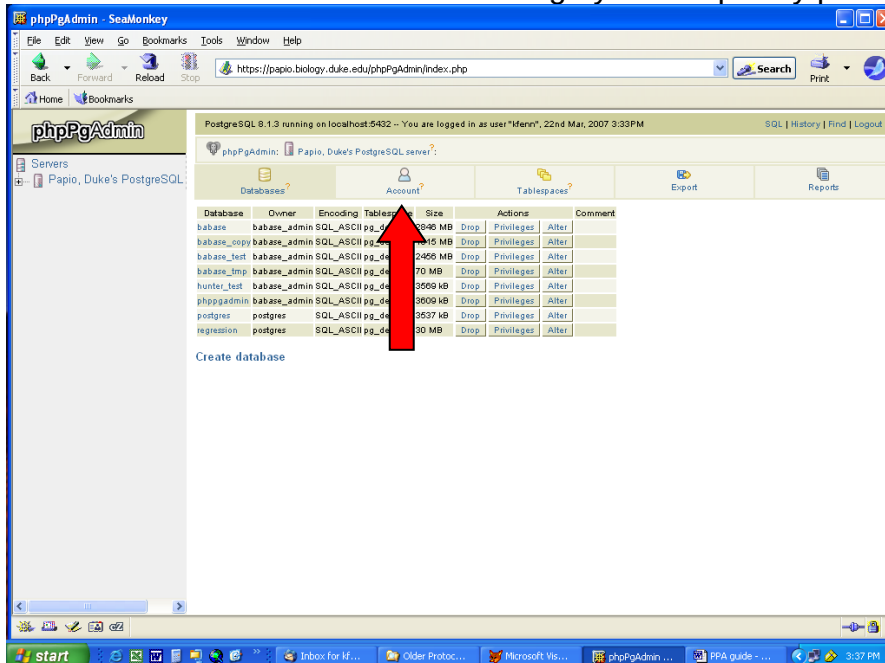


4. Login and Change your Temporary Password

Enter your username and temporary password and click **Login**.



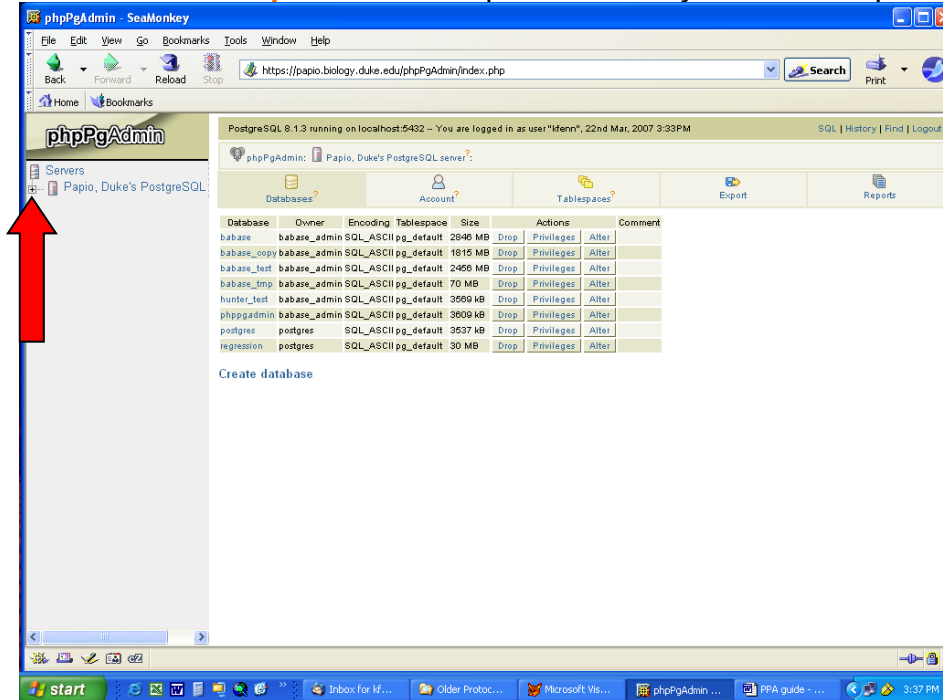
Click on the **Account** button and change your temporary password to a new one.



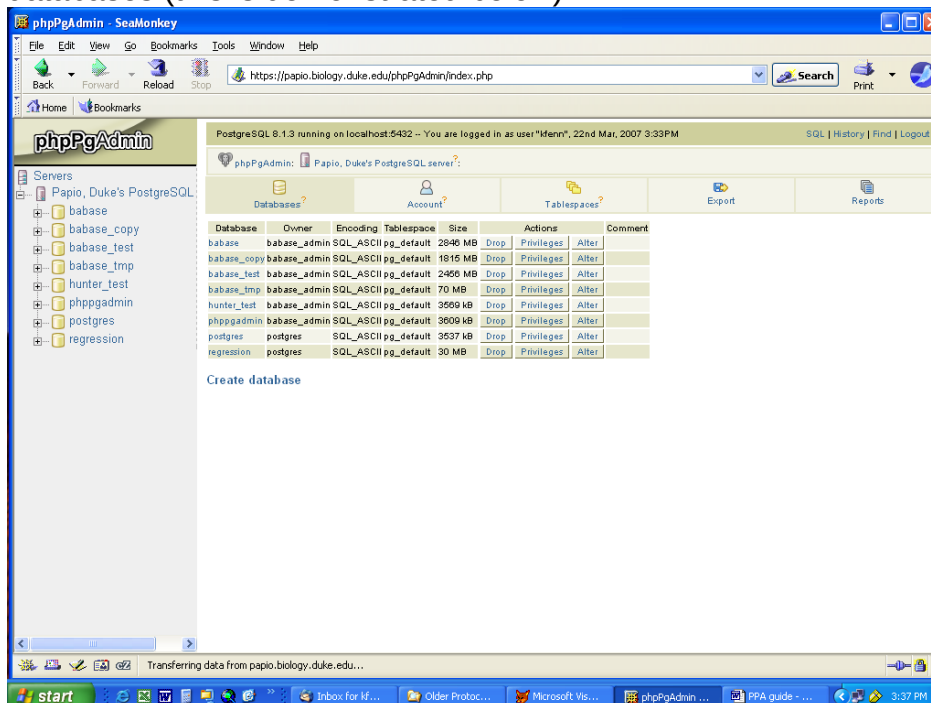
Go back to the databases page by clicking the **Databases** button to the left of the **Account** button.

5. Explore the Structure of Papio's databases

This is the next screen you see after logging in. Click the + mark on the left side of the server icon for **Papio**. This will open a directory of all the Papio databases.



You can see that both the directory on the left and the main screen on the right show the same databases. You can use links on either screen to navigate and browse the databases (this is demonstrated below)



5.1 Why are there so many versions of Babase?

Before we do any navigation and browsing, notice that there are currently several versions of BaBase on the server (we are working with multiple copies during the conversion process).

The database of interest to most users will be **babase**. However, it is important to make a distinction between **babase** and **babase_test** while both are still available on Papio. (Users can ignore **babase_copy**, and **babase_tmp**).

The purpose of running the conversion between FoxPro and PPA is to clean up the data by passing it through a filter with a series of programmed 'rules' (such as, "you cannot have a reproductive cycle if you don't have a matured date"). If data violates these rules, the program reports the errors and does not upload that piece of data to the PPA database. Currently, every time a conversion is run between FoxPro and PPA, the data load into **babase_test**. This means that errors encountered during the conversion may prevent some data from loading into **babase_test**.

The data in **babase**, however, are directly copied from the most current FoxPro version of the database. This means data are loaded into PPA without going through the "filter" of a conversion run. In this case, there is no error checking so there is no data that won't load.

After every conversion run, database managers take the error report and return to the original FoxPro data to make corrections. (The goal is to run a conversion and have no errors reported.) Since all error corrections are first made in FoxPro before another conversion run is initiated, and since virtually all errors have now been corrected, **babase** is nearly the same as **babase_test** at this point. However, be aware of the differences as long as these two databases exist and check with your database manager first to determine which database is best for your purposes.

(NOTE: When the final conversion run is clean (i.e. errors-free), **babase** should be the only database that users query.)

For the purposes of this tutorial, **babase** is the database we will work with.

5.2 A short tour of the directory

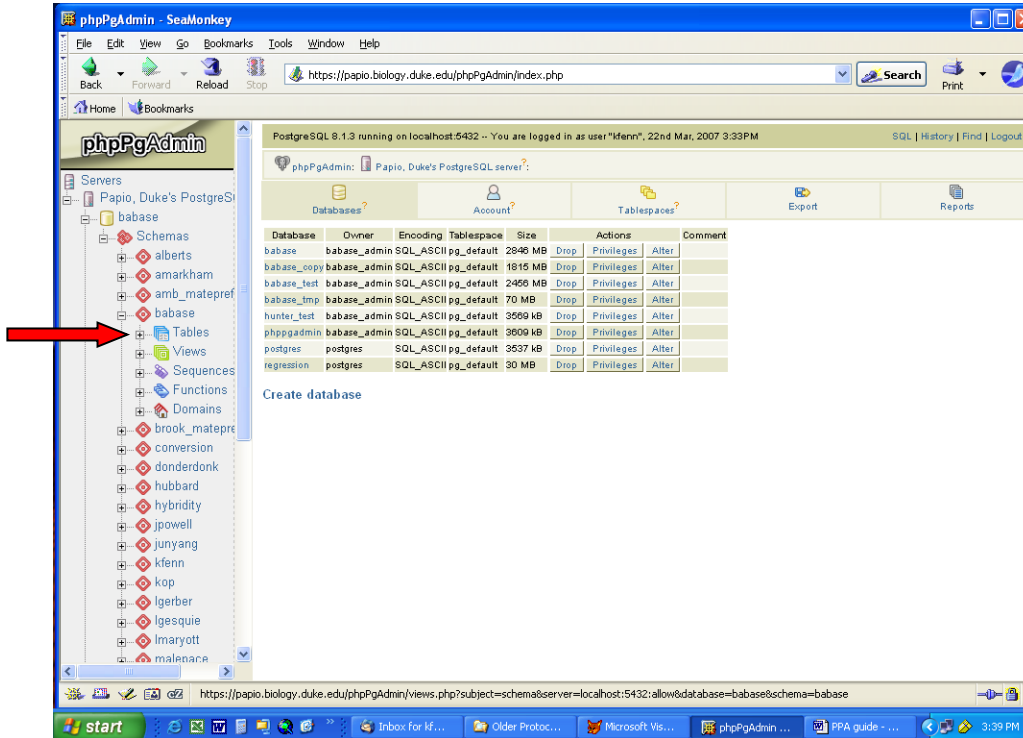
You can access the databases using either the left side or main screen, but it is useful to first tour the directory “tree” on the left to visualize the sub-structure within the **babase** database. Click on the **+** next to **babase**, then click on the **+** next to the **Schemas** icon in the directory.

This is the next screen you see. It shows a ‘schema’ for every Babase user with a login and gives each person a place to store outputs while working in that database. There is also a **babase** schema within the **babase** database. This is where you can find all the data tables. Click on the **+** next to the **babase** schema icon.

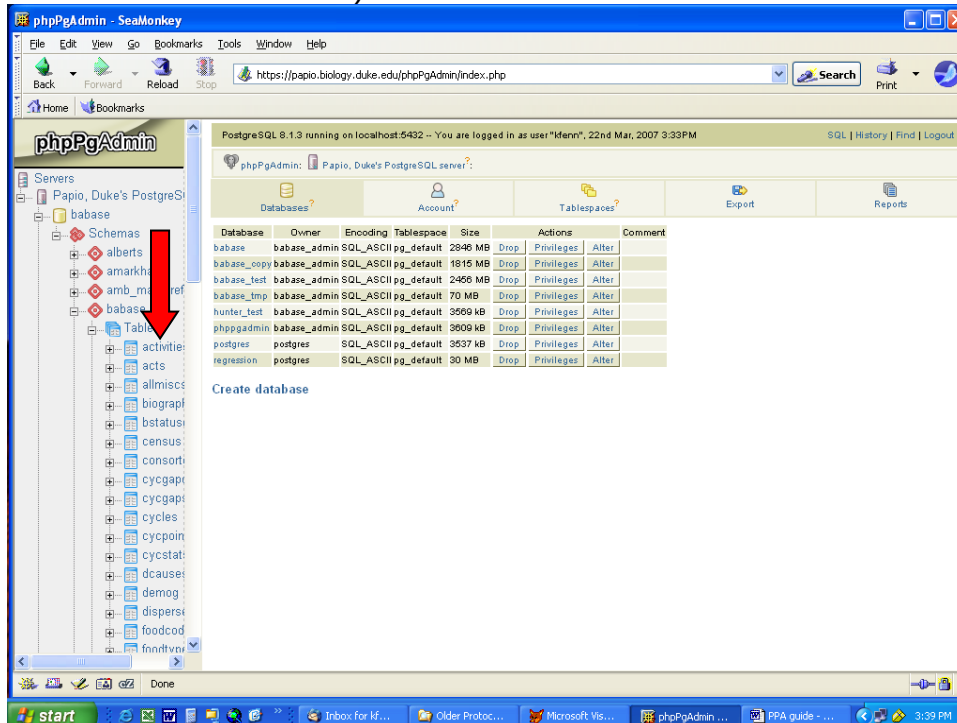
The screenshot shows the phpPgAdmin web interface. On the left, a directory tree is expanded to show the 'babase' database, which contains a 'Schemas' folder. A red arrow points to the 'babase' schema icon within this folder. The main area displays a table of databases with the following columns: Database, Owner, Encoding, Tablespace, Size, and Actions. Below the table is a 'Create database' link.

Database	Owner	Encoding	Tablespace	Size	Actions	Comment
babase	babase_admin	SQL_ASCII	pg_default	2846 MB	Drop Privileges Alter	
babase_copy	babase_admin	SQL_ASCII	pg_default	1815 MB	Drop Privileges Alter	
babase_test	babase_admin	SQL_ASCII	pg_default	2456 MB	Drop Privileges Alter	
babase_tmp	babase_admin	SQL_ASCII	pg_default	70 MB	Drop Privileges Alter	
hunter_test	babase_admin	SQL_ASCII	pg_default	3569 kB	Drop Privileges Alter	
phppgadmin	babase_admin	SQL_ASCII	pg_default	3809 kB	Drop Privileges Alter	
postgres	postgres	SQL_ASCII	pg_default	3537 kB	Drop Privileges Alter	
regression	postgres	SQL_ASCII	pg_default	30 MB	Drop Privileges Alter	

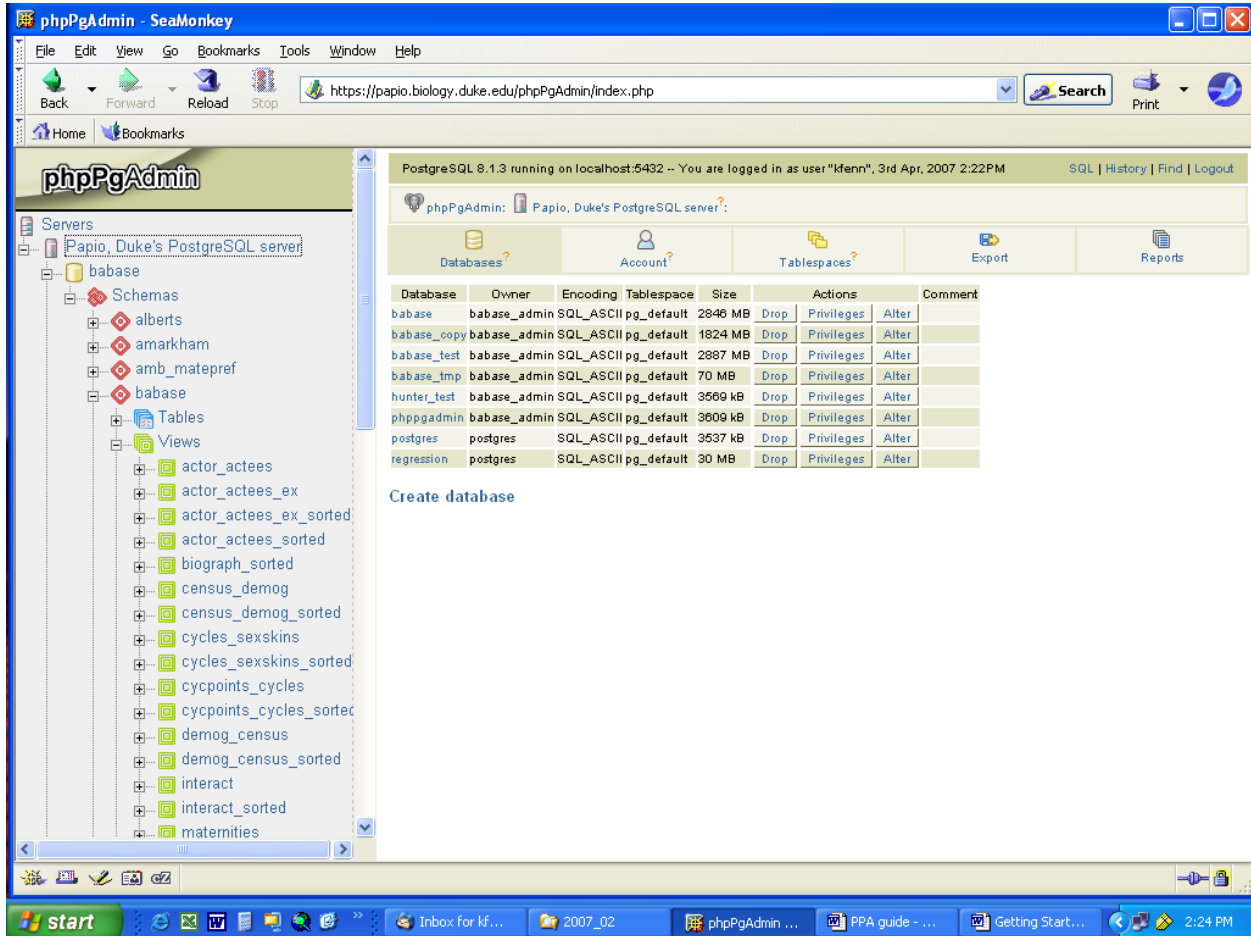
Now you see a directory of the contents of the **babase** schema. The first two icons are the ones that most users need to become familiar with, **Tables** and **Views**. Click on the **+** next to the **Tables** icon.



This reveals a directory of all the available data tables in **babase**. You can query any of these tables. Scroll down in the directory and click on the **+** next to the **Views** icon (not visible in this screenshot).

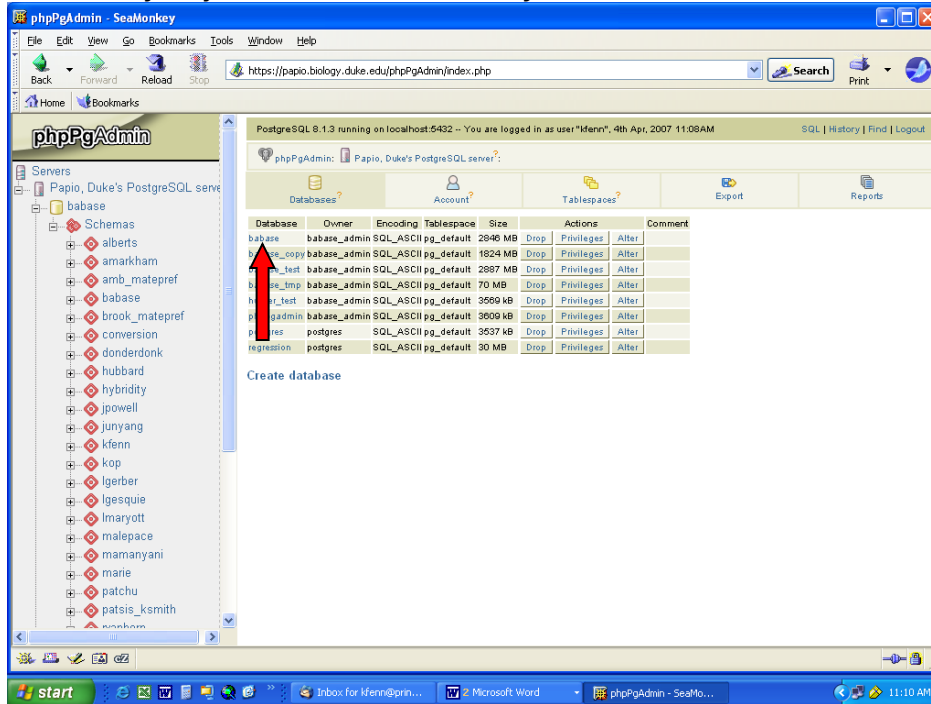


Views contains data from the tables that has already been linked together in commonly used queries. Views can be queried just like tables, often saving users many steps in linking tables. Get to know the Views well so that you don't waste time linking data that has already been linked. The **BaBase Pocket Reference** shows which data tables are linked in Views.

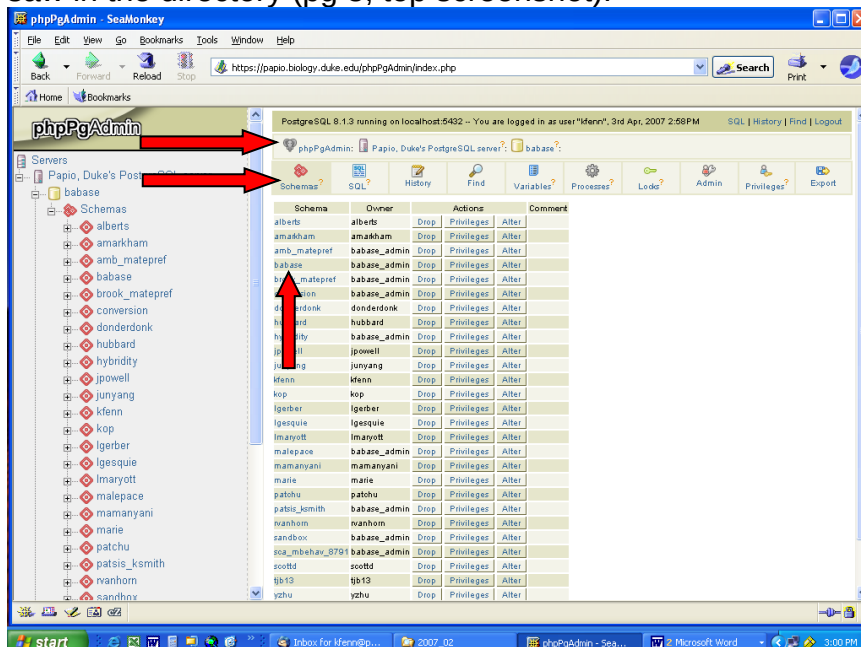


6. Browse the Database

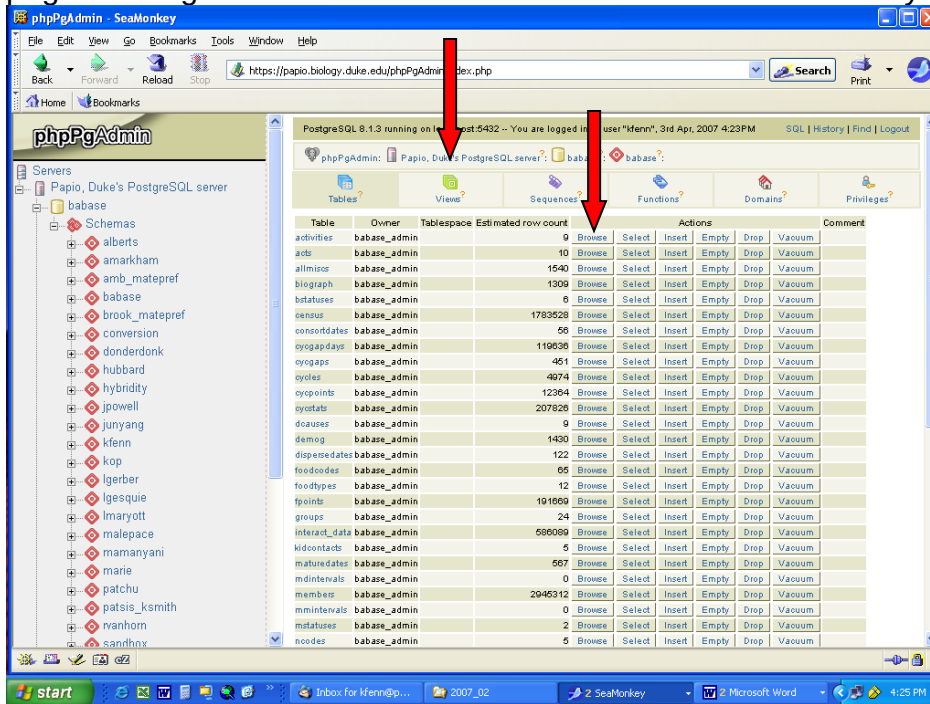
As stated above, you can use either the main screen or the directory tree to navigate and browse Babase. In the main screen, clicking on **babase** link will reveal all the schemas you just saw in the directory.



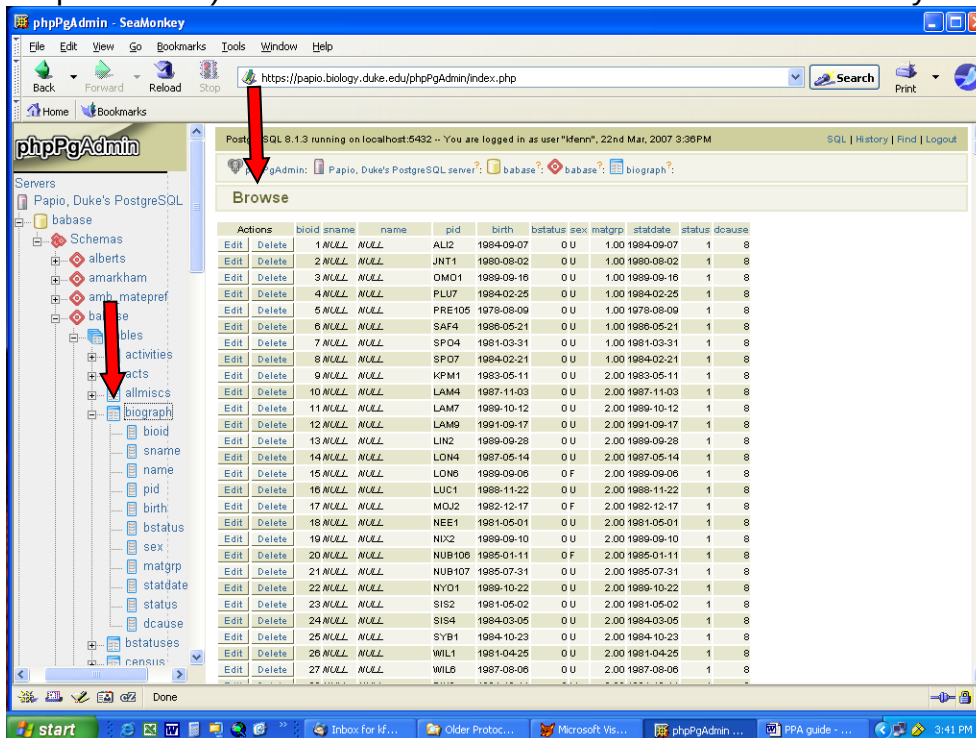
When the screen changes, note that the headers and tabs across the top of the main page indicate where you are within Papio (you are now viewing the schemas in the babase database). If you click on the **babase** link, it shows all the Babase tables you saw in the directory (pg 8, top screenshot).



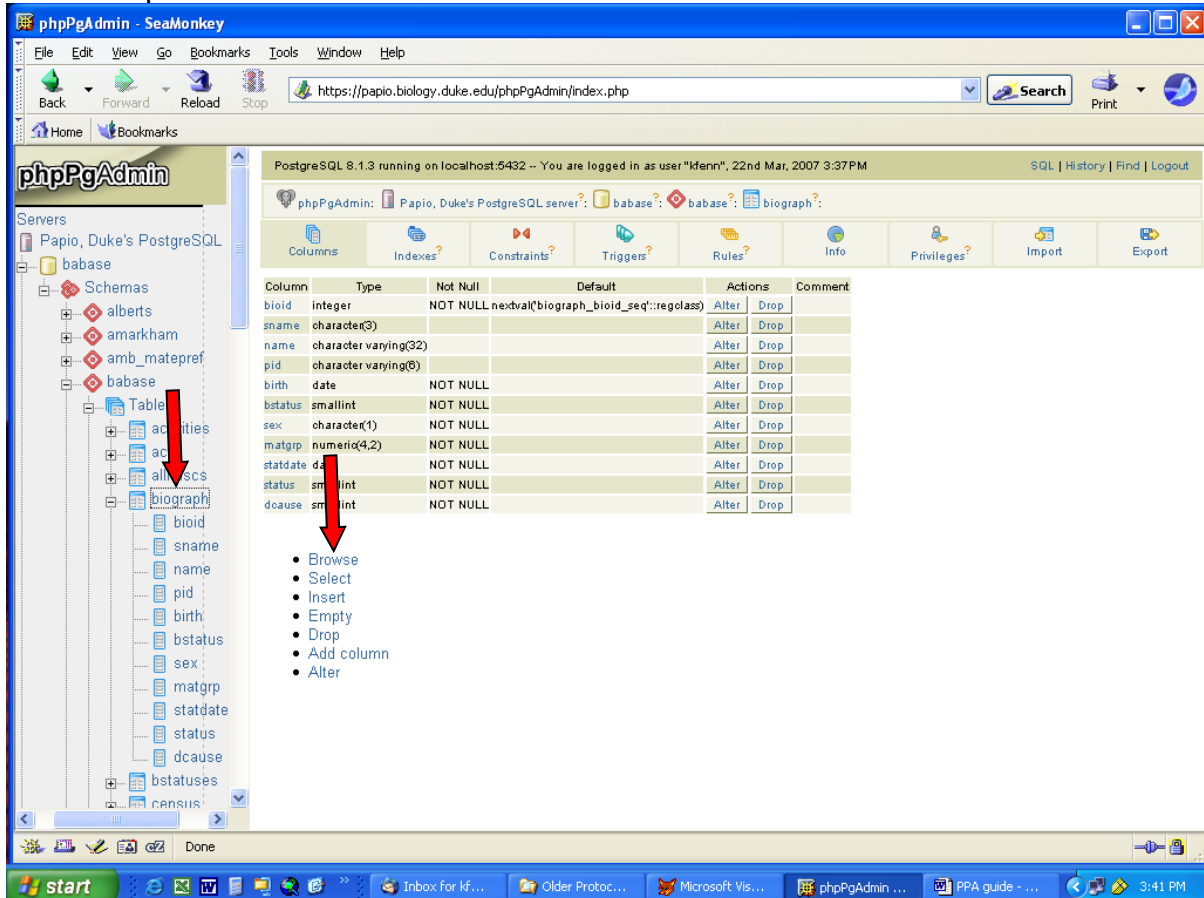
To browse a table using the main screen, simply hit the **Browse** button next to it to see all columns and rows. From here, you can also use the tabs across the top of the main page to navigate to the Views and browse them in the same way.



To browse Tables and Views using the directory on the left, navigate to the table or view you want and click on the **icon** next to a table name to display the entire table (Biograph is open below.) Note that the header in the main screen now says 'Browse'.

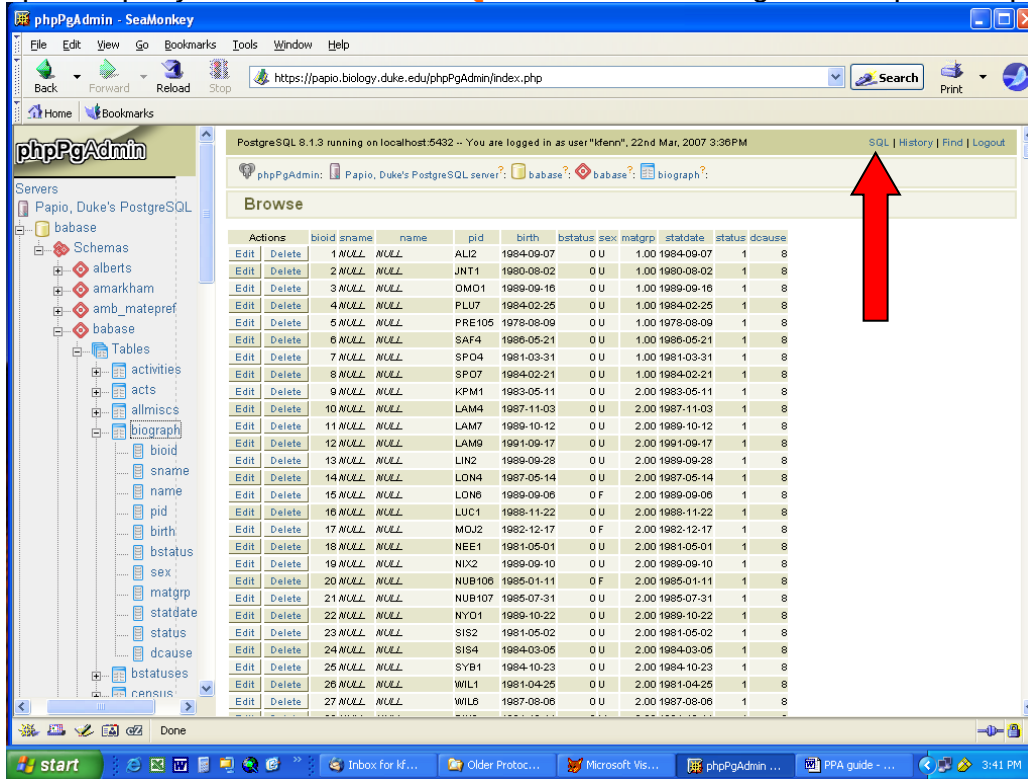


If you click on the table name itself in the directory, you get a properties menu for that table. (Biograph is open below.) This is useful if you need to know what data type is used in each column because certain mathematical functions only work with certain data types. From this window you can also hit the **Browse** button in the main page to view the complete data table.



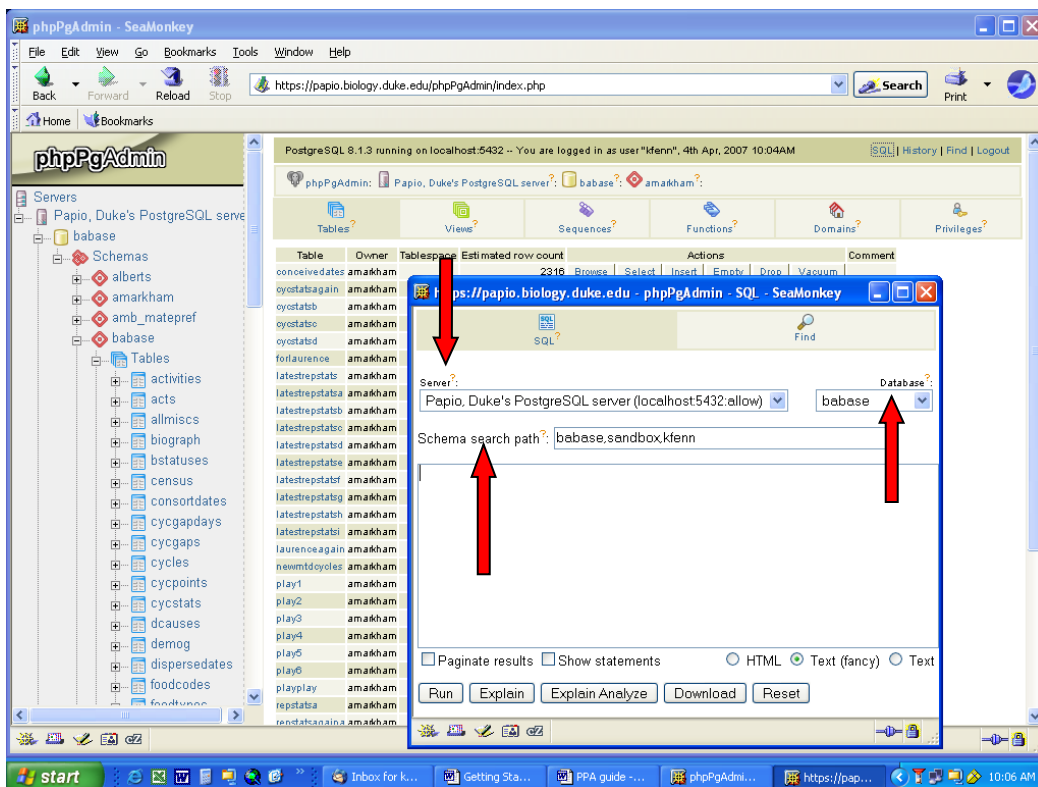
6. Query the database

To open a query window, click on **SQL** in the tan heading at the top of the page

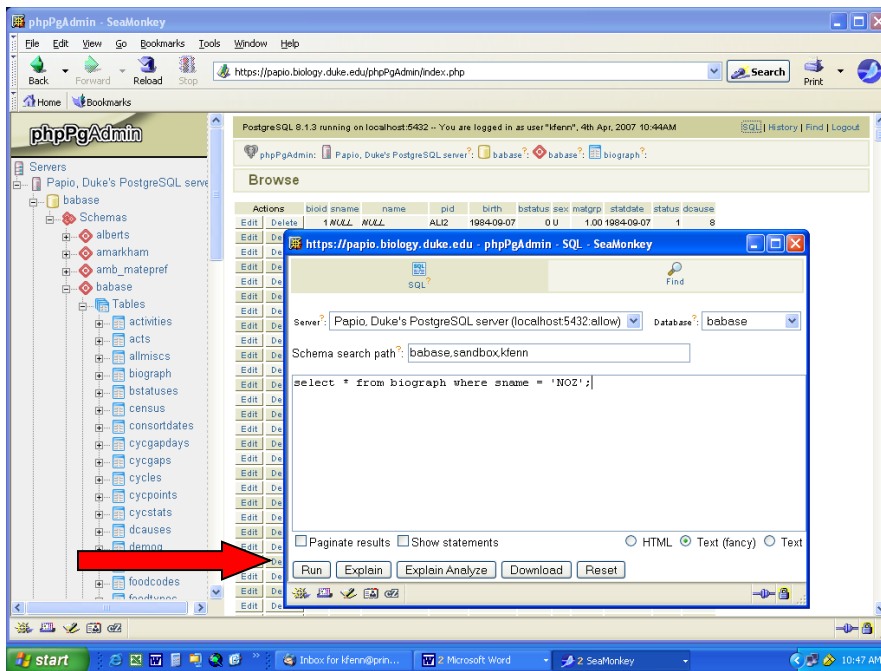


This will open a query window. Look carefully at the **Server**, **Database**, and **Schema search path** windows. They will default to the paths you had selected when you first open the SQL window. Every time you close and reopen this SQL window, these three navigational paths will be reset to reflect where you are in the directory. When doing queries, be particularly aware of the database you are using to make sure you are selecting the data you want.

You can click on these boxes to easily change the path while the SQL window is open. **Server** and **Databases** have drop-down menus, but you have to manually change the **Schema search path**. If you want to save data into your own schema, I find it easiest to close the SQL window, choose the location in the directory and then re-open the SQL window, allowing the program to set the correct path.

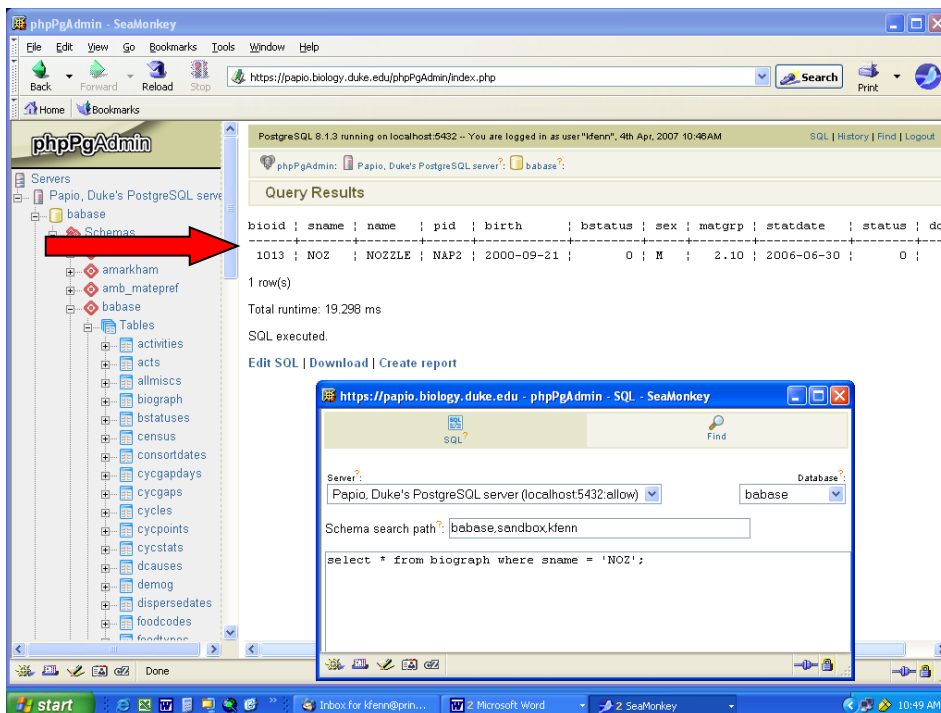


7. Type your query and hit the **run** button



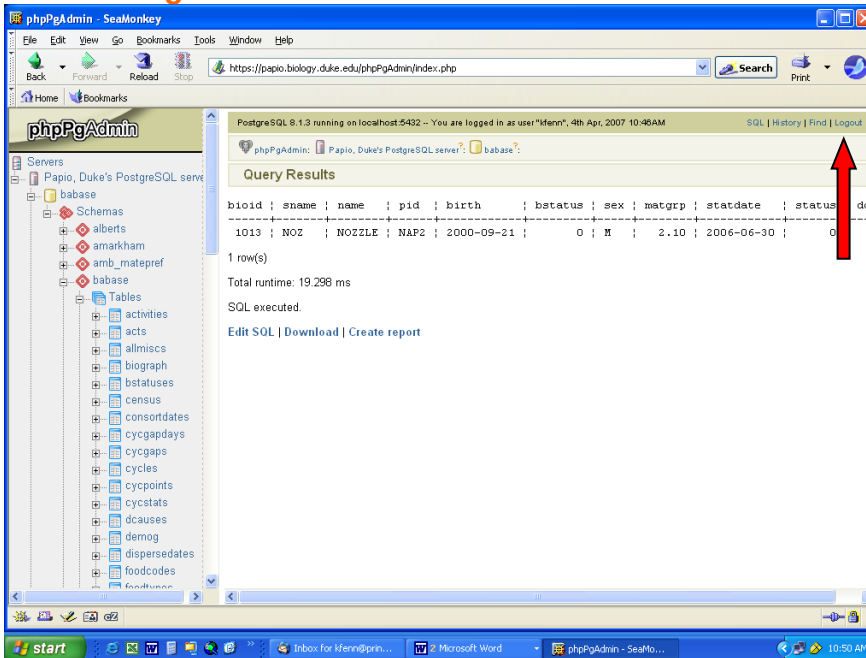
8. View query results

The results will display in the main window

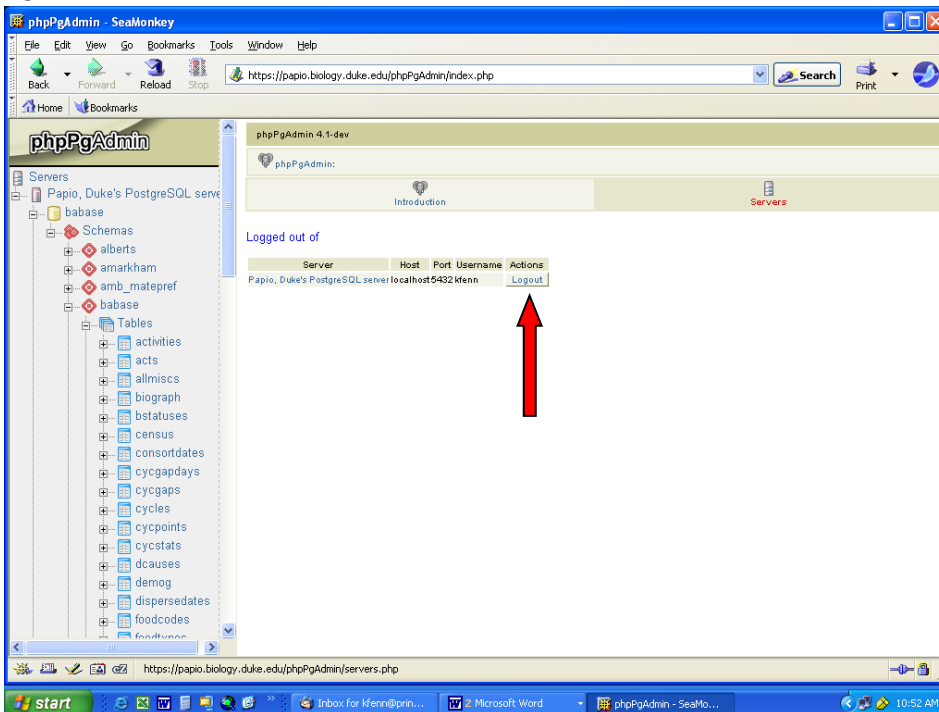


9. Logout

Click the **logout** button in the tan header



This takes you to the logout page where you click the **Logout** button next to the server name.



Learning SQL for Queries

You should now feel comfortable logging into and doing basic navigation and browsing in the online BaBase. If so, you are ready to learn the basics of SQL.

Please go through the **SQL for BaBase** document to learn some basic SQL and useful tips. This document will eventually be on the Babase Wiki as well.

Once you have outgrown the basics and are interested in more complex queries there is more SQL documentation on the BaBase Wiki under the **Babase Help** link. Here you will find the following information and links:

Documentation on the software Babase uses

- The [PostgreSQL](#) web site
- PostgreSQL version 8.1 [documentation](#)
- There are two complete on-line books on PostgreSQL. These include information on accessing the database using the psql Unix command.
 - [PostgreSQL: Introduction and Concepts](#)
 - [Practical PostgreSQL](#)
- The Babase phpPgAdmin interface contains little question marks which are links to documentation
- The [phpPgAdmin](#) web site
- The phpPgAdmin [documentation](#) is geared to the system's administrator but may contain some useful information