

# Enrollment Target Planning Workshop

## Excel Instructions for Projection Techniques

February 15th, 17th 2006

### Accessing Webpage and Sample Worksheet

Let's access the Enrollment Target Planning Workshop webpage.

1. Open Internet Explorer and enter in the following URL:

<http://www.imir.iupui.edu/enrollmentTargets/>

2. Click on *Sample Worksheet* to download the worksheet we will be using for this workshop.
3. A **File Download** dialog box pop-ups up. Click **Save** to save the file. Save the file to your **desktop**.
4. Double click on the Excel file **worksheet\_template.xls** located on your desktop. Excel loads and displays the worksheet we will be using today.

The worksheet includes tabs that we will use to show different techniques that could be used to project IUPUI enrollment. The tabs are named as below:

- GROWTH=Exponential
- TREND=Linear
- Annualized Percent Change
- Avg. Growth Rate

## **“GROWTH=Exponential”**

This projection method predicts enrollment that fits an exponential curve. The Excel formula/syntax is

**=GROWTH(known\_y's,known\_x's,new\_x's,const)**

where

known\_y's is the range of historical enrollment i.e. 1996 to 2005 headcount;

known\_x's is the range of historical year span i.e. 1996, 1997, ... , 2004, 2005;

new\_x's are the new year values for which you want GROWTH to return  
corresponding enrollment projections;

const is a constant value that we will omit for the purpose of this projection.

1. Click on the first tab ***“GROWTH=Exponential&TREND=Linear”***

We will use the first table to project enrollment using the GROWTH method.

2. We will now try to project the Graduate Degree Seeking students. Using the mouse, highlight the cells that you wish to project.

In this case, **highlight cells M14 to Q14**. (An array M14:Q14 is created).

3. Type, or use mouse, to enter the GROWTH array formula :

**=GROWTH(B14:K14,\$B\$12:\$K\$12,\$M\$12:\$Q\$12)**

4. Press **CTRL-SHIFT-ENTER** to tell Excel to fill in the projection values for the range of cells M14 to Q14.

## “TREND=Linear”

This projection method predicts enrollment that fits a linear trend. The Excel formula/syntax is

$$=TREND(\text{known\_y's},\text{known\_x's},\text{new\_x's},\text{const})$$

where

known\_y's is the range of historical enrollment i.e. 1996 to 2005 headcount;

known\_x's is the range of historical year span i.e. 1996, 1997, ... , 2004, 2005;

new\_x's are the new year values for which you want GROWTH to return corresponding enrollment projections.

const is a constant value that we will omit for the purpose of this projection.

1. Click on the first tab “*GROWTH=Exponential&TREND=Linear*”

We will use the second table to project enrollment using the TREND method.

2. We will now try to project the Graduate Degree Seeking students. Using the mouse, highlight the cells that you wish to project.

In this case, **highlight cells M14 to Q14**. (An array M14:Q14 is created).

3. Type, or use mouse, to enter the TREND array formula:

$$=TREND(B14:K14, \$B\$12:\$K\$12, \$M\$12:\$Q\$12)$$

4. Press **CTRL-SHIFT-ENTER** to tell Excel to fill in the projection values for the range of cells M14 to Q14.

### **Editing an array formula:**

The TREND and GROWTH syntax are array formulae. It is not possible to edit the formula by individually editing each cell. In the above TREND example we projected Graduate Degree Seeking students based on a 10 year trend. We will now edit the array formula so that we base the projection on a 5 year trend.

1. Again, highlight entire array cells M14 to Q14.
2. Type, or use mouse, to enter the TREND array formula:

**=TREND(G14:K14,\$G\$12:\$K\$12,\$M\$12:\$Q\$12)**

3. Press **CTRL-SHIFT-ENTER** to tell Excel to fill in the projection values for the range of cells M14 to Q14.

### **COPY and PASTE SPECIAL function:**

We have just learned that the output arrays can not be edited individually. In the event there is a need to “tweek” one of the outputs, we can use the COPY and PASTE SPECIAL functions in Excel to do so.

Once we have projected enrollment for Graduate Degree Seeking students based on a 5-year trend using the TREND array formula, let us “tweek” the enrollment.

1. Use mouse to highlight the entire array result: **M14 to Q14**
2. Click on **Edit** menu on the toolbar
3. Click on **Copy** to copy the array results
4. We will paste the copied cells in the same location where we copied them from. Click on **Edit** menu again, and then click **Paste Special**.  
The **Paste Special** menu pops up.
5. Since we only want to paste the values and not the formula, click on the radio button for **Values**. Then click **OK**.

This will paste the values of the array results back in cells **M14:Q14**. Now you have the flexibility to edit/”tweek” the projection values for the array as you please.

## Annualized Percent Change

This projection method predicts enrollment using an annualized percent change over a period of time. The Excel tab has tables that have already been set up to compute the annualized percent change for either a 5 year or a 10 year time period. We will use these computed values to project corresponding enrollment. The syntax for the projection is as follows:

$$=(1 + \text{Annualized Percent Change}) * \text{Headcount for prior year}$$

1. Click on the tab “*Annualized Percent Change*”
2. We will now try to project the Graduate Degree Seeking students for 2006 using an annualized 5 year percent change.

Using the mouse, **click on cell M10**.

3. Type, or use mouse, to enter the following formula in cell M10:

$$=(1+\$T\$10)*K10$$

4. Press **ENTER** to get the projection for 2006 Graduate Degree Seeking students.

## Average Growth Rate

This projection method predicts enrollment using an average growth rate over a period of time. The Excel tab has tables that have already been set up to compute the average growth rate for either a 5 year or a 9 year time period. We will use these computed values to project corresponding enrollment. The syntax for the projection is as follows:

$$=(1 + \text{Average Growth Rate}) * \text{Headcount for prior year}$$

1. Click on the tab “*Avg. Growth Rate*”
2. We will now try to project the Graduate Degree Seeking students for 2006 using an average 5-year growth rate.

Using the mouse, **click on cell M10**.

3. Type, or use mouse, to enter the following formula in cell M10:

$$=(1+\$T\$11)*K10$$

4. Press **ENTER** to get the projection for 2006 Graduate Degree Seeking students.