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Student Printing Credits Make UNT Greener

By **Dr. Philip Baczewski**, Senior Director of Academic Computing and User Services and Deputy Chief Information Officer for University Information Technology

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Classroom and Testing Desktop Services Rolls Out New Tools for Faculty to Help Their Students Achieve Success

By **Dr. Elizabeth Hinkle-Turner**, Director - Academic Computing Technical Services

Classroom and Testing Desktop Services (CTDS), a part of UIT's Academic Computing and User Services (ACUS) is in the process

By the Numbers

Total visits to the studenttechtour site: August 2014 — June 2015

Note: The highest amount of traffic occurs at "back to school" in the Fall Semester when you have the most incoming students.

it.unt.edu/studenttechtour

August 2014	18,495
September 2014	5,283
October 2014	4,634
November 2014	4,460
December 2014	4.189
January 2015	714
February 2015	947
March 2015	595
April 2015	793
May 2015	1,189
June 2015	1,443

of completing a variety of projects this summer which will result in greater education technology opportunities for faculty in the fall. Some of these are new initiatives while others are significant upgrades to existing services.

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EDUCAUSE Annual Conference Update

By [Claudia Lynch](#), *Benchmarks Online* Guest Editor

The EDUCAUSE Annual conference is scheduled for October 27–30, 2015 in Indianapolis, Indiana, and Online. Check out the key dates and the lineup of "General Session Thought Leaders."

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Today's Cartoon

Click on the link above for an information age laugh.

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In Fall 2014, the University of North Texas instituted a new method of managing student printing in Student Computer labs. The institution of the printing credit system enabled student printing at campus locations other than in Student Computer Labs and allowed students to print documents directly from their personal computing devices. It also resulted in the printing of fewer pages of output by UNT students, saving paper, energy, and the volume of recycling or trash generated.

The funding for student printing is drawn from the student technology fee that all students pay. Printing is just one of the service offerings in Student Computer Labs. In Fall of 2014, students were provided a credit to print 400 pages (double-sided output) with the option of a 200-page extension. Students who wished to print beyond the provided credits could log into http://printing.unt.edu/ and buy additional credits that are expended at the cost of $.05 per double-sided output page or $.03 per single-sided page. In setting the credit amounts, it was anticipated that, based on previous data, over 90% of students' needs would be accommodated within the allocated credit amount. In reviewing printing data from the Fall semester, we see:

- 25,711 unique students used the printing service

- 514 students (2%) used their entire printing credit allocation

- 3,766,392 total pages were printed in Student Computing Labs

In Fall of 2013, students printed a total of 6,850,742 pages in Student Computer Labs. This means that labs saw a **savings of 3,084,350 printed pages** for the Fall semester after implementation of the printing credits.

Credit system simplified.

After seeing how students responded to the new credit system in the Fall semester, Lab Managers were able to simplify the credit system and provide blanket allocation of 800 pages (double-sided output) to all students. This eliminated the need for students to request print extensions and was intended to further increase the number of students whose needs would be accommodated by the allocated credit amount. For the Spring 2015 semester, we can see that use of the printing service was similar to the Fall:

- 23,823 unique students used the printing service

- 340 students (1.4%) used their entire printing credit allocation

- 3,864,179 total pages were printed in Student Computing Labs

In comparison to the Spring semester of 2014 when students printed a total of 6,501,315 pages, we saw a **savings of 2,637,136 pages** in Spring of 2015. The total printing saved for both semesters this academic year has been **5,721,486 pages** to date, representing a printing activity decrease of about 50% after implementation of the printing credit system.

In Conclusion.

It appears that changing the perception of printing as an unlimited resource to one of a finite commodity, student behavior has been to conserve this resource. The printing service remains available for when its truly required for students' course of study, but lab managers have noticed fewer recycle pages and printing duplication and waste has been reduced. As UNT gains more experience with this printing service model, managers are committed to making any changes or improvements necessary to meet student academic needs.

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A project to expand the UNT wireless network, begun in January of 2014 by University Information Technology (UIT) and the UNT System IT Shared Services division, was officially completed on June 16, 2015. This project enhanced WiFi networking services in 28 major academic buildings on the UNT Denton campuses and added over 1400 wireless base stations to the campus network. In addition, outdoor WiFi service was installed to serve areas between a number of the main campus core buildings.

Completion of this project represents a multi-year and multi-million dollar investment in the networking infrastructure at UNT. However, improvement of the wireless and wired network services on campus is an ongoing effort and additional service can be added as needs are determined. Also, as equipment ages it will be updated in order to maintain a high-quality of network service and support. To find out how to access the UNT wireless network, visit http://www.unt.edu/helpdesk/wireless/ or contact the UIT Helpdesk at 940-565-2324 or helpdesk@unt.edu.

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Classroom and Testing Desktop Services Rolls Out New Tools for Faculty to Help Their Students Achieve Success

By **Dr. Elizabeth Hinkle-Turner**, Director - Academic Computing Technical Services

Classroom and Testing Desktop Services (CTDS), a part of UIT's Academic Computing and User Services (ACUS) is in the process of completing a variety of projects this summer which will result in greater education technology opportunities for faculty in the fall. Some of these are new initiatives while others are significant upgrades to existing services.

New Computers in the Discovery Park Classrooms

CTDS staff (Technical Manager Ray Banks and student employees: Amber Evetts, Reese Gallagher, and Mia Hobbs) are the developers and supporters of Discovery Park classrooms B140 (48 PC's), B 142 (48 PC's), D212 (24 PC's) and D215 (40 iMacs). This summer the staff has upgraded all of the computers in these classrooms whose machines dated back to 2009. B140, B142 and D212 are now outfitted with Dell Optiplex 3030 AIO machines (Intel Core i5 3 GHz w/Intel HD4600 Graphics, 8 GB RAM, 128 GB SSD, Windows7 64-bit OS). These all-in-one machines allow for more desktop flexibility and greater desktop space. In fact the computers in B140 and B142 are now attached to swing-arm stands which allow for a completely clear desktop and leg area and which can be easily pushed to the side for greater visibility of the whiteboards in the rooms. These machines were purchased in direct response to faculty desires for greater visibility to the front of the room and much more powerful machines to run higher-resource-utilizing applications. This project was announced in this article in May.

Holes were drilled in the existing classroom furniture to accomodate the swing-arm computer stands in DP B140 and B142

Discovery Park Classroom D215 had all of its iMacs upgraded and 5 more machines were added to the space. These new iMacs have the following configuration:

- 21.5 inch screens

- 2.9 GHz quad-core Intel Core i5 (Turbo Boost up to 3.6 GHz)

- 8 GB RAM

- NVIDIA GeForce video cards

- 256 GB flash storage

Discovery Park Room D215 has all new iMacs and now has 40 of them

Faculty members using these rooms at Discovery Park are encouraged to contact Ray Banks or Elizabeth Hinkle-Turner about the installation of specialty software that might be needed for their classes in the fall. For a history of the development of these classrooms see this article announcing the construction of the rooms in 2009.

The Mobile Testing Center Grows Up

In January 2014, the Sage Hall Computer-Based Testing Center received a generous gift from the Honors College of a cart of 20 netbooks that CTDS then configured for mobile online testing services. The details of this project are found in this *Benchmarks* article.

This unit has been thoroughly tested and utilized by various departments on campus and now will receive a companion cart signifying a major upgrade in capabilities and service. The second Mobile Testing Center will be a cart of 24 Dell Laptops (Dell Latitude 3150 BTX) and should be ready to go by mid-fall semester at the very latest. Faculty are strongly urged to contact Ray Banks and Elizabeth Hinkle-Turner about mobile online testing possibilities in their classrooms and should be on the look-out for an announcement about this project's completion. The Mobile Testing Unit can allow faculty to have their students do online work and take exams in any classroom - **it turns every classroom into a *computer* classroom!**

Sage Hall Room 154 Transformed into a Flexible Workshop Space for Students, Faculty, and Staff

Due to high demand for the computers in the Sage Hall Computer-Based Testing Center for other activities such as online instruction, training and computer-based workshops, CTDS is transforming Sage Hall Room 154 (next door to the Writing Center) into a flexible workshop space to accomodate such events. The room which is currently under

construction and should be ready to go in just a few months will have many flexible and collaborative features for maximum effectiveness. 30 computers (dual-boot iMacs for both Apple and Windows operating systems) will be housed on tables with wheels that can be moved about into rows and also more team-oriented configurations. There will be a teacher's presentation workstation which will project onto two 65-inch flat panel displays on roll-around carts that can have limited movement throughout the room. Also featured will be a printing station and a "tutoring corner" for more one-on-one tutoring sessions.

This room will be reservable via the [Testing Center website](#) just like the third floor online testing rooms are. Stay tuned for more information as the room is completed.

Yes, The Sage Hall Computer-Based Testing Center Will Now Have Exam Monitors!

Many, many faculty have expressed the desire for exam monitors (testing proctors) to be assistant eyes and ears for testing security in the Sage Hall Computer-Based Testing Center. In fact several have not been able to use the Center yet because they desperately needed such additional security. Well, faculty prayers have been answered and beginning in the Fall, all users of the Center will be able to request up to 10 "exam monitors" (test proctors) to help with online testing security during their exams. These exam monitors will also be available for online computing events in the Discovery Park Computer Classrooms mentioned above as well. They can assist in the new Sage Hall 154 facility and also in any Mobile Testing Unit events.

The mission of the new UNT Exam Monitor Program is to assist in the security, efficacy, and integrity of online exam sessions in the Sage Hall Computer-Based Testing Center, the Discovery Park Computer Classrooms and all other ACUS CTDS-related classroom and exam events. An exam monitor is an approved person that administers an exam to UNT students and agrees to fulfill the proctor responsibilities required by the UNT Computer-Based Testing Center and its related facilities and events. The proctor will verify students' identities by checking photo ID's and will ensure that academic integrity guidelines during exams are followed (e.g. no notes, textbooks, outside assistance etc.) The monitor does not fulfill the exam duties of the course instructor; he or she only serves as an assistant for ensuring academic integrity and security compliance during exams.

Monitors assist instructors with the proctoring of hourly and final exams in the Sage Hall Computer-Based Testing Center and its related testing facilities Monday - Saturday during fall, spring, and summer semesters. This position is open for UNT graduate students only. Monitors will be available to work on an as-needed basis between 7:00 am - 10:00 pm. Also, if faculty wish to schedule drop-in testing for their students they can be assured that monitors will be at the Center during all drop-in hours for security and proctoring.

Job openings for these Exam Monitor positions will be posted in the Eagle Network at the Career Center during the week of August 1 and applications will be accepted through Friday, August 14. Interviews will be conducted during the week of August 17 with at least 10 exam monitors hired by the beginning of the fall semester. These positions are only open to currently enrolled, full-time or part-time graduate students at the UNT Denton Campus who do not already have an assistantship from the university. These are not tuition or fee-waiver eligible positions but they will provide a financial opportunity for several of our graduate students. Faculty members who know of qualified graduate students should encourage them to apply and more information about the positions can be provided by contacting Elizabeth Hinkle-Turner who is supervising the program.

Another enhanced security project in the Testing Center is the installation of new security cameras for greater and more effective video coverage.

A Very Special Summer for Faculty and Student Success!

These four significant upgrades and projects completed during the summer and early fall will greatly increase UIT ACUS's commitment and service to faculty and student success. We encourage everyone to contact us to find out more in preparation for fall and spring classes and to be on the alert for more information and announcements. In the meantime, while the CTDS "worker bees" are buzzing away, everyone else stay cool!

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By **Dr. Philip Baczewski**, Senior Director of Academic Computing and User Services and Deputy Chief Information Officer for University Information Technology

Who's Watching?

Ever have that feeling that someone's watching you, even though you can't see anyone around? News reports lately have given me that feeling every time I access the Internet. Whether it's via a desktop browser or a cell phone, it seems that more and more there's an expectation that even with the best of security, someone's bound to be spying on you and actively stealing your information.

First, there's the report of a huge data breach at the United States Office of Personnel Management. It's so big of a story that it has its own Wikipedia entry already. It's estimated that 21.5 million records were stolen from OPM data systems including personal information, such as social security numbers, for government employees in all sectors as well as information on people who had undergone background checks while applying of a government position. One article even suggests that it may take as long as 40 years to recover from this breach.

You would think that these kinds of activities are not the norm on the Internet, but rather the result of a few criminal or rogue state actors, but then comes the news of an organization called "Hacking Team" that sells network intrusion and surveillance capabilities to governments and law enforcement agencies around the world. We wouldn't have necessarily found this out if Hacking Team itself hadn't been hacked.

Paranoia strikes deep ...

Of course, our own U.S. government also is adding to this feeling of being watched. The National Security Agency began a program of domestic spying shortly after the attacks of Sept. 11, 2001. A federal court has ruled that the NSA's collection of phone records is illegal. And a recently passed revision of the U.S. "Patriot Act" has removed the NSA's authority to engage in bulk collection of telephone records. But I still can't shake that feeling that I'm being watched.

Given the climate of insecurity surrounding our online presence, you might think that technologies like encryption that help guard our privacy would be promoted by those whose job it is to help us stay safe and secure. The newest smart phones offer default encryption that even keep police from accessing information stored on those devices. But the head of the U.S. FBI has recently urged that companies install "back doors" to such encryption so that law enforcement agencies (with a warrant) could still access encrypted information. Of course the problem with a back door, is that you never know who might kick it in.

Finally, there's the story of a device called the ProxyHam that was to be discussed at DEF CON, a conference attended by computer security experts and "hackers" with an interest in computer and network architecture. ProxyHam was purportedly a device that allowed anonymous network access to avoid the kinds of surveillance peddled by companies like Hacker Team. But the talk about it was mysteriously cancelled and no apparent regulatory, legal, or intellectual property issues were barriers to the existence of the device. What was going to be a purchasable product has suddenly been withdrawn and suppressed. That's not a good sign for those wanting to be anonymous in the online world.

There's an old quote that goes something like, "I wouldn't be paranoid, if so may people weren't out to get me." (Perhaps this originates with Joseph Heller.) It's bad enough that hackers are stealing information from businesses like Home Depot and Target, but you'd think that our government's efforts would be to help prevent such breaches and keep our information safe, rather than spying on us and advocating for ways to bypass security measures. That feeling just won't go away.

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Online Security Training

The deadline is approaching for **full-time** employees to complete online security training. As noted in a recent *InHouse* article, the deadline is **August 31**.

To take the training, click on the link below and login using your EUID and Password. The training only takes about 30 minutes to complete and can be taken over multiple sessions. Each video includes one assessment question at the end. Once all courses are completed, employees may print a completion certificate and earn one Continuing Professional Education (CPE) credit.

https://sso.securingthehuman.org/untsystem

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Help Desk FYI

By Jacob Flores, UIT Support Services Manager

UNT: Secure   wireless   network   connection

Are you looking for a secure wireless internet connection? Are you tired of having to log into the **EagleNet** wireless every day? You can use the **UNT** wireless network and automatically connect whenever your device comes in range of the network. The UNT wireless network offers two main benefits over EagleNet. First, the UNT network has increased security by inherently encrypting your network traffic. Second, it avoids going through a log-in portal to access the wireless network.

Instructions for connecting provided by ITSS Datacomm:

- Windows 7 Configuration for Secure Wireless Networks

- Windows 8 Configuration for Secure Wireless Networks

- iPhone / iPod / iPad Configuration for Secure Wireless Networks

- Mac Configuration for Secure Wireless Networks

 Visiting from another educational institution and want to use the secure **Eduroam** wireless network at UNT? Check out the UNT System Eduroam information page for network inforamtion, device setup instructions, and the acceptable use policy:
https://itss.untsystem.edu/services/wireless-networking/eduroam

Get some fresh air and take advantage of the wireless coverage available outdoors!
http://it.unt.edu/benchmarks/issues/2015/07/unt-wifi-expansion-project-completed

For more information on the available wireless network options at UNT, please visit
https://itss.untsystem.edu/services/wireless-networking/untsystem-wireless-networking

As always, if you have any questions or trouble, feel free to contact the UIT Helpdesk.

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R_stats

Research and Statistical Support
University of North Texas

A quick demonstration of the importance of graphing your polite nod of thanks to F. J. Anscombe.

Link to the last RSS article here: You may be (stuck) here! And here are some potential reasons why. -- *Ed.*

By **Dr. Jon Starkweather**, Research and Statistical Support Consultant Team

This month's article presents a rather interesting reminder of the importance of graphing data. The article also serves as an important reminder that model specification (i.e. a model's form; e.g. *linear model, quadratic model, cubic model,* etc.) should not be chosen without thought. As an example, consider the linear model; which is so popular it is often the *default* model form for many researchers. However, a linear model may not always be the most appropriate model (see: Starkweather, 2010).

Many data analysts (me included) often place more emphasis on the precision of textual / numeric output rather than more subjectively interpreted graphical output. This behavior is not recommended because; graphs can often convey rather glaringly the nuances of the data which are not readily conveyed in textual or numeric output. As a reminder to me and others, this article demonstrates a truly ingenious way of illustrating the fact that graphs are *equally* important with computation when working with data. I have occasionally re-learned this lesson over the years and was truly astonished recently when I came across *Anscombe's Quartet* (Anscombe, 1973). I still find it hard to believe I had not been made aware of this brilliant quartet of data earlier. However, now that I am aware of it, I felt compelled to pass it along. Anscombe's Quartet consists of four simple data sets, each with 11 cases and each with 2 variables:

	x1	y1	x2	y2	x3	y3	x4	y4	
1	10	8.04	10	9.14	10	7.46	8	6.58	
2	8	6.95	8	8.14	8	6.77	8	5.76	
3	13	7.58	13	8.74	13	12.74	8	7.71	
4	9	8.81	9	8.77	9	7.11	8	8.84	
5	11	8.33	11	9.26	11	7.81	8	8.47	**Anscombe's**
6	14	9.96	14	8.1	14	8.84	8	7.04	**Quartet**

7	6	7.24	6	6.13	6	6.08	8	5.25
8	4	4.26	4	3.1	4	5.39	19	12.5
9	12	10.84	12	9.13	12	8.15	8	5.56
10	7	4.82	7	7.26	7	6.42	8	7.91
11	5	5.68	5	4.74	5	5.73	8	6.89

Are these data pairs the *same*?

First, we can import the data into R using the function (and file path) listed below.

a.df <- read.table("http://www.unt.edu/rss/class/Jon/Benchmarks/Anscombe_df.txt",

  header = TRUE, dec = ".", sep = ",")

Next, we take a look at some descriptive statistics, such as the mean, variance, and standard deviation of each variable.

apply(a.df, 2, mean)

   x1   y1   x2   y2   x3   y3   x4   y4

9.0000 7.5009 9.0000 7.5009 9.0000 7.5000 9.0000 7.5009

apply(a.df, 2, var)

    x1   y1   x2   y2   x3   y3   x4   y4

11.0000 4.1273 11.0000 4.1276 11.0000 4.1226 11.0000 4.1232

apply(a.df, 2, sd)

   x1   y1   x2   y2   x3   y3   x4   y4

3.3166 2.0316 3.3166 2.0317 3.3167 2.0304 3.3166 2.0306

Clearly, each pair is virtually identical with respect to the mean ($M = 9.00$), variance ($V = 11.00$), and standard deviation ($SD = 3.12$) of the *x* variables; and the mean ($M = 7.50$), variance ($V = 4.13$), and standard deviation ($SD = 2.03$) of the *y* variables. Next, we take a look at the correlations of each pair.

cor(a.df[,1:2])

        x1   y1

x1 1.0000000 0.8164205

y1 0.8164205 1.0000000

cor(a.df[,3:4])

        x2   y2

x2 1.0000000 0.8162365

y2 0.8162365 1.0000000

cor(a.df[,5:6])

        x3   y3

x3 1.0000000 0.8162867

y3 0.8162867 1.0000000

cor(a.df[,7:8])

        x4   y4

x4 1.0000000 0.8165214

y4 0.8165214 1.0000000

Again, we see that each pair of variables displays the same correlation coefficient ($r = 0.816$). Next, as one might

expect, we see below the linear regression intercepts and coefficients are the same as well.

```
summary(lm(y1 ~ x1, a.df))$coef
```

```
            Estimate Std. Error  t value    Pr(>|t|)

(Intercept) 3.0000909  1.1247468 2.667348 0.025734051

x1          0.5000909  0.1179055 4.241455 0.002169629
```

```
summary(lm(y2 ~ x2, a.df))$coef
```

```
            Estimate Std. Error  t value    Pr(>|t|)

(Intercept) 3.000909  1.1253024 2.666758 0.025758941

x2          0.500000  0.1179637 4.238590 0.002178816
```

```
summary(lm(y3 ~ x3, a.df))$coef
```

```
            Estimate Std. Error  t value    Pr(>|t|)

(Intercept) 3.0024545  1.1244812 2.670080 0.025619109

x3          0.4997273  0.1178777 4.239372 0.002176305
```

```
summary(lm(y4 ~ x4, a.df))$coef
```

```
            Estimate Std. Error  t value    Pr(>|t|)

(Intercept) 3.0017273  1.1239211 2.670763 0.025590425

x4          0.4999091  0.1178189 4.243028 0.002164602
```

So, all four pairs of data result in the same linear regression equation:

$$y = 3.00 + 0.50 * x$$

Are these data pairs the *same*?

Based on the above textual / numeric computations and output we might think these four pairs of data are *the same*. However, we quickly see that they are not at all the same once we do a simple scatterplot of each pair.

```
par(mfrow = c(2,2))

plot(a.df[,1], a.df[,2], ylim = c(2,15), xlim = c(2,20), pch = 16)

abline(summary(lm(y1 ~ x1, a.df))$coef[,1], col = "red")

plot(a.df[,3], a.df[,4], ylim = c(2,15), xlim = c(2,20), pch = 16)

abline(summary(lm(y2 ~ x2, a.df))$coef[,1], col = "red")

plot(a.df[,5], a.df[,6], ylim = c(2,15), xlim = c(2,20), pch = 16)

abline(summary(lm(y3 ~ x3, a.df))$coef[,1], col = "red")

plot(a.df[,7], a.df[,8], ylim = c(2,15), xlim = c(2,20), pch = 16)

abline(summary(lm(y4 ~ x4, a.df))$coef[,1], col = "red")
```
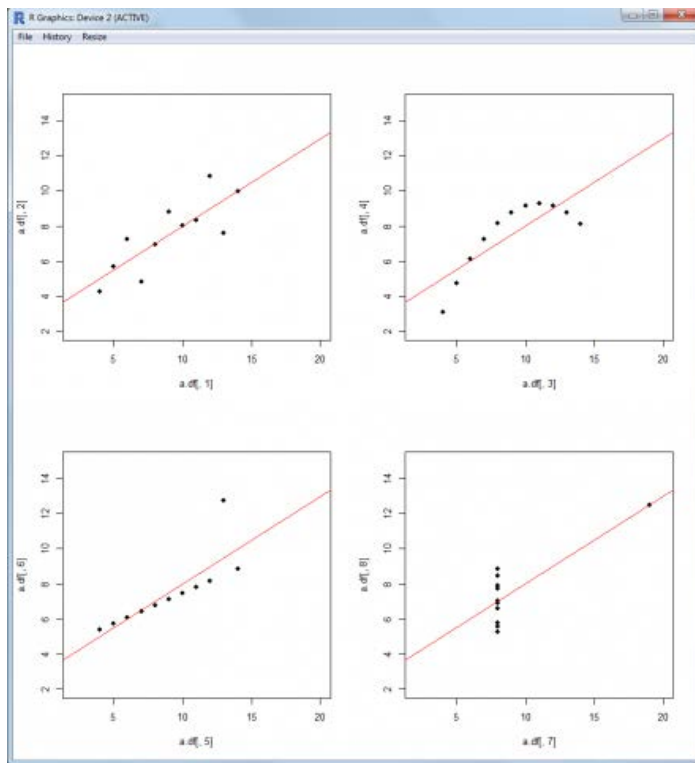
So, let this be a reminder to us all – graphing data *really* matters. Graphing data is as important as computation when doing initial data inspection. A version of the R script used in this article can be found on the RSS Do-It-Yourself Introduction to R website in the Module 12 section.

Until next time; *always look on the bright side of life…*

References / Resources

Anscombe, F. J. (1973). Graphs in statistical analysis. *The American Statistician, 27*(1), 17 – 21. Available at: http://www.unt.edu/rss/class/Jon/MiscDocs/1973_Anscombe_theQuartet.pdf

Starkweather, J. (2010). Model Specification Error…Are you straight, or do you have curves? Benchmarks: *RSS Matters,* April 2010. Available at: http://www.unt.edu/rss/class/Jon/Benchmarks/Model%20Specification%20Error_JSD_Apr2010.pdf

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Training

By Claudia Lynch, *Benchmarks Online* Editor

Do you need training on widely used computer programs including those used in statistical analysis? If so, this monthly *Benchmarks Online* column is for you.

Statistical   Analysis

Instructor-led courses are offered only by special request. Please contact an RSS member if you are interested in taking such a class or wish to have someone offer a class for your students. **SAS**, **SPSS** and **Introduction to R** are **offered online**. Make sure and check out the recent **RSS Matters** article *Statistical Resources (update: version 3).*.

Special classes can always be arranged with the RSS staff. Also, you can ***always*** contact the RSS staff for one-on-one consultation. **Please read the FAQ before requesting an appointment though.**

The Learning Center also offers statistical workshops, in a classroom setting and online. Other resources, especially for graduate students, are also available.

Especially for Faculty and Staff Members

In addition to the online statistical courses, which are available to students, faculty, and staff, staff and faculty members can take courses offered through the Business Service Center, and the Center for Learning Enhancement, Assessment, and Redesign (CLEAR). Additionally, the Center for Achievement and Lifelong Learning (CALL) offers a variety of courses, usually for a small fee.

The Business Service Center has recently centralized their business process training for things like payroll, time and labor, and travel.

NEW!   Check out the Office 365 training resources that are now available online.

UNT   System   Training   Resources

Visit my.unt.edu and login to access tutorials.

UNTS Training

University of North Texas System (UNTS) Training

These tutorials provide a place to learn and practice key processes in a simulated environment. First time users should view the User Productivity Kit (UPK) player introduction before proceeding.

All Faculty & Staff

Supervisors & Administrative Staff

Additional Training Resources

Microsoft Virtual Academy

Who is eligible to participate in MVA?

- Anybody interested in growing their career can be a part of MVA.

- To sign up for MVA , on the MVA home page, MVA courses and events are free, but you need to identify yourself using a Microsoft account in order to sign up for MVA and create your MVA profile.

- There is no minimum level of technical expertise required.

Microsoft E-Learning

NEW!	***Updated instructions for accessing Microsoft E-Learning are below.***

As part of an offering from Microsoft, you are eligible to access E-Learning courses online at Microsoft.com. These courses are meant to help you keep up-to-date with the latest major software releases.

Please note that some product and language versions may not be available at the time you activate your courses. For up-to-date information on the availability of E-Learning courses, please visit http://microsoft.com/licensing.

To gain initial access to the Microsoft® E-Learning courses, please follow the steps below:

1. Go to: https://onlinelearning.microsoft.com/subscriptionactivation/.

2. Input your multiuse access code: Contact your Network Manager for the code *(The code is case-sensitive. Be sure to include the dashes and do not enter any spaces.)*

3. You are prompted to sign in using a valid Windows Live™ ID. (This is the user name and password you use to access the site each time you log on.) If you already have a profile on microsoft.com, use that Windows Live ID.

4. You will receive an e-mail confirming your registration.

5. From the confirmation e-mail, click the link to complete the e-mail confirmation and activate your courses.

6. You are prompted to sign in using a valid Windows Live ID, once again.

7. A confirmation page appears indicating that the access code has been accepted (or you may receive an error message if the code was not accepted).

8. Click the *My Learning* link to see list of available courses.

9. Click a course title to launch the offering. You have 12 months from the time of launch to finish that course.

Follow the instructions below to access E-learning until you arrive on the "UNT System authenticated service Page."

To access your course at any time, please follow these steps:

1. Go to: https://onlinelearning.microsoft.com/.

2. Click the "Sign In" button in the upper right corner of the page.

3. Sign in to Windows Live using your Windows Live ID and password.

4. Click the My Learning Catalog link on the left side of the page under Customer Login.

5. Begin your E-Learning course.

If you have any questions regarding your access code, you may e-mail or phone our support center. To view a list of support phone numbers, please visit https://www.microsoft.com/licensing/servicecenter/ and click the **Support/Feedback** link.

If you experience any problems with your E-Learning training, please contact the regional support center in your region at http://www.microsoft.com/learning/support/worldsites.mspx.

We trust you will enjoy this benefit and look forward to your participation. Please note that the access code we have received from Microsoft can accommodate a limited number of users from our organization. Do not share the code with unauthorized users. This is not permitted under our license agreement with Microsoft.

Microsoft   E-books

Click on the link and access the largest collection of FREE Microsoft eBooks ever, including: Windows 8.1, Windows 8, Windows 7, Office 2013, Office 365, Office 2010, SharePoint 2013, Dynamics CRM, PowerShell, Exchange Server, Lync 2013, System Center, Azure, Cloud, SQL Server, and much more!
NOTE: How to enable 'Download All' for Free Microsoft eBooks and other tips

Central   Web   Support

Central Web Support provides "web hosting and support to appropriate campus entities free of charge."

CLEAR

CLEAR offers courses especially for Faculty Members. *CLEAR training includes:*

- Blackboard

- Turnitin

- Turning Point

- Assessment

- Teaching Effectiveness

- Respondus

Please check out CLEAR's training and event calendar at http://clear.unt.edu/calendar for the latest information regarding Blackboard, CLEAR's initiatives, and on campus instructional events.

Further information can be found here.

FREE Online Learning Consortium Workshops

The University of North Texas is a premium member of the Online Learning Consortium (formerly the Sloan Consortium) College Pass. To request FREE ENROLLMENT in an Online Learning Consortium workshop, please contact Amber Bryant with the name and date of the workshop selected. *Please click on the link below to see the available 2015 workshops.*

- Online Consortium 2015 Workshops

CLEAR also provides free access through group subscriptions for ALL Denton UNT faculty and staff to **Magna Commons, 20 Minute Mentor Commons, Distance Education Report, Online Classroom,** and **The Teaching Professor** from **Magna Publications.**

Ed2go

Ed2go are courses that are offered, for a fee, to UNT faculty, staff and students as well as the general public. The CALL website states under the Professional Development heading:

> *Make UNT the first place you turn for career training and professional development. UNT's Online Minicourses, provided in conjunction with Ed2go, are downloadable 12-lesson modules that are designed to meet your needs for skill development. Lessons are instructor-led and course participants and instructor communicate through a course discussion board.*
>
> *Most courses are $89 and UNT faculty, staff and students may receive a $10 discount. Contact Tami Russell (940.565.3353) for more information.*

For additional information, visit the **Ed2go blog** here. You can subscribe to news from their blog via a link on the right hand side of the page.

Information Security Awareness

Information Security Awareness -- The ITSS Information Security team offers Information Security Awareness training to all UNT faculty and staff.

- It is a policy requirement that ALL staff take an information security course at least once a year.

- See the Virus Information Page and the Information Security Handbook -- for Faculty, Staff and Students for further information.

UNT HR Training and Development

Typically, Talent Management, sends monthly emails to all employees with a list of current classes, many available by webcast. (Note: Few, if any classes are offered during the winter break, spring break holiday periods for all UNT System campuses.) Learn more about classes here.

If you have questions or specific needs, contact talentmanagement@untsystem.edu or call 855-878-7650 to be directed to a Talent Management staff member.

Alternate Forms of Training

Many of the General Access Labs around campus have tutorials installed on their computers. See http://computerlabs.unt.edu/ for a list of labs and their locations. The 24 Commons in Willis Library, for example, has a list of Tutorials and Software Support. The Library Instructional Unit also offers workshops and training, including "tech skills" training. Visit their websites for more information: http://www.library.unt.edu/library-instruction.

Info~Tech, UNT's IT Research Partner

Info~Tech is UNT's IT research partner. UNT System, UNT, UNT Health Science Center and UNT Dallas employees have access to Info~Tech research at: www.infotech.unt.edu (click on the UNT System name to login). Your standard EUID and Password gains you access to the Info~Tech system. Please take a moment to read their terms and conditions by clicking through the agreement when you set up your profile the first time you log in.

State of Texas Department of Information Resources

Another possible source of training for staff and, perhaps, faculty members is the Texas Department of Information Resources. Search their website for the specific training you are interested in.

New Horizons Computer Learning Centers

New Horizons is a DIR vendor, which means that state agencies, like UNT, get special pricing for their services negotiated at the State level (click here for more information about DIR vendors). New Horizons offers courses at their own facilities in Dallas and Fort Worth, but will arrange for onsite training as well. They have a "Tips and Tricks" page that has helpful information. You can also join their mailing list to receive their monthly newsletter, event invitations and specials.

EDUCAUSE Live! Webinars

EDUCAUSE Live! is a series of **free**, hour-long interactive webinars on critical information technology topics in higher education. You can register for upcoming webinars and you can find recordings of **all past webinars** in the *EDUCAUSE Live!*archives.

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Staff Activities

Staff activities for UIT are reported in this column.

Transitions

New Employees:

- **Samuel Wiggins**, UIT Helpdesk Consultant (part-time).

- **Savannah Vela**, Data Management Student Assistant (part-time).

Changes:

- **Yumia Hobbs,** UIT Helpdesk Consultant (part-time), moved from the Helpdesk to Classroom Testing and Desktop Services (part-time).

No longer working in UIT:

- **Claudia Lynch**, Documentation Services Manager & Benchmarks Online Editor, retired May 31.

- **Lorie Foster**, Data Management Student Assistant (part-time). Graduated!

- **Daisy Rodriguez**, UIT Student Assistant (part-time). Graduated!

- **Sherma'n Wilson**, Classroom Testing and Desktop Services (part-time).

- **Rui Jing**, ACUS/Adaptive Lab consultant (part-time).

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EDUCAUSE Annual Conference Update

By **Claudia Lynch**, *Benchmarks Online* Guest Editor

The EDUCAUSE Annual conference is scheduled for October 27–30, 2015 in Indianapolis, Indiana, and Online. Check out the key dates and the lineup of "General Session Thought Leaders."

EDUCAUSE ANNUAL CONFERENCE 2015
October 27-30, 2015 • Indianapolis, Indiana, and Online

Key Dates

- Registration/Housing Opens: **May 2015**
- Daily Agenda Live: **July 2015**
- Early-Bird Discount Deadlines: **September 29** (Indianapolis) **October 15** (Virtual)
- Conference Dates: **October 27-30, 2015**

WEDNESDAY	THURSDAY	FRIDAY
Daniel Pink	**Andrew McAfee**	**Emily Pilloton**
Author and Host/Co-Executive Producer of National Geographic's *Crowd Control*	Co-Founder MIT Initiative on the Digital Economy, MIT Sloan School of Management, and Author	Humanitarian Design Activist, Author of *Design Revolution*, and Creator of Project H

Above is this year's annual conference lineup of general session thought leaders you'll get to hear from.

Also, there are always *EDUCAUSE Live!* Webinars

EDUCAUSE Live! is a series of **free**, hour-long interactive webinars on critical information technology topics in higher education. You can register for upcoming webinars and you can find recordings of **all past webinars** in the *EDUCAUSE Live!* archives.

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Today's Cartoon

From "Today's Cartoon by Randy Glasbergen", posted with special permission.
For many more cartoons, please visit www.glasbergen.com.

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