

Benchmarks

A green light to greatness.



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Everything Old is New Again: **EIS Mobile Site Goes Live**

By [Robert Jones](#), AIS Tools & User Services Director

As a student on campus in the early 1980's, registering for classes required a trip to the NT Coliseum, collecting a deck of color coded computer punch cards, and praying that a stiff wind didn't come along to blow them out of your hand and whisk away your chances of getting the Biology lab you needed for graduation.

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[Realignment of Functions in CITC](#)



By [Dr. Elizabeth Hinkle-Turner](#), Assistant Director - Academic Computing and User Services

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Free and open to **ALL** UNT faculty, graduate teaching fellows and assistants! Lunch is provided!

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By the Numbers

Eaglenet, UNT's wireless network:

- Can support over 8,000 simultaneous connections
- 292 wireless access points on campus
- Over 3,000 simultaneous users each day
- Over 30,000 unique logins last year (students, faculty, staff and guests)
- Over 70,000 unique devices (two different devices per person)
- Expect 90,000 unique devices this year
- When [BLB](#) and the [Stadium](#) open later this year there will be approximately 500 wireless access points on campus

Security Seminar



Interested in Information Security? Register for this **free** seminar coming up on April 27; continental breakfast provided.

[Read more](#)  [BOOKMARK](#) 

Campus Subscription to Higher Education Newsletters



By [Jane Himmel](#), Associate Director, CLEAR

The University of North Texas has purchased a Group Online Subscription allowing campus members free access to Online Classroom & The Teaching Professor from Magna Publications. These electronic newsletters provide the information faculty, deans, chairs, and other academic decision-makers use for effective leadership within their colleges or departments and fulfill their institution's primary missions of teaching and scholarship.

[Read more](#)  [BOOKMARK](#) 

Surplusing Old Computers?



By [Deke Isaac](#), Manager, Microcomputer Maintenance Shop

Surplusing old computers? Remember [MMS](#) before you surplus those old machines!

[Read more](#)  [BOOKMARK](#) 

TODAY'S CARTOON

Click on the link above for an information age laugh.



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On March the 21st, a new service was introduced. As a result, students using a mobile phone can now browse to the **myUNT Mobile** and **myHSC Mobile** sites and be directed to content specifically designed to provide student services tailored to a mobile device. The new service (coupled with the release of a mobile version of the [UNT main campus site](#)) lays the groundwork to bring the registration process back to the telephone. This time, rather than being tethered to a wall, the phone is wireless and the keypad is replaced with a touch-sensitive screen. In a day when mobile phones are becoming more and more an extension of arms and hands, this new service will become vital in the never-ending attempt to meet the ever-changing needs of our student-body.

Please see the [Helpdesk FYI article](#) in this issue for **detailed instructions** on using the new mobile sites.



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Realignment of Functions in CITC

By [Dr. Elizabeth Hinkle-Turner](#), Assistant Director - Academic Computing and User Services

Years ago, I used to enjoy watching a show called *Changing Rooms* on BBC America. This show was the inspiration for the popular TLC show *Trading Spaces* and I thought of these shows as I read of the realignment of some of the departments and areas of the CITC by John Hooper, Acting Vice President for Information Technology and Chief Information Officer. However, *unlike* these shows which often ended with hideously designed alterations of perfectly fine and tasteful rooms, these changes to the CITC are a forward-thinking move taking into consideration what Hooper describes as "the direction of IT technologies, shared services, similarities in operational approaches, recent IT study organizational structure recommendations and synergies between parts of the organization."

Mr. Hooper lists the following organizational changes to the CITC structure that will be put in place immediately:

- **The Imaging Team** ([imaging.unt.edu](#)) and **Distributed Learning Support** ([www.dls.unt.edu](#)) are now located in the AIS Tools and User Services organization and report to Robert Jones, leader of this division. The Imaging Team supports ImageNow on campus and assists in all aspects of scanning and digital document retention. Distributed Learning Support provides hardware and server infrastructure support for UNT's extensive distributed learning program and services.
- **The Enterprise Messaging and Directory Service Group** ([emds.unt.edu](#)) supports all UNT email services, unified messaging, and chat and instant messaging resources. As VOIP and other technologies blur the lines between traditional phone technologies with digital messaging, the work of this group increasingly resides in the realm of Communication Services and as a result EMDS will move over to this division and report to division director Joe Adamo. The manager of EMDS is Jason Myre.
- Additionally, **Sharepoint Services** ([untranet.unt.edu](#)) and **Central Web Support** ([cws.unt.edu](#)) will report to Myre. Sharepoint provides a valuable collaboration tool for areas throughout the system and CWS continues to manage the system web presence and infrastructure. EMDS will be renamed Enterprise Collaboration Services and the UNT community can look forward to its further work to make communication methods and technologies more seamlessly integrated.
- The directorship of **Enterprise Systems Technical Services**, recently vacated by Tom McElwee, will remain vacant at this time. The remaining area under this division, CITC Infrastructure and Technical Services (ITS), is managed by Craig Terrell and Terrell will report directly to John Hooper. **ITS** ([citic.unt.edu/its/](#)) is responsible for virtualization, storage, backups and enterprise servers.

For members of the UNT community, these changes will not be noticeable in terms of quality and extent of service. This realignment does not eliminate any personnel or functions. For CITC personnel, the changes allow for greater collaborative opportunities and consolidation and efficacy of effort. UNT faculty, staff, and students should continue to receive technical assistance and service by contacting the UNT Helpdesk ([helpdesk.unt.edu](#)) and any further questions or comments about these CITC internal realignments can be directed there.



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There's still time to register for the 2011 University Forum on Teaching & Learning

A [CLEAR](#) Announcement

Free and open to **ALL** UNT faculty, graduate teaching fellows and assistants! Lunch is provided!

2011 University Forum on Teaching & Learning

April 29, 2011

9:00 a.m. – 3:30 p.m.

Silver Eagle Suite, University Union third level

[Register Today!](#)

UNT's University Forum on Teaching & Learning (UFTL) is a one-day annual event that enables faculty, graduate teaching fellows, and staff involved in supporting teaching and learning to share ideas and practices that focus on instructional strategies designed to motivate and engage learners, promote critical thinking skills, and better prepare students for life and work in the 21st century.

This year's guest speaker is [Curtis J. Bonk](#), Professor of Instructional Systems Technology at Indiana University and author of the *Handbook of Blended Learning: Global Perspectives, Local Designs* (2006) and *The World is Open: How Web Technology is Revolutionizing Education* (2009). Dr. Bonk will deliver both the keynote address and a master class scheduled for the afternoon. In his keynote address "The Flat World has Swung Open: How Web Technology is Revolutionizing Education" Dr. Bonk will focus on ten technology trends that are "educational openers," opening possibilities for sharing course materials, resources, and teaching ideas.

Dr. Bonk's master class "Stretching the Edges of Technology-Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning" was designed to showcase a variety of ways instructors can effectively blend technology into their instruction. Whether you simply want to dip your toes in the water or dive in, this workshop will have something for you!

For more information and to register, visit:

<http://clear.unt.edu/go/uftl2011>

The University Forum on Teaching & Learning is sponsored by the [Center for Learning Enhancement, Assessment, and Redesign \(CLEAR\)](#) and is part of the Teaching Excellence Speaker Series (TESS).





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Register Now for the Upcoming Security Seminar

Interested in Information Security? Register for this **free** seminar coming up on April 27; continental breakfast provided.

Center for Decision and Information Technologies Seminar
2010-2011 Seminar Series on Information Security and Privacy

“Security in Emerging Technologies”

8:30 am – noon, Wednesday, April 27, 2011
(Registration starts at 8:00 am with continental breakfast)
Gateway Center, University of North Texas, Denton, TX

Contact Lucian Visinescu, C-DIT Office Manager, at c-dit@unt.edu or (940) 565-3128 to register.

Register online at <http://www.cob.unt.edu/rsvp/rsvp.php?/135>

When it comes to information security, universities are considered a frontier where new problems and new solutions are constantly engaged in ongoing battles. In this last installment of the 2010-2011 Seminar Series on Information Security and Privacy, we will hear from two speakers from the University of North Texas to learn what the university is doing to deal with various emerging threats.



Dr. John Windsor, Professor of information systems at the Department of Information Technology and Decision Sciences (ITDS) will report on what UNT has been doing with IT security from instructional and research perspectives.



Mr. Allan Anderson, Information Security Analyst for the **Computing & Information Technology Center (CITC)** at UNT will discuss various emerging threats and how UNT tries to mitigate these threats.



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Network Connection

By [Dr. Phillip Baczewski](#), Director of Academic Computing and User Services

It's Just a Hobby

April 1, marked the [35th anniversary](#) of the founding of [Apple Computer](#), now simply known as Apple, inc. Unlike the hugely profitable and society changing company it has been lately, Apple had very humble beginnings. Two guys named Steve in a garage were trying to share their hobby with others and maybe make a few bucks in the process. Their [Apple 1](#) computer ("Byte into an Apple") featured a fully assembled circuit board and made assembly of a personal computing machine more accessible than it ever had been before.

Like information technology? Thank a hobbyist.

It seems that many technologies, before being industrialized and commercialized, exist in the realm of the hobbyist. After all, [Orville and Wilbur](#) were just a couple of bicycle mechanics who dabbled in heavier than air flight before it was an industry. Photography spent many years in the hands of specialists and hobbyists before [George Eastman](#) managed to put a camera in the hands of regular people.

In 1950s and 1960s my Dad dabbled in photography, with the devices used to expose and develop black and white film and prints littering the fringes of my early childhood. In the 1960s a new hobby developed in the form of electronics projects and ham radio, and many hours were spent watching the curl of solder smoke rise up from the guts of a [Heathkit](#) ham receiver. (My Dad never had time to learn Morse code when we were young. He did get his ham license after he had retired and had plenty of time to practice the code, after which that requirement was [eliminated](#) from the prerequisites for a ham license.) I guess it's not surprising that in my early 20's, I could be found with a soldering iron and wire wrap kit assembling a cassette tape storage interface for my Vic 20 computer.

The availability of computers like the [Apple I](#) and its successors spawned a whole crop of software hobbyists. Computer hardware as a hobby gave way to the industrial production of the Apple II, the IBM PC, Radio Shack TRS-80, Commodore 64, and many other such devices accessible to the average U.S. household. These devices allowed the industrious hobbyist to write their own software and in the 1980s and 1990s the [shareware](#) phenomenon yielded an explosion of personal software for home computers. Today's smart phone app proliferation seems to be an echo of that earlier time.

You could say that a number of Internet services we take for granted may have been generated by what passes as a hobbyist in the Internet era. While the commercialization of the Internet that led to the burst of the [dot-com bubble](#) was driven largely by commercial concerns, some major players like [Ebay](#) started as someone's personal project. Because college students had Internet access long before many in the general public, it's not surprising that Yahoo and Google, both started as the ideas of students at Stanford University. Like hobbyists, these students had access to a supportive community and the technology to implement ideas that grew from a hobby scale endeavor, to major corporations.

3D Printing?

If you want to get in on the ground floor of the next disruptive technology you can pursue as a hobbyist, that would seem to be 3D printing. [Ars Technica](#) recently ran an excellent [article](#) which points out that 3D printing may be the focus of the next major fight over copyright and intellectual property. 3D printing is a deposition process which can build a shape up based on a computerized pattern, with successive layers of material forming a complete object. There is even a 3D printer you can build for yourself. The [RepRrap](#), which stands for "replicating rapid prototyper", is [available](#) as a set of parts or even as a fully-assembled kit (sound familiar?).

[Thingiverse](#) is a site where people share their 3D designs for rendering with a 3D printing system. If these are original

designs, then all seems to be innocent. However, what if you were able to create a 3D design for a gear in your garage door opener based on the owner's manual and printed it yourself instead of buying it from the manufacturer? What if you share that design with other owners of the same garage door opener. Have you violated copyright or patent law? Would you know if you had?

If enough of us become 3D printing hobbyists and can produce simple things we would ordinarily have to buy, how long will it be before the lawsuits break out as they have over online music downloads? If you could get a 3D printer at your nearest electronics store, and reproduce objects from a photograph, how would that change your life? We now take 2D printing for granted, but the ability to create printer-quality graphics and send them to a laser printer was a big [part](#) of the success of the Macintosh computer (made by Apple.)

3D printing is only a hobby now, but someday we all may have a [replicator](#) in our home. Just as 35 years ago a couple of guys named Steve started what would eventually become a computing and media "empire", in a garage somewhere today, there may be the start of the next generation's life changing technology. It makes that soldering iron seem a little cooler now, doesn't it?



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UNT To Go

There's a new mobile website "that keeps the university at your fingertips no matter where you go," according to the [announcement](#) published late last month on the UNT homepage. The rollout of **UNT To Go** coincides with the release of **myUNTMobile**, highlighted in this month's [Campus Computing News](#) and [Helpdesk FYI](#) articles.

UNT To Go, the UNT homepage announcement goes on to state, "is designed for modern smart phones such as iPhone, Android and BlackBerry, and will soon also support Windows phones. Its functions and features are the result of **feedback from students** who described what makes a mobile site most useful to them."

Current site features include:

- people and department search features
- UNT news and events
- access to my.unt
- interactive campus maps
- Mean Green news and events
- information about how to apply to UNT
- resources for alumni
- a UNT social media directory
- information about volunteer opportunities

To visit UNT To Go, use your mobile device to **browse to m.unt.edu**. Bookmark the site and add it to your homepage so you can easily get to it later.





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The UNT logo is a circular emblem with a grid pattern. The letters "UNT" are prominently displayed in the center in a bold, white, sans-serif font. The background of the emblem is a gradient of green, matching the overall theme of the page.

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Helpdesk FYI

By [Jonathan "Mac" Edwards](#), CITC Helpdesk Manager

myUNT Mobile

Now you can access [my.unt.edu](#) anywhere thanks to a new mobile version of the website. With March 21st release of the mobile site, in this article we will look at some of the Features and navigation of the site.

Features

- Search For Classes
- View your Classes
- View your Bill
- View myUNT Messages

What you *won't find*, just yet.

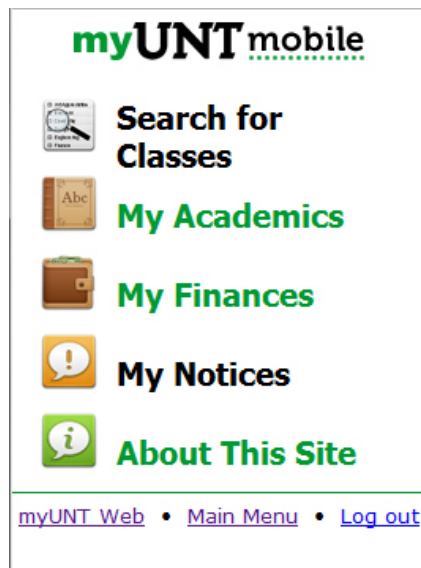
- Add/Drop Classes
- Services for applicants, faculty, and staff
- Bill Pay

Home Screen

When going to [my.unt.edu](#) on your mobile device you should automatically be directed to the mobile version of the site. If for some reason you are not, and wish to be, type **m.unt.edu**. You will be directed to the mobile [www.unt.edu](#) site, from there choose the myUNT link.

You should be prompted to log-in using your normal EUID and Password.

Once logged in you will be greeted with the Mobile homescreen with links for Search For Classes, My Academics, My Finances, and My Notices.



Search for Classes

Get a jump on registration and search for your classes on your phone!

- Click **Search for Classes**.
- Choose your College: either **UNT** or **HSC**.
- Select Academic Career: either Graduate, IELI, or Undergraduate.
- Select the Term.
- Select **Find out Subject Code** if you are unsure of the proper subject code for the class you wish to take. Generally the subject code will look something like ACCT (accounting).
- You will be taken to the Subject Codes page. Choose the first letter of the Subject you wish to take and click on the appropriate Subject Code.
- You will be returned to the Class Search Page where the Subject Code should now be filled in. Click Search to find available courses.
- You will be taken to the **Available Courses** page where you can click on individual courses to find section numbers, class time and location, Instructor information, and Dates.
- Click **Return to Class Search** to search for other courses.



Class Search

Select another term

Don't know the Subject Code? Click the button to look it up:

Find Out Subject Code

Or enter a required Subject Code and Subject Number:

Leave Subject Number empty and click Search to view list of all courses for that Subject Code.

Subject Code*:

Subject Number:

Search

My Academics

Never forget what time your class starts, and easily show off your 4.0.

View Class Schedule


- Click View Class Schedule
- You will see a list of your current class Schedule. If you click on the **section number** for a class you will be provided more details. You will also see a **Textbook** link. Clicking on this will redirect you to the UNT Book Store Website with information on Required Course Materials.
- From the main Class Schedule screen you can choose **Select Another Term** to view future class schedules.

View My Grades

- Here you can find your most recently posted Grades, this will generally be your last term completed. To view grades from other terms choose **Select Another Term**



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 [View My Grades](#)

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My Finances

Find out how much you owe while on the go!

View Bill

- The **My Bill** screen will immediately show how much is owed, and what charges are currently due.
- To view your Bill Summary for a specific term select the date under the **Term** column.
- The **Summary for Term** page will display Charge, Payment Financial Aid, and Anticipated Aid Activity, as well as the Term Balance. Choose **Return to My Bill** to return to the My Bill screen.

View Financial Aid

- Select the **Aid Year** to view Financial Aid details for that Academic year.
- For each item you will see the Title (ex. Fed Direct Stafford Unsub Loan), Category, Status, Career, and Amount Offered and Accepted.
- If an the item was Accepted you can click on the Title for more details which include Dusbursment Date, Award Amount, Fees, and Net Amount.



My Notices

Never miss an important message or deadline

My Messages- Here you will find important Messages (such as financial aid information) that you would normally find in my.unt.edu.

My Holds - Here you will find a list of potential holds. Click on each item for details and Instructions.

My To Do List - View a list of important items on your To Do List.



About This Site

Here you can find information and announcements as it relates to myUNT mobile.

Troubleshooting

The myUNT mobile site is working wonderfully, but with the vast number of browsers and mobile devices problems may arise.

- Some Mobile Browsers issue a Security Warning/Certificate Error when attempting to navigate to the mobile site. If you receive this warning accept the certificate.
- Some Mobile Browsers are not navigating to the mobile site. First be sure your mobile browser has **Mobile View** enabled. Generally you can find this in your browsers settings. Second, you can manually access the

mobile site by navigating to m.unt.edu, and selecting myUNT.

- Some Browsers are showing an error page with an **Application Requires Cookies** message. Below this message there should be an option to **Go to myUNT**. Clicking this link should take you to the log-in screen
- Some Browsers are showing an error page with a **Your session has expired.** message. Close the browser and re-enter the web address.
- Some Desktop browsers are being directed to the mobile site. If this is happening to you please contact the CITC Helpdesk via email at helpdesk@unt.edu. Please use an alternative browser, in the meantime, as a workaround.



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IRC News

Minutes provided by Christine Valenzuela Recording Secretary*

The IRC -- unofficially now known as the INFORMATION TECHNOLOGY COUNCIL (ITC) -- is currently undergoing a reorganization, see the May 20, 2008 [minutes](#) for more information.**>

No IRC/ITC minutes were available for publication this month.

*For a list of IRC Regular and Ex-officio Members click [here](#) (last updated 12/12/08). Warren Burggren is now the Chair.

**DCSMT Minutes can be found [here](#).



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RSS Matters

Research and Statistical Support

University of North Texas

Matching across two groups to isolate treatment effects.

Link to the last RSS article here: [Bayes Factors for t tests and one way Analysis of Variance: in R -- Ed.](#)

By [Dr. Jon Starkweather](#) Research and Statistical Support Consultant

This article will, hopefully, be the first installment of several to discuss the related procedures used to control or remove the influence of *confounder variables*. Here, we define confounder variables as those which have relationships with the primary variables of interest (e.g. moderation, mediation, suppression, etc.). Confounder variables are often identified by the research as being important, but not being of primary interest to the study. Confounder variables are also sometimes called nuisance variables or covariates. Commonly, demographic variables or individual differences (e.g. age, gender, ethnicity, income, etc.) are considered confounders when they are not the primary variables of interest because they so often influence other variables. For example, age may be a meaningful predictor in a linear model with salary as the outcome; while age may be a confounder variable in a model with years of education predicting salary (clearly there is likely to be a meaningful relationship between age and salary). Matching and balancing are virtually the same; for instance, *matching* cases of the treatment condition with those from the control condition achieves the *balance* one would expect of a truly random sample being truly randomly assigned to the conditions. Clearly then, *matching* can be used when the design is quasi-experimental; meaning random sampling and / or random assignment are lacking. Practical constraints often lead to this type of design and therefore, the use of matching should be frequently considered. However, matching can also be used when random sampling and random assignment have been carried out, to improve or insure balance among the data.

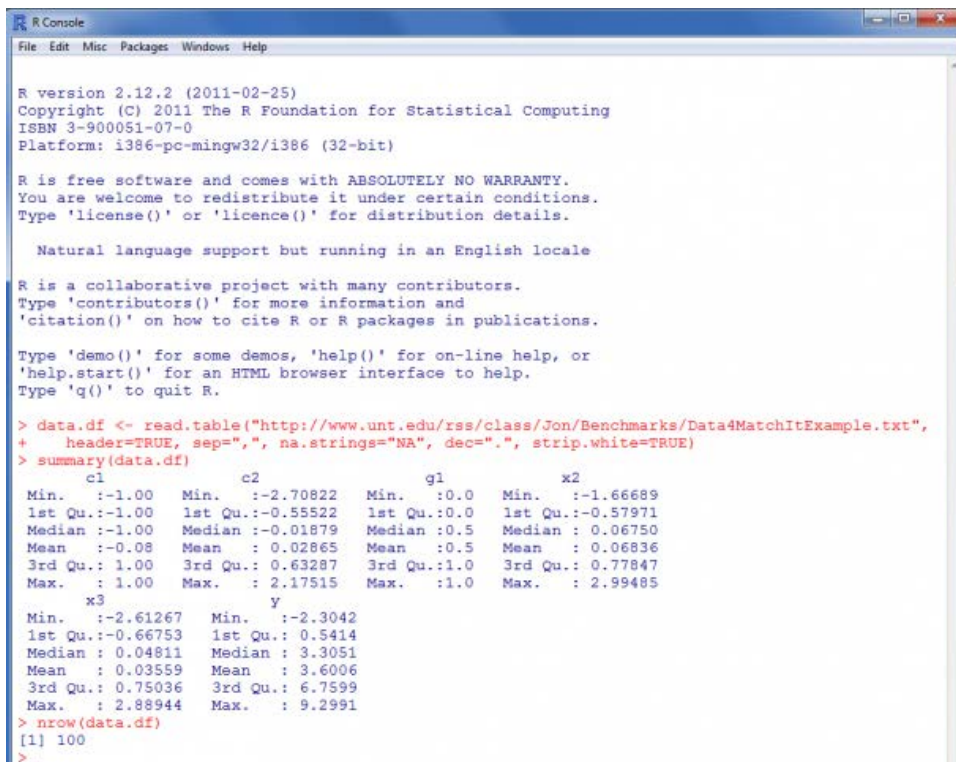
The 'MatchIt' package (Ho, D., Imai, K., King, G., & Stuart, E., 2011) implements a variety of methods for performing matching across two groups of a predictor based on the values of cases on one or more confounder variables. The resulting balance provides near freedom from some parametric assumptions of many common modeling techniques (e.g. linear regression, general linear model, generalized linear models, hierarchical linear models, structural equation models, etc.). In the regression situation, multicollinearity can be reduced to negligible levels and model specification errors can be controlled; meaning the influence of the confounders on the predictor of interest can be reduced to a point where the direct effect, or main effect, of the dichotomous predictor is independent of confounder influences. As Ho, Imai, King, and Stuart (2007a) state, there are three key advantages to using matching prior to parametric causal modeling; ease of use, more robust parametric estimated parameters – in terms of model form and specification, and reduced bias. The 'MatchIt' functions are easy use as they can be incorporated into typical data analysis routines prior to the primary parametric analysis(es). Parametric estimates based on matched data are more robust to model form and specification errors than raw data parametric estimates because the relationship between the dichotomous predictor variable and the confounder variable(s) has been controlled (i.e. removed or reduced). Reduced bias results from removing the influence of the confounder variables through the matching process; which in turn, decreases the chance of violating the assumptions of some parametric modeling techniques. Ho, et al. (2007a) also reported that the variance of estimated parameters is reduced when using matched data compared to raw data.

The way the 'matchit' function (from the 'MatchIt' package) works is dependent upon the method of matching used. There are several methods which can be specified by the 'method' argument. However, the basic principle of

matching is to use a multivariate distance measure (e.g. Mahalanobis distance) to identify cases in the control and treatment groups which responded in the same or similar ways on the confounder variables. Cases which are not matched will be discarded and replaced with replications of cases which were matched. Therefore, sample size remains the same as the original data.

Examples

First, read in the example data from the web naming it "data.df", get a summary, and take note of the number of rows (nrow). This data is simulated and was created specifically as an example for discussing matching in a regression situation. In the summary output notice that all variables are numeric; although the dichotomous grouping variable (0 = control & 1 = treatment) is g1. The covariates (confounder variables) are c1 and c2; with c1 being dichotomous and c2 being continuous. The continuous outcome variable is y1. Both x2 and x3 are continuous predictors of y1 along with the grouping variable (g1); but x2 and x3 are not related to g1, c1, or c2.



```
R Console
File Edit Misc Packages Windows Help

R version 2.12.2 (2011-02-25)
Copyright (C) 2011 The R Foundation for Statistical Computing
ISBN 3-900051-07-0
Platform: i386-pc-mingw32/i386 (32-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

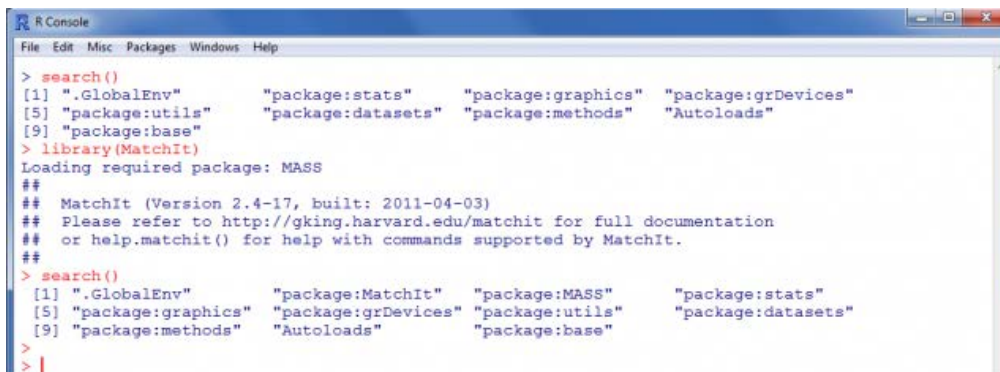
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> data.df <- read.table("http://www.unt.edu/rss/class/Jon/Benchmarks/Data4MatchItExample.txt",
+ header=TRUE, sep=",", na.strings="NA", dec=".", strip.white=TRUE)
> summary(data.df)
      c1      c2      g1      x2
Min.   :-1.00  Min.  :-2.70822  Min.   :0.0    Min.   :-1.66689
1st Qu.:-1.00  1st Qu.:-0.55522  1st Qu.:0.0    1st Qu.:-0.57971
Median :-1.00  Median :-0.01879    Median :0.5    Median : 0.06750
Mean   :-0.08  Mean   : 0.02865    Mean  :0.5    Mean   : 0.06836
3rd Qu.: 1.00  3rd Qu.: 0.63287    3rd Qu.:1.0    3rd Qu.: 0.77847
Max.   : 1.00  Max.   : 2.17515    Max.   :1.0    Max.   : 2.99485

      x3      y
Min.   :-2.61267  Min.  :-2.3042
1st Qu.:-0.66753  1st Qu.: 0.5414
Median : 0.04811  Median : 3.3051
Mean   : 0.03559  Mean   : 3.6006
3rd Qu.: 0.75036  3rd Qu.: 6.7599
Max.   : 2.88944  Max.   : 9.2991
> nrow(data.df)
[1] 100
>
```

Next, load the 'MatchIt' package.



```
R Console
File Edit Misc Packages Windows Help

> search()
[1] ".GlobalEnv"      "package:stats"    "package:graphics" "package:grDevices"
[5] "package:utils"    "package:datasets" "package:methods"   "Autoloads"
[9] "package:base"
> library(MatchIt)
Loading required package: MASS
##
## MatchIt (Version 2.4-17, built: 2011-04-03)
## Please refer to http://gking.harvard.edu/matchit for full documentation
## or help.matchit() for help with commands supported by MatchIt.
##
> search()
[1] ".GlobalEnv"      "package:MatchIt"  "package:MASS"      "package:stats"
[5] "package:graphics" "package:grDevices" "package:utils"     "package:datasets"
[9] "package:methods" "Autoloads"        "package:base"
>
> |
```

Next, we run our first 'matchit' with all the default values for each argument specified and get a summary of the results.

```

R Console
File Edit Misc Packages Windows Help
> m.out.1 <- matchit(formula = g1 ~ c1 + c2 + x2 + x3, data = data.df, method = "nearest",
+ distance = "logit", discard = "none", reestimate = "FALSE")
> summary(m.out.1)

Call:
matchit(formula = g1 ~ c1 + c2 + x2 + x3, data = data.df, method = "nearest",
distance = "logit", discard = "none", reestimate = "FALSE")

Summary of balance for all data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance  0.7438      0.2562    0.2655  0.4876  0.5471  0.4876  0.6956
c1        0.5200     -0.6800    0.7407  1.2000  2.0000  1.2000  2.0000
c2        0.4077     -0.3504    0.9572  0.7581  0.7407  0.7581  1.3783
x2       -0.0586     0.1953    0.9346 -0.2539  0.3284  0.3186  1.0058
x3       -0.0904     0.1615    1.1666 -0.2519  0.3331  0.3201  0.8847

Summary of balance for matched data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance  0.7438      0.2562    0.2655  0.4876  0.5471  0.4876  0.6956
c1        0.5200     -0.6800    0.7407  1.2000  2.0000  1.2000  2.0000
c2        0.4077     -0.3504    0.9572  0.7581  0.7407  0.7581  1.3783
x2       -0.0586     0.1953    0.9346 -0.2539  0.3284  0.3186  1.0058
x3       -0.0904     0.1615    1.1666 -0.2519  0.3331  0.3201  0.8847

Percent Balance Improvement:
      Mean Diff. eQQ Med eQQ Mean eQQ Max
distance      0      0      0      0
c1             0      0      0      0
c2             0      0      0      0
x2             0      0      0      0
x3             0      0      0      0

Sample sizes:
      Control Treated
All          50      50
Matched      50      50
Unmatched    0       0
Discarded    0       0

>
> |

```

There are four pieces of output produced by the summary function; the summary of balance for "all data" (i.e. the original data), the summary of balance for the "matched data", the percentages of balance improvement, and the sample size summaries. The output of the summary on 'm.out.1' reveals rather strikingly perfect matching. The key elements to focus on are the 'Mean Diff' for the "all data" compared to the 'Mean Diff' for the "matched data" – notice, there were no differences. This is confirmed by noting the Percent Balance Improvement where the zero values indicate a zero percentage change. Furthermore, notice that all the control cases were retained and all the treated cases as well. Essentially, nothing has been done; because, each control case was matched to each treated case on the distance measure; no selection has taken place based on the distance measure. One could use the 'discard' optional argument to specify a distance criterion; also called a region of common support which reflects the amount of overlap two variables' distributions share.

As a comparison; and to show a reason one would want to use the 'matchit' function, we run an example using the "genetic" (algorithm) method, "rpart" distance, and discard "hull.control" which retains all the treatment cases. Notice below, several additional packages are loaded to support the genetic method and optional arguments for it. The 'Matching' package (Sekhon, 2009) contains the genetic matching algorithm; function 'GenMatch'.

```

R Console
File Edit Misc Packages Windows Help
> m.out.2 <- matchit(formula = g1 ~ c1 + c2 + x2 + x3, data = data.df, method = "genetic",
+ distance = "rpart", discard = "hull.control", reestimate = "FALSE")
Loading required package: rpart
Loading required package: WhatIf
Loading required package: lpSolve
#####
## WhatIf (Version 1.5-5, built 2009-03-03)
## Complete documentation available from http://gking.harvard.edu/whatif
##
#####
[1] "Preprocessing data ..."
[1] "Performing convex hull test ..."
[1] "Calculating distances ..."
[1] "Calculating the geometric variance..."
[1] "Calculating cumulative frequencies ..."
[1] "Finishing up ..."
Loading required package: Matching
Loading required package: rgenoud
## rgenoud (Version 5.7-1, Build Date: 2010-08-26)
## See http://sekhon.berkeley.edu/rgenoud for additional documentation.
##
## Matching (Version 4.7-11, Build Date: 2010/09/21)
## See http://sekhon.berkeley.edu/matching for additional documentation.
## Please cite software as:
## Jasjeet S. Sekhon. Forthcoming. 'Multivariate and Propensity Score Matching
## Software with Automated Balance Optimization: The Matching package for R.'
## Journal of Statistical Software.
##

```

Iteration history omitted.


```

R Console
File Edit Misc Packages Windows Help
> summary(m.out.2)

Call:
matchit(formula = g1 ~ c1 + c2 + x2 + x3, data = data.df, method = "genetic",
        distance = "rpart", discard = "hull.control", reestimate = "FALSE")

Summary of balance for all data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance 0.7848      0.2152 0.2815 0.5695 0.5379 0.5695 0.9251
c1        0.5200     -0.6800 0.7407 1.2000 2.0000 1.2000 2.0000
c2        0.4077     -0.3504 0.9572 0.7581 0.7407 0.7581 1.3783
x2       -0.0586      0.1953 0.9346 -0.2539 0.3284 0.3186 1.0058
x3       -0.0904      0.1615 1.1666 -0.2519 0.3331 0.3201 0.8847

Summary of balance for matched data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance 0.7848      0.6984 0.2323 0.0864 0.2147 0.2260 0.4091
c1        0.5200      0.7200 0.7602 -0.2000 0.0000 0.0000 0.0000
c2        0.4077      0.1656 0.4274 0.2421 0.7553 0.7733 1.4598
x2       -0.0586      0.2821 0.2794 -0.3407 0.7296 0.8968 2.5504
x3       -0.0904     -0.0024 0.8134 -0.0879 0.3264 0.5881 1.8950

Percent Balance Improvement:
      Mean Diff.  eQQ Med  eQQ Mean  eQQ Max
distance 84.8292  60.0758  60.3174  55.7803
c1       83.3333 100.0000 100.0000 100.0000
c2       68.0639 -1.9764 -2.0012 -5.9081
x2      -34.1798 -122.2054 -181.4627 -153.5599
x3       65.0917  2.0253 -83.6997 -114.2018

Sample sizes:
      Control Treated
All          50      50
Matched       6      50
Unmatched     2       0
Discarded    42       0
> |

```

In this

summary, we notice that although the mean differences were drastically reduced for the two covariates (c1 & c2), the mean difference actually increased for one of the two predictors (x2). This is a result of those two predictors NOT being related to the grouping variable. So, we might run a third version of the 'matchit' function; including only the two covariates.

```

R Console
File Edit Misc Packages Windows Help
> m.out.3 <- matchit(formula = g1 ~ c1 + c2, data = data.df, method = "genetic",
+                   distance = "rpart", discard = "hull.control", reestimate =
+                   "FALSE")

```

Iteration history omitted.

```

R Console
File Edit Misc Packages Windows Help
> summary(m.out.3)

Call:
matchit(formula = g1 ~ c1 + c2, data = data.df, method = "genetic",
        distance = "rpart", discard = "hull.control", reestimate = "FALSE")

Summary of balance for all data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance 0.7709      0.2291 0.2992 0.5419 0.7014 0.5419 0.9206
c1        0.5200     -0.6800 0.7407 1.2000 2.0000 1.2000 2.0000
c2        0.4077     -0.3504 0.9572 0.7581 0.7407 0.7581 1.3783

Summary of balance for matched data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance 0.7709      0.7622 0.1950 0.0088 0.0192 0.1143 0.3141
c1        0.5200      0.5200 0.8890 0.0000 0.0000 0.4615 2.0000
c2        0.4077      0.4207 0.8184 -0.0130 0.1127 0.1776 0.5448

Percent Balance Improvement:
      Mean Diff.  eQQ Med  eQQ Mean  eQQ Max
distance 98.3817  97.2581  78.9074  65.8802
c1       100.0000 100.0000  61.5385  0.0000
c2       98.2914  84.7890  76.5778  60.4762

Sample sizes:
      Control Treated
All          50      50
Matched     13      50
Unmatched   27       0
Discarded   10       0
> |

```

With this summary (m.out.3) we see large reductions in the mean differences and the corresponding percent balance improvements. We can also adjust the 'GenMatch' function which is called by the method = "genetic" to better take advantage of the 'GenMatch'; possibly improving the results, but also possibly reducing them. Below, the defaults are shown -- which produce the same output as the previous run (m.out.3). The arguments associated with the

'GenMatch' function are pop.size, max.generations, wait.generations, fit.func, and nboots (see Sekhon, 2009).

```
R Console
File Edit Misc Packages Windows Help
> m.out.4 <- matchit(formula = g1 ~ c1 + c2, data = data.df, method = "genetic",
+                   distance = "rpart",
+                   pop.size = 15, max.generations = 100, wait.generations = 100,
+                   fit.func = "pvals", nboots = 0,
+                   discard = "hull.control", reestimate = "FALSE")
```

Iteration history omitted.

```
R Console
File Edit Misc Packages Windows Help
> summary(m.out.4)

Call:
matchit(formula = g1 ~ c1 + c2, data = data.df, method = "genetic",
        distance = "rpart", discard = "hull.control", reestimate = "FALSE",
        pop.size = 15, max.generations = 100, wait.generations = 100,
        fit.func = "pvals", nboots = 0)

Summary of balance for all data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance  0.7709      0.2291  0.2992  0.5419  0.7014  0.5419  0.9206
c1        0.5200     -0.6800  0.7407  1.2000  2.0000  1.2000  2.0000
c2        0.4077     -0.3504  0.9572  0.7581  0.7407  0.7581  1.3783

Summary of balance for matched data:
      Means Treated Means Control SD Control Mean Diff eQQ Med eQQ Mean eQQ Max
distance  0.7709      0.7622  0.1950  0.0088  0.0192  0.1143  0.3141
c1        0.5200      0.5200  0.8890  0.0000  0.0000  0.4615  2.0000
c2        0.4077      0.4207  0.8184 -0.0130  0.1127  0.1776  0.5448

Percent Balance Improvement:
      Mean Diff.  eQQ Med eQQ Mean eQQ Max
distance  98.3817  97.2581  78.9074  65.8802
c1        100.0000 100.0000  61.5385  0.0000
c2        98.2914  84.7890  76.5778  60.4762

Sample sizes:
      Control Treated
All          50      50
Matched      13      50
Unmatched    27       0
Discarded    10       0

>
|
```

In order to retrieve or create the new matched data set based on the output from the 'matchit' function, we must do some rather tedious scripting, first, selecting the matched cases by case or row number, then creating a grouping variable to identify each group, then renaming each data frame's columns so they will match when we finally row-bind (rbind) them back together into the 'match.data' data frame.

```
R Console
File Edit Misc Packages Windows Help
> m.data <- data.frame(cbind(data.df[row.names(m.out.4$match.matrix),c("c1","c2","g1","x2","x3")]
+ data.df[m.out.4$match.matrix,c("c1","c2","g1","x2","x3","y")]))
> head(m.data)
  c1      c2 g1      x2      x3      y c1.1      c2.1 g1.1      x2.1      x3.1
1 1 -0.4836156 1 -1.4258611 -0.4275126 7.827711 1 -0.4027928 0 -0.11494604 -1.8458597
2 1 1.8275227 1 -0.8015818 1.3277979 9.299084 1 1.0986201 0 1.98902670 0.7878834
3 1 -0.6334422 1 0.3413087 2.3259749 7.539089 1 -0.6636159 0 0.09108755 -1.0689569
4 1 -0.3843401 1 -0.6253586 -0.3558527 7.192726 1 -0.4027928 0 -0.11494604 -1.8458597
5 1 0.4298950 1 0.3819823 -0.5156637 6.613332 1 1.0986201 0 1.98902670 0.7878834
6 1 -0.3085521 1 0.2661275 0.7822289 6.997324 1 -0.2906993 0 0.13485935 0.1271418
  y.1
1 2.479125
2 2.653128
3 2.551735
4 2.479125
5 2.653128
6 3.296848
>
> m.data.1 <- cbind(rep("1", length(m.data[,1])), m.data[,1:6])
> m.data.0 <- cbind(rep("0", length(m.data[,3])), m.data[,7:12])
>
> names(m.data.1) <- c("Group", "c1", "c2", "g1", "x2", "x3", "y")
> names(m.data.0) <- c("Group", "c1", "c2", "g1", "x2", "x3", "y")
>
> matched.data <- rbind(m.data.1,m.data.0)
>
> matched.data <- data.frame(matched.data)
>
> head(matched.data)
  Group c1      c2 g1      x2      x3      y
1 1 1 -0.4836156 1 -1.4258611 -0.4275126 7.827711
2 1 1 1.8275227 1 -0.8015818 1.3277979 9.299084
3 1 1 -0.6334422 1 0.3413087 2.3259749 7.539089
4 1 1 -0.3843401 1 -0.6253586 -0.3558527 7.192726
5 1 1 0.4298950 1 0.3819823 -0.5156637 6.613332
6 1 1 -0.3085521 1 0.2661275 0.7822289 6.997324
> nrow(matched.data)
[1] 100
> ncol(matched.data)
[1] 7
>
|
```


Keep in mind, this new (matched) data can be saved or written out of R using the standard functions (e.g. write.table, write.csv, etc.).

Now we can do some comparisons to see how the matching has affected our analysis of the data; in terms of the proposed model we will now test. Here we are using a simple linear model, but keep in mind the model could be a complex SEM or HLM or whatever. In this example; we use linear regression. Keep in mind, the data is simulated and was generated with massive effects (i.e. no measurement error) and therefore, the coefficients are exactly modeled.

First, we run the linear model with the original (non-matched) data.

```
R Console
File Edit Misc Packages Windows Help
> lm.original <- lm(y ~ g1 + x2 + x3 + c1 + c2, data = data.df)
> summary(lm.original)

Call:
lm(formula = y ~ g1 + x2 + x3 + c1 + c2, data = data.df)

Residuals:
    Min       1Q   Median       3Q      Max
-1.085e-14 -1.482e-15  1.000e-17  2.004e-15  7.730e-15

Coefficients:
            Estimate Std. Error  t value Pr(>|t|)
(Intercept)  2.000e+00  5.314e-16  3.763e+15 <2e-16 ***
g1           3.500e+00  8.344e-16  4.194e+15 <2e-16 ***
x2          -9.000e-01  3.243e-16 -2.776e+15 <2e-16 ***
x3           5.000e-01  2.845e-16  1.758e+15 <2e-16 ***
c1           1.500e+00  3.868e-16  3.878e+15 <2e-16 ***
c2           5.000e-01  3.421e-16  1.462e+15 <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.038e-15 on 94 degrees of freedom
Multiple R-squared:  1,    Adjusted R-squared:  1
F-statistic: 2.398e+31 on 5 and 94 DF,  p-value: < 2.2e-16

>
```

Second, we run the linear model with the matched data.

```
R Console
File Edit Misc Packages Windows Help
> lm.matched <- lm(y ~ g1 + x2 + x3 + c1 + c2, data = matched.data)
> summary(lm.matched)

Call:
lm(formula = y ~ g1 + x2 + x3 + c1 + c2, data = matched.data)

Residuals:
    Min       1Q   Median       3Q      Max
-1.104e-14 -1.255e-15 -2.395e-16  1.410e-15  7.711e-15

Coefficients:
            Estimate Std. Error  t value Pr(>|t|)
(Intercept)  2.000e+00  5.148e-16  3.885e+15 <2e-16 ***
g1           3.500e+00  6.356e-16  5.507e+15 <2e-16 ***
x2          -9.000e-01  2.940e-16 -3.061e+15 <2e-16 ***
x3           5.000e-01  2.686e-16  1.861e+15 <2e-16 ***
c1           1.500e+00  3.707e-16  4.046e+15 <2e-16 ***
c2           5.000e-01  3.905e-16  1.280e+15 <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.976e-15 on 94 degrees of freedom
Multiple R-squared:  1,    Adjusted R-squared:  1
F-statistic: 1.342e+31 on 5 and 94 DF,  p-value: < 2.2e-16

>
```

It may be a bit odd that the output of each of the linear models is virtually the same. That is because the simulated data was created in such a way as to have extremely large effect sizes. However, if we look closely at the standard errors and the t-values (of the variables involved in the matching) we can see that the linear model with the matched data is more accurately capturing the main effects of each of those variables; because, we have decreased the strength of the relationships between the grouping variable and the covariates.

We can also document improvement by taking a look at the Variance Inflation Factor (VIF) for the grouping variable and both covariates. Notice, the VIFs for the matched variables (g1, c1, & c2) are notably lower than in the original data.

```
R Console
File Edit Misc Packages Windows Help
> library(car)
Loading required package: nnet
Loading required package: survival
Loading required package: splines
> vif(lm.original)
      g1      x2      x3      c1      c2
1.886601 1.027238 1.021344 1.611480 1.210768
> vif(lm.matched)
      g1      x2      x3      c1      c2
1.140333 1.215468 1.055319 1.132031 1.155659
>
```

Conclusion

The 'matchit' function in the 'MatchIt' package can be used for balancing the effect of one or more confounder variables (covariates) across a dichotomous grouping variable when in a variety of modeling situations. The function works on all types of covariates; be they dichotomous, polytomous, or continuous. In the linear modeling situation, the outcome variable can be of any type as well. The key to matching with 'matchit' is that the outcome is not used by the function. The function only deals with the relationships between a dichotomous predictor variable and other predictor variables included in the modeling strategy; be they variables of interest or covariates. These relationships, multicollinearity, cause indirect effects on the outcome which degrade the validity of interpretations and conclusions based on the coefficients of the predictors of interest and/or the covariates. In essence, the presence of indirect effects *confounds* the validity of the modeled direct effects. The direct effects are represented by the individual predictor coefficients or parameters. Indirect effects, multicollinearity being one of them, can manifest in a variety of ways; such as suppression. Suppression not only degrades the accuracy of the coefficients, but can cause the sign of a coefficient to be reversed as in the case of Simpson's paradox. By not taking into account the relationships among the predictors (of interest or covariates) the beta coefficients returned will be inaccurate representations of the direct effects of their respective variables on the outcome variable. In the presence of Simpson's paradox, the inaccuracy would include a change in sign. For example, a predictor may have a negative coefficient when taking into account the relationship between it and another predictor but, may display a positive coefficient when not taking that relationship into account. Matching balances those types of indirect effects across the groups of a dichotomous variable so that the direct effects of all the predictors are accurately modeled.

An Adobe.pdf version of this article can be found [here](#).

Until next time; *everything is made of dreams...*

References & Resources

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Short Courses

Instructor-led courses are still on hold. Please contact an [RSS member](#) or [Claudia Lynch](#) if you are interested in taking such a class or wish to have someone offer a class for your students. **SPSS and SAS courses; they are now offered online only.** RSS staff will be still be available for consultation on those topics, however. Another class available online is [Introduction to R](#).

Surf over to the [Short Courses](#) page to see instructions for accessing the SPSS and SAS online learning and other training that is available to you. You can also see the sorts of instructor led courses that have been offered in the past.

Special classes can always be arranged with the RSS staff. See "Customized Short Courses" below for further information. Also, you can **always** contact the RSS staff for one-on-one [consultation](#). **Please read the [FAQ](#) before requesting an appointment though.**

Especially for Faculty and Staff Members

In addition to the ACS Short Courses, which are available to students, faculty and staff, staff and faculty members can take courses offered through the [Human Resources Department](#) (they have a new comprehensive training curriculum), and the [Center for Learning Enhancement, Assessment, and Redesign](#). Additionally, the [Center for Achievement and Lifelong Learning](#) offers a variety of courses, usually for a small fee.

EIS training is [available](#). Questions or comments relating to EIS training should be sent to EISTCA@unt.edu.

Microsoft E-Learning

Microsoft E-Learning courses are now available for **faculty and staff** via our UNT-Microsoft Campus Agreement. Please contact Claudia Lynch at lynch@unt.edu for instructions on accessing this training. If you haven't accessed the training since last year you will need to get a new access code.

Microsoft Outlook Tutorials and much more

The Enterprise Messaging and Directory Services Group has all sorts of useful information on their [website](#), including tutorials and FAQs. The home page displays a list of their newest tutorials with tutorial topic pages displaying the most accessed pages. You can search the site for whatever you're interested via a Search Box on the left-hand side of the page.

Central Web Support

Consult Central Web Support for assistance in acquiring "Internet services and support." As described on their [website](#):

CWS provides Internet services and support to UNT faculty, staff and students. Services include allocating and assisting departments, campus organizations and faculty with web space and associated applications. Additionally, CWS assists web developers with databases and associated web applications, troubleshooting problems, support and service.

CLEAR (was Center for Distributed Learning)

[CLEAR](#) offers courses especially for Faculty Members. A list of topics and further information can be found [here](#).

The center also offers a "Brown Bag" series which meets for lunch one **Wednesday** a month (recently changed from the first Thursday of each month) at Noon in Chilton 245. The purpose of this group is to bring faculty members together to share their experiences with distributed learning. One demonstration will be made at each meeting by a faculty member with experience in distributed learning. More information on these activities can be found at the [CLEAR Website](#). Scheduled meeting dates for the rest of the school year are:

- April 20

UNT Mini-Courses

There are a variety of courses offered, for a fee, to UNT faculty, staff and students as well as the general public. For additional information surf over to <http://www.unt.edu/minicourses/>

Information Security Awareness

The UNT Information Security team offers Information Security Awareness [courses](#) to all UNT faculty and staff. Topics to be covered will include workstation security, sensitive data handling, copyright infringement issues, identity theft, email security, and more.

It is a policy requirement that ALL staff take an information security course at least once a year. The next training will be on **April 25** in Marquis Hall room 118 at 2pm. It will last approximately one hour. You can sign up for this class online by following the link at <http://security.unt.edu/training> to UNTranet. After logging-in, Click the "+ Add Document" button below to fill out a Security Training Request Form.

Please contact [Allan Anderson](#) in CITC Information Security if you have any questions, or would like more information about the online training. **Either attending the live class or going through the online training will count towards your training requirement.** You can also request a customized course to be taught for your department.

Alternate Forms of Training

Many of the General Access Labs around campus have tutorials installed on their computers.

See <http://www.gal.unt.edu/> for a list of labs and their locations. The 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>

The [Training Website](#) has all sorts of information about alternate forms of training. Computer Based Training (CBT) and Web-based training are some of the alternatives offered, although due to the rising costs of training, shrinking budgets and changing technology, computer-based training at UNT is in a state of transition. For up-to-date information on CBT at UNT, see the CBT [website](#).

Gartner Research Services

Way back in 2006 we announced [Gartner Core Research Services Now Available to the UNT Community](#). Our subscription for Gartner services has always included **all** UNT faculty, students, and staff. All you need to do to access the subscription is to **log into the UNT Gartner portal page** at <https://gartner.unt.edu/>. Once you have logged in, you can view upcoming webinars: <http://www.gartner.com/webinars/> and listen to Gartner podcasts here: http://www.gartner.com/it/products/podcasting/asset_137461_2616.jsp.

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. A look at their Education and Training [website](#) reveals some interesting possibilities.

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.





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Staff Activities

Transitions

New Employees:

- **Jacob Flores**, IT Specialist, ABN Distributed Network Support.
- **Christopher Johnson**, IT Specialist, ABN Distributed Network Support.
- **Steve Wang**, IT Programmer Analyst, Benefits HR Systems (AIS).
- **Caitlin Clark**, CSS Tech, Classroom Support Services (part-time).
- **Michael Tarlton**, CITC Helpdesk Consultant (part-time).
- **Christian Lopez**, Data Communication Services (part-time).
- **Daniel Walls**, IT Specialist, Distributed Learning Support.

No longer working in the Computing and Information Technology Center:

- **Ravikianth Kukudala**, Programmer Analyst, Student Records Systems Development (AIS).
- **Trent Geerdes**, IT Specialist, Research Computing Support, (ACUS).
- **Trevor Stuart**, ABN Distributed Network Support (part-time).
- **Tom McElwee**, Senior Director, Enterprise Systems Technical Services.
- **Adrian Rollett**, IT Manager, Central Web Support.
- **Robert McCormick**, CSS Tech, Classroom Support Services (part-time).
- **Chad Stevenson**, CSS Tech, Classroom Support Services (part-time).

Changes, Awards, Recognition, Publications, etc.

Transfer within CITC

Jacob Flores moved to a full-time position in ABN Distributed Network Support from the CITC Helpdesk where he was a part-time Consultant.

Service to UNT

Congratulations to **Dowl Morrow**, Communications Analyst, Telecommunications, on his **20 years** of service to UNT.

Congratulations also to **Jackie Ehinger**, IT Programmer Analyst, Student Financial Systems Development (AIS) for her **5 years** of service to UNT. They were [recently recognized](#) in *InHouse*.

Outstanding Employee, Outstanding Department

As [reported recently](#) in *InHouse*, outstanding employee and department awards were presented at the March 3 Staff Sack Lunch. "**John Hooper**, acting vice president for **Information Technology** and chief information officer, presented the Steve Miller Outstanding Employee award to **Lauren Buchanan**, manager, **Administrative Information Systems Business Analyst Services**, and the outstanding department award to the **Application Infrastructure** team of the **Computing and Information Technology Center**, represented by **Robert Blake**, programmer analyst; **Billy Huber**, programmer analyst, **Paula Davis**, programmer analyst; and **Luanne Linke**, manager, **Application Administration and Support**."

Fun Fact Winner

We have another *InHouse* prize winner! **Claudia Lynch**, Documentation Services Manager and *Benchmarks Online* editor (ACUS), was a winner in the March 7 *InHouse* [prize giveaway](#).

CITC welcomes the new UNT System CIO, to Discovery Park

Michael DiPaolo, Associate Vice Chancellor and Chief Information Officer, moved in to his new offices this month. Mr. DiPaolo joins the UNT System after a long career in Information technology. According to the [blog](#) of the vice chancellor for finance for the UNT System, "Michael will immediately begin leading an initiative to develop a system-wide consolidated information technology strategic plan, short term and long term operating budgets as well as governance, priority setting and decision making structures leading to the creation of a high performing, customer focused IT service organization. Our commitment in the early days of this new consolidated organization is to meet or exceed existing cost and quality metrics, and as the organizational matures, we plan to establish new, higher, benchmarks for service and quality."



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Campus Subscription to Higher Education Newsletters

By [Jane Himmel](#), Associate Director, CLEAR

The University of North Texas has purchased a Group Online Subscription allowing campus members free access to Online Classroom & The Teaching Professor from Magna Publications. These electronic newsletters provide the information faculty, deans, chairs, and other academic decision-makers use for effective leadership within their colleges or departments and fulfill their institution's primary missions of teaching and scholarship.

There are two ways to access the latest issue or browse the archives:

1. Go to www.magnapubs.com/group and select the correct publication. If logging in from a campus computer, you will not need to enter a password.
2. If you are signing in from an off-campus computer, or if you would like to receive an email message each time a new issue is posted, you'll need to create an account and register as part of the UNT group. Please email amberb@unt.edu for instructions.



Online Classroom provides practical advice and examples of proven, research-based pedagogical techniques to help instructors and course developers create and teach outstanding online courses. Includes expert advice on:

- Course design
- Learner-centered pedagogy
- Synchronous and asynchronous interaction
- Online learning communities
- Appropriate use of technology
- Course management
- Assessment

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With each issue, *The Teaching Professor** delivers thought-provoking and inspirational articles on a wealth of critical topics. Brief and to the point, it covers such subjects as:

- Student-centered learning
- Mentoring new and adjunct faculty
- Overcoming student apathy
- Energizing and re-inspiring experienced faculty
- Integrating new technology
- Responding to course evaluations and feedback

*Available in text and full audio (MP3)

[View Current Issue](#)

Links to current issues of both newsletters are provided above. Please contact amberb@unt.edu if you have any

questions or problems gaining access.



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Surplusing Old Computers?

By [Deke Isaac](#), Manager, Microcomputer Maintenance Shop

Surplusing old computers? Remember [MMS](#) before you surplus those old machines! Please don't let this happen!



Your previous donations have already helped UNT to save. Simply e-mail a list of system numbers (UNT decals or Dell service tags) to mmstechs@unt.edu.

Questions? Contact:

Deke Isaac
Manager, Microcomputer Maintenance Shop (CITC)
GAB 529 - University of North Texas
deke.isaac@unt.edu
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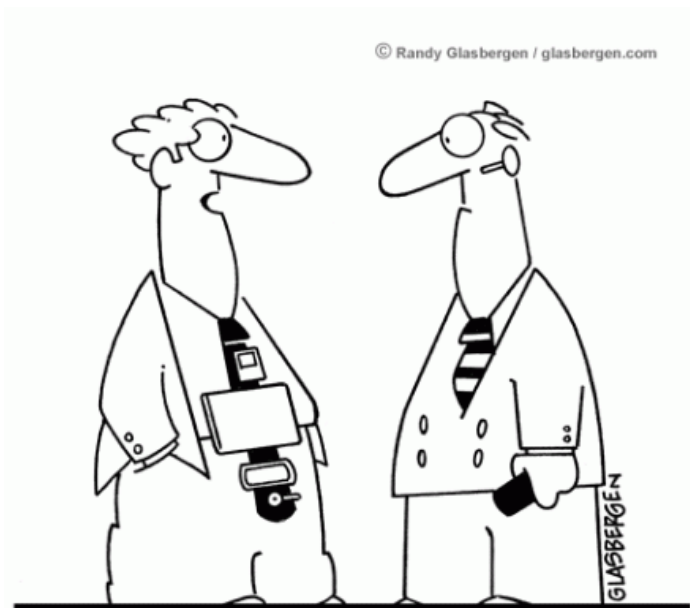
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Today's Cartoon



"It recharges my phone, iPod, netbook, and bluetooth headset — it's a power tie."

From "Today's Cartoon by Randy Glasbergen", posted with special permission.
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