American University - School of International Service

SIS: 750-004OL – Syllabus (v.5)

Big Data Analytics and Text Mining in International Affairs Research

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Class Meetings: Mondays 7:00 a.m. – 9:00 a.m. EST
Format: Online – Synchronous/ Asynchronous
vClassroom: http://tinyurl.com/bigdatatext2016/
Blackboard Learn Site: http://blackboard.american.edu
Office Hours: Mondays, 3:00-5:00 p.m.; and by appointment

Course Description

This course is designed to help participants understand the opportunities and challenges of "Big Data Analytics" in International Affairs research by exposing you to the tools and techniques used to analyze large-scale unstructured textual data. These approaches are applicable for a range of social science research topics, such as identifying: core themes in State Department speeches and blog posts; sentiment analysis and affect in twitter feeds; emerging areas of concern or interest on email lists; similarities and differences in national reports on international treaty commitments. Previous masters and doctoral students have found these techniques to be extremely valuable. While the concept of Big Data is relative to each field, as much as 75-80% of available data is unstructured text, making it perhaps the largest single data source for the modern social science investigator. In the aggregate, these data sources can easily run into thousands or millions of discrete textual items, but perhaps stored in only gigabyte file sizes. Textual data at this size and scale is particularly challenging to analysts using only traditional forms of content analysis, and is even challenging to those scholars using Computer Assisted Qualitative Data Analysis Software (CAQDAS) tools, who find it difficult to cope with the time and effort required to analyze these large data sources. As a result, many scholars work alone (or in very small teams) on limited datasets and risk making Type I errors (rejecting a null hypothesis that is true) or Type II errors (accepting a null hypothesis that is false). Others make extremely slow progress using traditional hand-coded forms of analysis. Moreover, many still work in small, discipline-specific groups that do not incorporate insights from disciplines such as computer science and mathematics. In this course, we employ a "learn by doing" framework. This means the seminar will include theoretical background, but will focus on a practical, hands-on, approach where students can Bring Your Own Data (BYOD) for exploration in the seminar. This allows participants to spend substantial amounts of time working in the software that enables them to harness computational power to analyze the large-scale unstructured textual data. Essentially, this course will help you find the proverbial needle in the international affairs big data haystack. *Green Mobile Learning Strategy*: Another innovative aspect of the course is its green mobile learning strategy, which allows you to access nearly all course material and class sessions – including the synchronous course sessions – from your smart phones or tablet devices (iOS, Android or Windows). While there are synchronous sessions, there is no physical classroom for the course. This approach will afford you great flexibility in how you approach the course. All weekly synchronous sessions will be recorded, and available in the LMS after the session concludes.

Learning Objectives

At the end of this seminar, participants will be able to do the following:

1. Describe what is meant by the term "Big Data"; its relative nature; and its application to international affairs and broader social science research.
2. Identify relevant sources of large-scale unstructured textual data.
3. Describe and critique the range of commercial and open source software options available for the analysis of large-scale text mining.
4. Manage a Project in two powerful data analysis software packages (Provalis and R/tm).
5. Develop research questions appropriate for being answered by textual analysis.
6. Prepare and preprocess a textual corpus for computational analysis.
7. Analyze large-scale unstructured textual data sets through CAQDAS and data mining techniques.
8. Report results of computational text analyses to answer specific questions.

Required Texts and Readings

The required readings for this course are important in providing you with the background material to be able to participate effectively in the seminar discussions, and to complete your assignments. As such, the required reading and any other material provided for asynchronous review, should be completed in advance of that particular class session (see schedule below). Required reading materials will come from the required textbooks and supplemental reading in the LMS:

1. *Practical Text Mining and Statistical Analysis for Non-Structured Text Data Applications*, Gary Miner et al, Academic Press/Elsevier (2012) (Kindle)
2. *An Introduction to Data Science*, Jeffrey Stanton (2013). (Free iBook or PDF)
3. *R for Everyone: Advanced Analytics and Graphics*. Jared P. Lander. Addison-Wesley, 2014. (Kindle)
4. *Social Media Mining with R*, Nathan Danneman, Richard Heimann. Packt Publishing, 2014 (Kindle)

Required Software

1. Provalis Research ProSuite: (includes QDAMiner, WordStat, SimStat) (Free 30-day Trial Version), Windows only. Includes: (http://provalisresearch.com/downloads/trial-versions/), and for information on running the software on a Mac: http://provalisresearch.com/products/simstat/simstat-technical-information/mac-os/)
2. R: (Free, cross platform) – the default R package (http://cran.us.r-project.org).
3. RStudio: (Free, cross platform) - or desired R GUI equivalent (e.g R Console, Eclipse)

Optional Software

1. RInstructor: ($4.99, available on iOS and Android) – Tutorial and videos for R, including code snippets
2. Bb Student Mobile: (Free, available on iOS and Android)- Innovative approach to Mobile access to Blackboard Ultra/LMS content
3. Blackboard Mobile Learn: ($1.99, available on iOS and Android)
4. AU Virtual Computing Lab: To access software on the AU VCL: http://www.american.edu/vcl/.
5. HPC: Access to AU High-Performance Computer (Mac: Filezilla/Terminal; PC Putty/WinSCP).

Optional Texts

1. *Big Data: A Revolution that Will Transform How We Live, Work, and Think*, Viktor Mayer-Schonberger and Kenneth Cukier, Houghton Mifflin Harcourt, 2013 (available for Kindle)
2. *Hadoop: The Engine that Drives Big Data*, Lars Nielsen. Executive Summary (Available for Kindle) New Street Communications (2013)

Criteria for Evaluation

1. Expectations and Experience Video: 5%
2. Review and Critique of Available Software: 10%
3. Identifying Data Sources: 10%
4. Purpose and Formulating Research Questions: 15%
5. Mid-Term Project: Text Analysis Using Provalis ProSuite: 25%
6. Final Project: Text Analysis Using R/tm and RStudio: 25%
7. Personal Reflections: 10%

Optional Extra Credit Opportunity:

1. Blogging at: http://bigdatatext.org/: 1% each, maximum of 10%

Given the specific goals and objectives of the seminar, seven (7) graded assignments have been developed to assess and evaluate the degree to which you have mastered the material and met the learning objectives for the seminar. Each of these assignments is described in detail below. All assignments are due into the "Assignment Drop Box" of the LMS **by 6:00 a.m., on the posted due date. No late assignments will be accepted.** All assignments not submitted via the "Assignment Drop Box" will be ignored. While this procedure may seem draconian, but it is necessary to give me time to process your submissions before we discuss them in class. We will also use the Bb LMS to report grades and student status in the seminar. All assignments must be followed to the letter. *There will be no exceptions to this policy.* As a result, students are encouraged not to wait until the actual deadline to submit a given assignment into the LMS or ask questions if you have them.

Assignments

Assignment 1: **Personal Expectations and Experience Video**: 5%

For this introductory assignment, participants will follow the template provided within Bb Learn to produce an expectations paper of no more than two pages, and record and upload a video using the new Kaltura Media platform within Blackboard. To do this, click on the "Assignment" link and you will see the option to "Write Submission", then you will see a selection of tools. Click the "Mashup Tool" and then select Kaltura Media (you may need to expand the menu bar to see the button). Then, click the "Add New" button and create a new recording and submit that. Don't forget to scroll to the bottom of the screen and submit the assignment. Then, if you would like to also make your introductory video available to the entire class, please go to the "Discussion Board", see the "Introductory Video" forum, and reply to the "Share Intro Video" thread. Again, click "Mashup Tool" and select Kaltura Media. Select your video to put it into the body of the message. *Due: Friday, 15 January*

Assignment 2: **Review and Critique of Available Software for Text Analysis**: 10%

In sessions 1 and 2, we introduce ten (10) different software applications for text analysis (mostly commercial tools with some open source options) and make a case for why we have chosen the two we are going to use this semester. Provide your analysis of the strengths and weaknesses of each applications discussed in Sessions 1 and 2: 1. Atlas.ti, 2. NVIVO, 3. MaxQDA, 4. HyperRESEARCH, 5. dedoose, 6. DiscoverText, 7. R/tm, 8. IBM Text Analytics, 9. Hadoop/MapReduce, 10. Provalis ProSuite (QDA Miner, WordStat). *Due: Friday, 29 January*

Assignment 3: **Identifying Data Sources**: 10%

There are many potential sources of textual data to answer questions of interest to seminar participants. For this assignment, participants will work with the professor to identify large-scale textual data sources appropriate for the kinds of analyses planned for the course. You may "Bring Your Own Data (BYOD)" and use that data for your assignments in the class. Following a template provided in Bb Learn, participants will document and describe these data sources and prepare and submit a PowerPoint presentation. If you are unable to participate synchronously to deliver your presentation, please record and submit it using Kaltura Media as above. *Due: Monday, 1 February*

Assignment 4: **Purpose and Formulating Research Questions**: 15%

Given the available data sources (presented in Assignment 3), participants will identify a purpose for your study and develop 2-4 draft research questions. These research questions will be informed by the kinds of analyses being taught in class, and although they may be revised before the mid-term, they will form the basis of the mid-term projects. Prepare a PowerPoint presentation. If you are unable to participate synchronously, submit using Kaltura Media. *Due: Monday, 8 February*

Assignment 5: **Mid-Term Project**: Text Analysis Using Provalis ProSuite: 25%

Participants will conduct a research project analyzing the data sources identified in Assignment 3 and answering the research questions developed in Assignment 4. Each participant should be active in developing and executing the project using the CRISP-DM approach. A peer-review technique will be used to assess each individual contribution to the project. Each mid-term project will consist of a short report (five pages) and PowerPoint presentation. Each project will have up to 10 minutes for presentation and 5 minutes for questions. The timing of these presentations may vary based on the eventual size of the final class. Please try to attend the mid-term and final session synchronously, but if you are unable, please submit using Kaltura Media as above. *Due: Monday, 29 February*

Assignment 6: **Final Project**: Text Analysis Using R/tm and RStudio: 25%

After the mid-term, participants will shift their attention to conducting text analysis projects using the powerful open source software and programming environment R. The data sources for the final project may remain the same, or be changed. However, new research questions should be asked. Again, each participant should be active in the development and execution of the project, and for groups, a peer-review technique will be used to assess each individual contribution to the project. Each final project will consist of a short report (five pages) and Presentation (up to 10 minutes and 5 minutes for questions). Please try to attend the mid-term and final session synchronously, but if you are unable, please record and submit it using Kaltura Media as above. *Due: 25 April*

Assignment 7: **Personal Reflections**: 10%

At the end of the seminar, participants will follow the template provided within Bb Learn to describe their individual experiences with the seminar. We are particularly interested in your assessment of the techniques and technologies used in the seminar, and the strategies you used to master them. *Due: Wednesday, 27 April*

Extra Credit: **Blogging** (up to 10%): Participants may blog about course topics at http://bigdatatext.org/. Each blog post of 200 words or more will receive 1% (maximum of ten).

All assignments will be evaluated using a specific rubric for that assignment, as well as using the following five criteria: (1) timeliness; (2) meeting requirements; (3) writing style; (4) analysis; and, (5) presentation/appearance. The numeric total you amass during the semester will translate into a letter grade according to the following scheme:

A (Consistently distinguished performance): 93-100%	C+ (Poor performance): 75-79%
A- (Strong, solid achievement in most aspects): 90-92%	C (Very poor performance) 70-74%
B+ (Good performance, consistent with expectations): 87-89%	C- (Borderline Unacceptable) 60-69%
B (Acceptable): 83-86%	D (Unacceptable) 50-59%
B- (Borderline Acceptable): 80-82%	F (Failing) 0-49%

Seminar Schedule

Part I: Understanding Big Data Analytics and Text Mining

Session 1: 11 January - **Overview of Big Data in International Affairs Research** and social science research more broadly. Includes an introduction to the ASSANA Methodology and the importance of Computer Assisted Text Mining in International Affairs research. Identifying data problems for unstructured text. Discussion of genres of textual sources (e.g. websites, blogs, Twitter feeds, email archives, speeches, annual reports, newspapers, journal articles), ethics in big data text analytics (e.g. use of leaked or proprietary information), potential data sources for use in the seminar, including: (1) State Department archives; (2) UN/regional organization transcripts/documents; (3) email listserv archives; (4) Twitter feeds. (**Reading**: Big Data: Revolution Chapters 1-2; Cogburn and Wozniak, 2013; Data Science, Stanton, Chapters 1, 2, 8; QDA Miner 2.0: Mixed Model Qualitative Data Analysis Software, *Field Methods*, Vol. 19, No. 1, February 2007 87–108).

18 January 2016 - MLK Holiday - No Classes

Session 2: 25 January - **History and Conceptual Foundations of Text Analysis**. History of text mining. Web mining, crawling, scraping. Sentiment analysis, supervised and unsupervised machine learning. Seven practice areas: (1) search and information retrieval; (2) document clustering; (3) document classification; (4) web mining; (5) information extraction; (6) natural language processing (NLP); and (7) concept extraction. Introduction to popular tools for CAQDAS and text mining (Atlas.ti, NVIVO, MaxQDA, HyperRESEARCH, dedoose, DiscoverText), a brief introduction to R/tm, and Hands on introduction to the Provalis Research ProSuite (QDA Miner, WordStat, Hadoop/MapReduce). Managing a project in Provalis. Overview of the Provalis work environment. Creating a new project. Customizing a project. Manipulating variables and cases (**Reading**: Chapter 1-2 Practical Text Mining; QDA Miner Manual Chapters 1-5).

Part II: Practicing Text Mining in the Provalis ProSuite

Session 3: 1 February – **Acquiring and Preprocessing Data for Text Analysis and Coding.** Technologies that facilitate the acquisition of textual data. Understanding the Cross-Industry Standard Process for Data Mining (CRISP-DM). Understanding the Generalized Vector-Space Model and the "bag of words" assumption. Considerations and steps in preprocessing text (including stopwords/exclusion lists, stemming and lemmatization). Creating codes and managing a codebook. Modifying existing codes. Performing simple text analysis. (**Reading**: Chapter 3 Practical Text Mining; QDA Miner Manual Chapters 6-7)

Session 4: 8 February - **Text Analysis Use Cases and Methodology in Practice**. Use cases of text mining: (1) extracting meaning from unstructured text; (2) automatic text categorization; (3) improving predictive accuracy in predictive modeling; (4) identifying specific or similar/relevant documents; (5) extracting specific information. Preparing and importing data. The working environment. Security features and text retrieval tools (i.e. text retrieval, section retrieval, query by example, keyword search). Coding frequency and retrieval. Coding co-occurrences and case similarity index. Assessing relationships between coding/variables. Conducting word frequency analysis and visualization using charts. Using the Report Manager. Managing teamwork in projects. Merging projects. (**Reading**: Chapters 4-6 Practical Text Mining; QDA Miner Manual Chapters 8-10; Péladeau, N., & Sovall, C. (2005). Application of Provalis Research Corp.'s Statistical Content Analysis Text Mining to Airline Safety Reports. *Global Aviation Information Network*.)

Session 5: 15 February - **Computer Assisted Text Mining: Automated Text Classification and Categorization**. Identifying themes using co-occurrence analysis. Hierarchical clustering and multidimensional scaling. Correspondence analysis, correlation and comparison analysis. Automated text classification. Principles of dictionary construction for categorization dictionaries. Applying a categorization dictionary and validating the dictionary. Improving categorization dictionaries. Automatic text classification. Sentiment Analysis. Importing and exporting data. Performing multivariate analysis on words or categories. Using Provalis output for Social Network Analysis. (**Reading**: Provalis WordStat Manual, front matter and Chapters 1-18/ these are not really chapters, and are very short; Chapter 7, 13 Practical Text Mining).

Session 6: 22 February - **Prediction in Text Mining and Entity Extraction**. Web Analytics and Web Mining. Prediction in text mining. Entity extraction. Combining statistical analysis and Social Network Analysis in Provalis ProSuite (**Reading**: Chapters 8-9, 12 Practical Text Mining).

Session 7: 29 February - **Mid-Term Projects** – Using the Provalis ProSuite.

AU Spring Break - 7-14 March 2016

Part III: Practicing Text Mining in R

Session 8: 14 March - **Introduction to R and R Studio**. Introduction to R for statistical and textual analysis. Why R? Understanding R and RStudio. Downloading and installing R and RStudio (OSX, Windows, Linux). Issuing commands in R, Doing simple math in R. RStudio projects (tools and options). Installing R Packages. Data Types (numeric, character, dates). Vectors (collections).

Data structures. Importing data. Understanding basic statistical models in R (linear models and ANOVA). Naming conventions (making readable code). Statistical graphics in R. Using scripts and functions. (**Reading**: Chapter, 3 Data Science; An Introduction to R: Notes on R: A Programming Environment for Data Analysis and Graphics, version 2.13.2 (2011-09-30), Venables, Smith and the R Core Team; Lander, *R for Everyone*, Chapters 1, 2, 3, 4, 5, 6, and Appendix A); *Social Media Mining in* R, Chapter 1-2. ***Optional workshop*** *(9:00 – 11:00 a.m.)*: Statistical analysis in R. (**Reading** Lander, *R for Everyone*, Chapters 14, 15, 16, 17, 18, 19, 20, 21).

Session 9: 21 March - **Introducing Text Mining in R**. Exploring text mining packages in R (tm, twitter, sna, wordcloud). Introducing R/tm. Two example opportunities (Frequency and Principle Component Analysis of published documents; and preprocessing and item extraction of mailing list). (**Reading**: Lander, *R for Everyone*, Chapters 7, 8, 9, 10, 11, 12, 13; An Introduction to Text Mining in R, Feinerer (2008) pp. 19-22; Feinerer 2013, Introduction to the tm Package: Text Mining in R, Feinerer 2014; R user manual; R Instructor, R Google Videos; available in Bb Learn).

Session 10: 28 March - **Text Mining in R using R/tm and RStudio**. Text mining using R/tm and Rstudio. Importing data and preparing a corpus. Inspecting a corpus. Transformations. Preprocessing (removal of stopwords/exclusion lists, stemming, lemmatization). Tutorial on basic sentiment analysis in social media content. (**Reading**: Introduction to the R/tm Package: Text Mining in R, Feinerer (2013); *Social Media Mining in* R, Chapter 3-4; Tutorial BB: Mining Titter for Airline Consumer Sentiment, in *Practical Text* Mining. R user manual).

Session 11: 4 April - **More Text Mining in R using R/tm and RStudio**. Meta data management. Creating term document matrices. Creating and using dictionaries. (Introduction to the tm Package: Text Mining in R, Feinerer (2013); *Social Media Mining in* R, Chapter 5-6.

Session 12: 11 April – **Preparing to Run R/tm on the American University HPC**. R/tm on the AU High Performance Computer (HPC). (**Reading**: Chapter 16 Practical Text Mining)

Session 13: 18 April - **Running R/tm on the American University HPC**. R/tm on the American University High Performance Computer (HPC) and brief overview of Hadoop MapReduce. (**Reading**: Hadoop: The Engine that Drives Big Data, Executive Summary)

Session 14: 25 April - **Final Projects** Using R/tm RStudio for analysis.

Assignment 7, Personal Reflection: Due 29 April

Attendance, Class Participation, Group Projects and Grades

This course requires significant participation during synchronous sessions, asynchronous online activities, and group projects (unless you are working individually). Attendance is essential to your successful completion of this seminar; however, no formal attendance will be taken. All synchronous seminar sessions will be recorded and made available in the LMS. Participants are responsible for attending the synchronous sessions (or reviewing the entire recording) and being completely prepared for each seminar session according to the requirements of this syllabus. Lectures, class discussions, and group activities will supplement the outside reading. Seminar participants are expected to engage actively in seminar discussions and activities. Students are responsible for all assignments, explanations, and modifications given out in class.

Office Hours/Faculty Communication

Participants are encouraged to take advantage of office hours and other opportunities to meet with me. My physical office hours are Mondays from 3:00–5:00 p.m. EST, and by appointment. Again, I strongly suggest that you meet with me as soon as possible to discuss the seminar material and any questions that you may have. You may also want to discuss additional research opportunities in my lab and elsewhere. In addition to my physical office hours, I am available "virtually" nearly every day on Skype (Derrick_Cogburn) or Google+ (Derrick Cogburn). If you see me online, feel free to ask if I am available to chat or do a Hangout. Further, if you require an appointment outside of these arrangements, please send me e-mail and we can try to schedule an appointment.

Seminar Website and Collaboration Technology

This is an online course and will include both asynchronous activities (using Blackboard Learn) and "real time" synchronous sessions (using Blackboard Collaborate Ultra). All of these tools can be found within the American University Blackboard (Bb) Learn Learning Management System (http://blackboard.american.edu/). Starting on Monday, 11 January 2016 we will have weekly synchronous sessions from 7:00 – 9:00 a.m. on Monday mornings You are encouraged to attend the live sessions if possible. However, each synchronous session will be recorded, and you are required to either attend the live session or view the recording. This approach should allow you a great deal of flexibility.

Our webconferencing tool is Blackboard Collaborate Ultra, and the seminar room for the semester may be accessed at the following url: http://tinyurl.com/bigdatatext2016/. This url will be good for the entire semester, and we will use the same room for all live/synchronous sessions. You may find user guides and tutorials for our webconferencing server at the following support page:http://www.blackboard.com/Platforms/Collaborate/Support/Support-for-Blackboard-Collaborate.aspx. If you would like to join the private Facebook group for the course, please go to the following url. https://www.facebook.com/groups/bigdatatext/. Joining the group does not make you friends with me or anyone else in the class, but will give you access to post and read material posted there. You may also blog about course topics at http://bigdatatext.org/.

Green Mobile Learning Strategy

You may participate in this "Green" course from Washington, DC or anywhere in the world where you can gain access to the Internet. The asynchronous material is available on mobile devices (iOS or Android - using a free Bb app called "Bb Student". Using this app, you may access the readings; read, post and respond to the blogs; review assignments; and review announcements. The synchronous sessions may be accessed using a free Bb app called "Collaborate". All synchronous sessions will be recorded and available for your review immediately following the conclusion of those sessions. However, if you are in DC, please feel free to stop by to chat.

Individual Meetings

If you would like to meet with me individually, either online or in my office, email me at: dcogburn@american.edu. I would be delighted to talk with you about the class or about career opportunities in Washington, Geneva, Paris, Bangkok, South Africa or other locations for international or regional organizations.

Expectations

As you may know, I have very high expectations of the participants in this seminar and you should have the same of me. In addition to the demanding seminar sessions, the course requires a minimum of 6-8 hours of outside work per week (e.g., reading, group meetings, writing assignments, online activities). Students that are particularly interested in this subject, and are considering doctoral programs, or other research careers, should explore with me opportunities to get involved with the research center I direct (http://aseanidpp.org/).

This syllabus serves as an informal "learning contract," and will govern activities in the seminar. However, before finalizing the syllabus, I allow suggestions to be made on improvement. After the "final" syllabus is posted, both students and the professor are bound by the contents therein (we can collectively agree to modify the syllabus during the course of the semester by mutual consent). As such, all participants are expected to complete the required reading and case assignments for each session prior to that session, to actively participate in all activities of the seminar, including the web-based discussions on Blackboard (which are also required). The code of academic conduct at American University and the School of International Service will be strictly enforced. All late submissions receive an automatic 10% reduction per day past the specified due date.

Academic Integrity

Standards of academic conduct are set forth in the University's Academic Integrity Code. By registering, you have acknowledged your awareness of the Academic Integrity Code, and you are obliged to become familiar with your rights and responsibilities as defined by the Code. Violations of the Academic Integrity Code will not be treated lightly, and disciplinary actions will be taken should such violations occur. Please see me if your have any questions about the academic violations described in the Code in general or as they relate to particular requirements for this course. I encourage you to familiarize yourself with the AIC code found at http://www.american.edu/provost/registrar/regulations/reg80.cfm

Student with Disabilities

It is the policy and practice of American University to comply with the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and District of Columbia requirements regarding students and applicants with disabilities. Under these laws, no qualified individual with a disability shall be denied access to or participation in the services, programs, and activities of The American University. If you are a qualified AU student with a documented disability whether undergraduate or graduate, in a degree program or non-degree, enrolled in credit or noncredit courses you are eligible for services through Disability Support Services (http://www.american.edu/ocl/dss/). As defined by the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, a qualified person with a disability means a person who meets the essential eligibility requirements of the academic program or service and is able to perform the essential requirements of the academic program or service, with or without reasonable accommodation. A person with a disability is one who (a) has a physical or mental impairment which substantially limits one or more major life activities, (b) has a record of such an impairment, or (c) is regarded as having such an impairment. Information and records about any disability you may have and any accommodations made for you are treated as confidential information under applicable federal and state laws, as well as university policies, and are only provided to individuals on a need-to-know basis. For more information, see: http://www.american.edu/ocl/dss/For-Students-Eligibility.cfm.