

Graduate Council Minutes

September 9, 2016

Attendance: Tim Anderson, Ian Armstrong, Steve Bergmeier, Terry Cluse-Tolar, Cat Cutcher for Bose Maposa, Geoff Dabelko, Sonsoles De Lacalle, Andrea Frohne, Jennifer Horner, Janet Hulm, Chulho Jung, Krisanna Machtmes, Brian McCarthy, Jody Lamb, Maria Modayil, Greg Newton, Shawn Ostermann, Ann Paulins, Erik Ramsey, Anirudh Ruhil, Joseph Shields, Gaurav Sinha, Spencer Smith, Gursel Suer, and Katherine Tadlock.

Excused: Emilia Alonso-Sameno, Alex Hibbitt, David Koonce, Bose Maposa, Chris Moberg, and Scott Smith.

Guests: Krista McCallum-Beatty (Director, International Student and Faculty Services)

Convened: The meeting was convened at 3:05 pm.

1. Approval of Minutes of the April 29, 2016 meeting

The minutes of the April 29, 2016 meeting were approved.

2. Discussion of new federal guidelines for I-20s (Krista McCallum-Beatty)

Katie informed members that over the summer the Graduate College began working on clarifying the new guidelines for our admissions policies. Per the new guidelines an I-20 (certificate of eligibility issued to an international student that allows them to apply for a student visa to come to the United States of America) can only be issued for unconditional admission. This means that a graduate I-20 cannot be issued for students who would be admitted on Academic or English conditional status. Katie added that parts of the catalog that refer to these admission policies are now obsolete. She referred to the handout (Appendix A) in the packet and some new suggested guidelines (Appendix B) to broaden the scope of unconditional admission. Krista said that this policy has an impact on students who were being admitted to graduate programs, but were tested upon arrival. She clarified that it will no longer be possible to issue a graduate I-20 for those students as well. Those students will either have to demonstrate English proficiency and then receive a graduate I-20, or, they will need to be admitted to OPIE and arrive on a language training I-20. In response to a question from Steve about current students, Krista said that the new policy does impact them and the status of students who are caught in this will be reviewed. She added that departments will hear from her about requests for reduced course loads for some of these students. Some students might have to be switched to language training I-20s as well. Andrea asked about the impact on funding opportunities for students. Katie said that since students had to be unconditionally admitted to be eligible to receive any kind of university funding, so this policy does not have any bearing on that aspect. Krista said that the admission categories will need to be revised. She added that the English Provisional (EP) admission category will stay the same. And, that the students who would have been admitted on English Conditional admission status would be treated the same as EP admits.

Katie said that the students who were being admitted on Academic Conditional status are a little hard to accommodate. She said that these will need to be handled case-by-case by the academic program. She added that we are not able to bring international students to campus on a non-degree I-20. Krista said that each year she has to report to the federal government a list of programs for which we admit graduate students. And, so far, institutionally, we have not been interested in having international students come to campus on non-degree status, unless they were a part of an exchange program. She added that she has begun the conversation and has been told that it can take 10-12 months to have new programs approved. Since non-degree I-20 is not an option for international students, so it will require some creativity to help them fulfil the deficiency or requirements so that they can be admitted unconditionally. Katie said that the requirements can be met at other accredited universities as well. She recommended that it would be best if we did not admit students unconditionally who might not be successful in graduate programs. Krista said that students on an F2 visa (dependent of an F1 visa) can be enrolled in classes part-time. They are not eligible for employment.

Steve requested the Recruitment and Admissions and Requirements committee to review the proposal and bring some recommendations to the next meeting.

3. Optional/Curricular Practical Training (Krista McCallum-Beatty)

Krista told members that many members are used to seeing the Optional Practical Training (OPT) and Curricular Practical Training (CPT) forms. She explained that there have been a couple of situations where students have been close to losing their eligibility to work because these forms being signed prematurely. She recommended that the forms be signed by graduate or department chairs or someone who is familiar with the graduation and degree requirements. She said that she has presented similar information to the Assistant Deans Council as well for the undergraduate students. Krista clarified that a student can be on an OPT only if he/she has completed all the requirements except for defending the thesis or dissertation. She said that a student is eligible for a CPT only if it is an internship is required to complete the program and earn the degree being pursued. Shawn said that they have had students who needed access to resources not available at Ohio University, so they needed to spend time in a laboratory at another institution to complete the research for their degree. In cases like this, a student would not be able to graduate without that research. Krista said that a CPT allows a student in such a situation to complete the degree requirements. Shawn said that he would like to see all requests for CPT and OPT for students in his college. Krista said that she would prefer if the same process is adopted across all colleges.

4. Chair's report (Steve Bergmeier)

Steve welcomed everyone to a new academic year on Graduate Council. He introduced the new members. Erik has come back for a second three-year term. Scott and Alex could not be at the meeting today. Greg is the representative of the Scripps College of Communication. Ian, Maria and Spencer are the GSS representatives for this year. He asked all members (new and continuing) to inform him about their committee membership preferences. He described the roles of the various committees. The Recruitment and Admissions requirement committee (chair: Gursel) reviews issues pertaining to graduate admissions and conflict of interest cases

for employees seeking graduate education. Curriculum committee (chair: Tim) acts as a bridge committee with the UCC, it reviews new programs, seven year reviews, and changes to existing programs. The Graduate Student Affairs and Fellowships committee (chair: Jody) reviews the nominees for named fellowships, Council of Graduate Schools and Midwestern Association of Graduate Schools dissertation and thesis awards. The Planning and Strategy committee (chair: Krisanna) covers broader issues pertaining to graduate education. The Policies and Regulations committee (chair: open) reviews current policies and suggests updates as needed.

5. Remarks by Joe Shields, Dean of the Graduate College

Joe said that a recent article in The Athens Messenger noted that 24,000 students are enrolled on the Athens campus. Joe said that the actual number is somewhere between 21,000 and 22,000. He said that out of the 5,000 graduate students only about half are on campus. All graduate students are designated as Athens campus students. He added that he has talked to Craig Cornell to change the reporting mechanism to allow graduate students to be designated as on-campus and online students; just like the undergraduate students.

6. Remarks by Katie Tadlock, Assistant Dean of the Graduate College

Katie said that she met with Deb Benton (Registrar) and Dusty Kilgour (Director, Event Services) this morning about the upcoming fall commencement ceremony. Joe said that he has had unhappiness conveyed to him about the requirement for students who graduate in the fall semester being required to participate in the fall commencement ceremony. Katie said that the decision was made by a committee appointed by the President. And, one of the reasons for having a fall commencement was because we have outgrown the facilities. She said that the handout in today's packet, (Appendix C) lists some questions for discussion.

Shawn said that these are two different issues. He added that we should let students who want to defer participation to a future term (within reason) do so. And, the ones who do not meet the requirements but request participation need a different kind of review. Joe expressed his agreement. Katie said that departments should send enquiries from Master's students about deferring participation to Event Services.

Steve requested the Planning and Strategy committee to review the discussion questions and bring forth some recommendations for the council as a whole.

7. Report from the Curriculum Committee

Seven year reviews: Tim said that if we do not comment on the program reviews for Interdisciplinary Arts, Media Arts and Studies, and Music; we would lose the opportunity to do so. He said that all the reviews were favorable, the programs were designated as viable and thus recommended for continuation. He added that, he was, however concerned about a comment in the review for Interdisciplinary Arts about the lack of diversity and collegiality. Last year concerns were expressed in the reviews for English and Communication Studies. Ani said that it behooves us to comment on such things. He added that as a graduate student

he would like to know that he would not be penalized for changing committee members. Sonsoles said that the document for Interdisciplinary Arts includes a letter from Elizabeth Sayrs acknowledging the issue and noting that it will be addressed. Tim said that the discussions in Graduate Council have addressed the fact that by the time the review comes to Graduate Council, it is rather late in the process for any input. Shawn said that he agrees with Tim and that a large part of these reviews is focused on undergraduate education. But, when faculty do not work well together, it has an adverse impact on students.

Tim said that it is good that the comment in the review about Interdisciplinary Arts about female faculty being undervalued and not treated equally is noted, but is there an action that we can take? Andrea said that the issue about gender and equity has been reviewed by multiple units on campus, but she is not sure if there is a clear plan to address it. She added that at this time the faculty relationships have not had an affected the students. Members discussed that it would be a good idea to include a statement about asking for an update in two years regarding the actions being taken to address the issue. Jody said that he spoke with Elizabeth Sayrs this morning, she is aware of the problem. He said that they have spoken to Legal Affairs and there have been no Title IX violations. He added that Elizabeth is committed to addressing this and it would be nice to have an update from her. In response to a question from Tim, Andrea said that mediation has already been done. Jen said that it seems like in this case a statement about this issue should be a part of David's summary.

Global Health: Sonsoles said that Kelly Broughton said that she would like to hear from Graduate Council before advancing the proposal Masters of Global Health further. She added that all the letters of support are from the college of Health Sciences and Professions, but Gillian is a faculty in the Heritage College of Medicine. Sonsoles said that she would like to see a letter of support from HCOM as well. Jen said that there is an agreement between the two deans, and that other issues regarding the overlap with public health and the proposer's name have already been resolved.

8. Discussion on voting by email

Steve said that this came about through conversations with David Koonce over the summer. He said that last year due to not having a quorum, Graduate Council was not able to make decisions. He said that in the case that there isn't a quorum to make a decision, an email vote can be considered. Gursel said that discussion about an issue is important. Steve acknowledged the value of discussion and clarified that the proposal is not to eliminate the discussion or to have discussion via email. Shawn recommended using Qualtrics instead of email for voting purposes. Jen said that it would be best to write some policy about this. Joe said that CCGS has moved to voting by email for non-controversial items.

9. Graduate Student contributions to STRS

Steve said an academic department contacted him with this question. If graduate students contribute to STRS, the department match can be an issue for those without a large budget.

Steve requested the Planning and Strategy committee to review this issue and provide some recommendations.

10. New Business

Sonsoles brought members attention to the handout in today's packet (Appendix D). This is the proposal for a new course which would serve as one of the potential electives for the TBS program. She said that this course will fill a gap that has been identified and will also be one of the courses required for the Bio-Ethics certificate coming in the future. She requested members to share this with their units. Sonsoles said that the class will be open to all students regardless of their department.

Krisanna mentioned that she would like to share this with her colleagues on the Data Quantitative Work Group, Drs. Robert Vigo and Michael Burton. The group is working under the guidance of Dr. Robert Frank.

Steve requested the curriculum committee to review and make a recommendation whether they approve it or not.

Gursel asked if the proposal submitted by Chris Fisher (in April 2016, about lowering English proficiency requirements for students applying to the Music Certificate program) should be reviewed in the light of the new federal guidelines for issuing I-20s. Katie said that one of the discussion questions for the committee in the handout (Appendix A) pertains to this issue.

The meeting was adjourned at 4:46 pm.

Appendix A

Graduate Catalog Admission Modifications for Federal Guideline Compliance

Issue: Certificates of Eligibility for a graduate degree-seeking I-20 can only be issued if the student fully meets all admission conditions (unconditional admission). This impacts all international applicants who require a Certificate of Eligibility to enroll as a student.

- We cannot issue a graduate **degree-seeking I-20** to any international student admitted under academic conditional status or English Language conditional status.
- International students who need an I-20 but have not demonstrated English proficiency sufficient for unconditional admission can only be admitted under a **language training I-20**. They must submit a separate application to OPIE. They can be processed as an EP admission.

Students with English Language Conditional Admission Status:

Students who were issued a **graduate degree I-20** in English Language Conditional status:

- If English language placement recommendation is for nine or more hours of graduate academic study, student remains on existing **degree I-20**.
- If English language placement recommendation is for more than nine hours of language study, student is being changed to a **language training I-20**. Supplemental/concurrent undergraduate registration remains an option. Limited graduate-level registration may be available through a short-term non-degree concurrent graduate status with departmental approval. Student will need to submit a non-degree graduate application.

Students who were issued a **language training I-20** with an EP + OPIE admission or just an OPIE admission:

- Current EP admit: If English language placement recommendation is for nine or more hours of graduate academic study, the department can request that the student be moved to unconditional admission status. If the request is approved, the student can be moved to graduate admission and a **graduate I-20** can be issued. Alternately, student could apply for limited non-degree status to take graduate-level coursework concurrent with additional English language courses.
- OPIE admit: Student studying in OPIE who does not have an EP admit could apply for limited non-degree graduate status under the **language training I-20**. In exceptional cases, the student could apply for graduate degree admission, but issuance of a **graduate I-20** may require a waiver request process for unconditional admission.

Students who deferred their fall admission or have applied for spring 2017 or beyond must be fully admissible in order to issue a **graduate I-20**. If they are not, they must apply to OPIE and be issued a **language training I-20**.

Policy Revision Proposals, English Language Proficiency

English Language Proficiency for an Initial Admission:

Test upon arrival is no longer possible under a **graduate I-20**. Any student who needs a **graduate I-20** will need to submit official English proficiency test scores as part of the application/admission process.

Modify the English Language Proficiency requirements to allow for unconditional admission for students who have test scores that qualify them for full-time (9 credit hours) academic study at the graduate level. Any English language training (OPIE or ELIP) would be concurrent and supplemental to academic study.

Test	Current Requirement	Modified Requirement
Paper TOEFL	≥ 550 plus any composition score	> 524 plus Composition score ≥ 40 or 3B (campus composition score)
iBT	≥ 80 plus any composition score	>70 plus Composition score ≥ 17
IELTS (academic)	≥ 6.5 across all bands	≥ 6 across all bands

Test upon arrival possible only through English Provisional admission, separate application to OPIE, and issuance of a **language training I-20**.

Graduate Registration for students with a **language training I-20**:

Students who do not meet proficiency levels for unconditional admission either be admitted under EP status and apply to OPIE or apply directly to OPIE for initial language training. In either circumstance, a **language training I-20** will be issued.

Possibilities/Issues to consider/discuss:

1. Develop an option for limited non-degree graduate registration to run concurrent with English language training (akin to Senior for Graduate Credit) for students on a **language training I-20** who meet the minimum graduate English proficiency total/composite score:

iBT: > 60

IELTS: ≥ 6

Paper TOEFL ≥ 500

2. Can a program/department ask for waiver to admit unconditionally students who have English proficiency scores that fall into the current English Conditional admission range where nine hours of graduate study is possible? Those ranges:

iBT: Between 61-70 plus Composition score ≥ 20

IELTS: ≥ 6 composite plus Composition score ≥ 5.5

Paper TOEFL Between 500-524 plus Composition Score \geq 46 or 4 (campus composition score)

If yes, what needs to be included in a waiver request - Test scores? OPIE instructor assessments?

Can students grade out of OPIE into unconditional status or must they have a minimum test score?

Are there institutional time limits on the number of semesters a student can remain on a **language training I-20**?

Academic Conditional Admission

Ohio University cannot issue a **graduate I-20** until the student is fully qualified for unconditional admission. need to qualify for unconditional admission status.

Options for handling students not ready for unconditional admission:

- Admit as an undergraduate student to take a set of prescribed courses.
- Advise the student about recommended prerequisites and let them complete those from their current location or on-line through any US regionally accredited university or any international governmentally accredited university.
- Admit the student to non-degree graduate status at Ohio University for a limited period of time.¹

¹ Ohio University is currently authorized to issue I-20s only to degree-seeking and a couple of non-degree certificate programs. A request to broaden that authority is being prepared, it may be up to a year before we have any updates from the federal level.

Appendix B

Admission Status Levels for Graduate Study at Ohio University

Ohio University graduate students studying on a visa have two admission status levels options: Unconditional or English Provisional. Students with Unconditional admission status have no conditions for their admission, and are issued a graduate I-20, are eligible for funding, and can take full-time graduate student course loads. Students studying at the English Provisional level do not have graduate admission, are not eligible for funding, cannot take graduate-level coursework, and study on a language training I-20. Students must submit official test scores (institutional TOEFL, iBT, or IELTS) that meet the requirements for unconditional admission before a graduate I-20 can be issued. Students are advised to submit test scores with their admission packet. Students who come to Ohio University and test on arrival will only be issued a language training I-20 and no funding offers can be made. A graduate I-20 can then be issued if test scores consistent with unconditional admission are obtained and per department discretion.

		Institutional TOEFL & Composition		OR	iBT		OR	IELTS		Coursework	
		Total	Comp.	Total	Writing	Total	Writing				
Unconditional Admission - some programs may have higher numbers											
Unconditional		≥ 550	any	≥ 80	any	≥ 6.5 on all bands	any	Academic & Professional Communication courses available to interested students (http://ohio.edu/cas/ELIP)			
	Unconditional Admission with Academic & Professional Communication coursework in ELIP (http://ohio.edu/cas/ELIP)										
	525-549	≥ 5	71-79	≥ 20	≥ 6 on all bands	≥ 6	1 course in Academic & Professional Communication, up to 15 hours of Discipline-Specific Classes				
	3B-4		17-19		N/A	2 courses in Academic & Professional Communication, up to 12 hours of Discipline-Specific Classes					
English Provisional with the Ohio Program of Intensive English, OPIE (http://linguistics.ohio.edu/opie/)											
Provisional	525-549	< 3B	71-79	< 17	≥ 6 composite	any	OPIE 12 hours + 6 Hours of undergraduate academic classes				
	500-524	any	61-70	any	< 6		Full-time English courses in OPIE only				
	< 500		< 71								

For questions, please contact: Dawn Bikowski in ELIP (740-593-4564, bikowski@ohio.edu), the Graduate College (740-593-2800, graduate@ohio.edu), or the Ohio Program of Intensive English (740-593-4575, opie@ohio.edu).
Sept. 2016

Appendix C

Commencement Ceremony Participation

From the Registrar's Page

- At the close of spring semester, Ohio University holds one graduate commencement ceremony, two undergraduate commencement ceremonies, and one annual medical commencement ceremony.

To be eligible to participate in spring commencement, have your name listed in the commencement program, and purchase a cap and gown, you must have filed a valid graduation application for the spring semester. If you will complete your degree requirements in the summer semester following the spring commencement ceremony, then you may make an application for graduation in spring indicating you will complete your degree in summer.

- At the close of fall semester, Ohio University holds one combined undergraduate and graduate commencement ceremony.

To be eligible to participate in fall commencement, have your name listed in the commencement program, and purchase a cap and gown, you must have already been awarded your degree the preceding summer semester or have filed a valid graduation application for the fall semester.

Graduate Council's Participation Waiver Policy for Doctoral Students:

Students must meet the stated deadlines for graduation during the spring term in order to go participate in the commencement doctoral hooding ceremony. Exceptions to this rule will be approved in limited cases when students fail to meet the requisite deadlines for spring graduation due to extenuating circumstances. To be granted an exception, the student must successfully defend their dissertation and file a final version of the document by the Friday prior to Graduate Commencement Ceremonies. Requests for an exception should explain the extenuating circumstances and should be submitted by the dissertation advisor with the endorsement of the program Graduate Chair and Dean of the academic college. The endorsement should indicate that the student is on track to meet all requirements for the degree no later than the end of the summer term. Students granted an exception will not have their name in the commencement program and will not receive their degree until all requirements are completed.

Exception endorsements from the academic college must be received by the Assistant Dean of the Graduate College (Katherine Tadlock) no later than 5 pm on the Friday prior to Graduate Commencement Ceremonies.

Questions for discussion:

Should the same exception process apply to spring graduates who want to walk in the fall prior to their actual degree conferral?

Is there a calendar date by which a summer (or spring) grad needs to be done to be granted a waiver for spring (or fall) participation rather than participate in the fall with other summer grads (spring with spring grads)?

What about students who want to defer participation until a term after they actually graduate? Can a fall graduate defer to the subsequent spring, or a spring grad defer to the next fall? Under what circumstances?



Appendix D

Syllabus: Data Analytics for Translational Biomedical Sciences

Instructor: Sebastián R. Díaz, Ph.D., J.D.

Department of Family Medicine, Ohio University Heritage College of Osteopathic Medicine

Overview

This document serves as the syllabus for a proposed course titled, Data Analytics for Translational Biomedical Sciences. The course is designed to provide students in the translational biomedical sciences and related disciplines an overview of the impact of data analytics on decision-making and related research.

The syllabus begins with a description of the context explaining the need for such a course. The second section of the syllabus provides an overview of activities in this project-based course. The third section of the syllabus then explains how student performance in this course is evaluated.

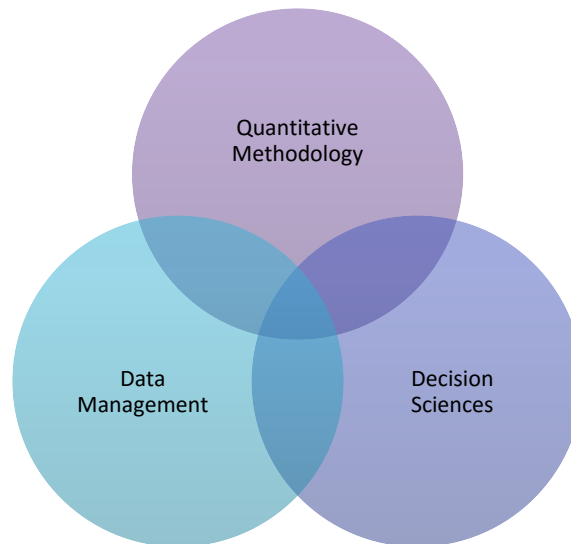
Context

Continued advances in computation, data utilization, and quantitative and qualitative methodologies are creating a perfect storm of factors propelling analytics to the forefront of all disciplines. Given the emerging data revolution, many disciplines are now experiencing an urgent need to prepare professionals who can optimize data for decision-making, strategic planning, and research.

Admittedly, the conventional academic format for this course limits the ability of students to apply what they learn in class to their actual work. Regardless, this course attempts to create an applied learning environment in which students gain experience in analyzing not only esoteric data, but also real-world data that they acquire from a colleague and/or client.

There are many domains germane to data analytics. As data analytics programs emerge throughout American universities, they eventually reside in a wide range of disciplines. One of the unique aspects of data analytics is that it is an area of study that transcends the bounds of traditional disciplines in academia. Students must therefore embrace an inter-professional mindset when learning about data analytics. By necessity students in data analytics must explore concepts germane to the computational sciences, business consulting, education, as well as the humanities, social sciences and biomedical sciences.

The scope of this analytics course will focus primarily on three diverse perspectives:



Quantitative Data Analysis

Methodologies that borrow heavily from statistics and other quantitative disciplines will be a primary focus of this course. Students will explore the foundational principles of how scales of measurement are used to structure quantitative data. Students will then review basic descriptive statistics, with a particular emphasis on how they can be leveraged to inform practice. Naturally students will also explore a variety of inferential statistics methods, while balancing these null-hypothesis-testing (NHT) approaches with exploratory data analysis (i.e. data mining) techniques.

Decision Sciences

In order to understand fully the impact of data analytics, students will explore how stakeholders internal and external to the translational biomedical sciences understand, perceive and utilize data. In an effort to help students develop the skills necessary to communicate research findings to a diverse breadth of stakeholders, this course balances skills in quantitative data analysis with complementary skills in how those analyses are best communicated to others in order to promote action. While it is impossible in a course of this scope to fully prepare students to become experts in decision sciences, this course will engender in students skills in data visualization.

Moreover, this course is designed to help students embrace the complexity inherent in decision-making based upon the available body of research. Recognizing that translational biomedical sciences present ethical as well as technical challenges, course activities are designed to teach students how data can be used to support opposing views on a particular issue germane to bioethics.

Data Management

Graduate students in the translational biomedical sciences today will be confronted upon graduation with heightened expectations for data management as compared to predecessors. Advances in computation and database management will eventually translate into expectations for increased sample sizes in scientific research, along with more sophisticated analytics. For that reason, this course also focuses on developing within students a firm understanding of how data need to be architected in order to optimize their scientific research.

Course Activities

The activities in this course will ideally prepare students to be effective consumers of data, information and knowledge within the translational biomedical sciences.

Course Objectives

As a result of successfully completing this course, students will be able to:

- compare and contrast how scales of measurement for quantitative data affect data storage, data analysis, and data interpretation;
- leverage basic descriptive statistics and the principles of a normal distribution to inform research;
- structure data electronically in a variety of electronic formats so that it can be shared and analyzed among multiple statistical and data visualization software;
- create dashboards that allow stakeholders to easily recognize patterns in data that inform their particular needs for decision-making, strategic planning, or research;
- use data visualization and statistical software to extract meaningful and impactful trends from the data;
- compare and contrast how diverse stakeholders utilize data, and tailor the respective analyses and reports to better address their unique needs, and;
- identify and highlight how data can be used to inform resolution of ethical dilemmas endemic to translational biomedical sciences.

Required Texts

- *Discovering Statistics Using SPSS (4th Ed.)*. (2013). Author: Andy Field. ISBN: 978-1-4462-4918-5.
- *Data Fluency: Empowering your Organization with Effective Data Communication*. (2014). Authors: Zach Gemignani; Chris Gemignani; Richard Galentino; Patrick Schuermann. ISBN: 978-1-118-85101-2.
- *The Field Guide to Data Science*. (2015). Booz | Allen | Hamilton. Instructor will provide as free PDF.

Required Software

- R (including RStudio & Rattle) – Freeware may be downloaded at: <https://www.r-project.org>

- SPSS (May be purchased via Bobcat Depot)
- Microsoft Office Excel
- Tableau – Freeware for full-time students may be downloaded at:
<http://www.tableau.com/about/blog/2013/3/tableau-students-free-access-tableau-desktop-21617>

Course Activities...ctd.

Overview of Semester Activities

The table below summarizes semester activities for this course. Please note that with the exception of the first week, reading and homework assignments should be completed before coming to class. By contrast, group exercises will occur *during* class for the particular week listed.

Week	Reading Assignment	Homework Assignment	Classroom Group Work	Evaluation
1	Gemignani Text Chps. 1-2; Field Text Chps. 1-2	Download all Freeware (R, RStudio, Rattle, Tableau); Download Health Data	Using Appropriate Statistical Methods Exercise	
2	Gemignani Text Chps. 3-5; Field Text Chps. 3 & 5	Submit Signed Contract with Client	Descriptive Statistical Analysis of Health Data	
3	Gemignani Text Chps. 6-8; Field Text Chps. 7 & 8	Client Report Section I: Description of Variables	Health Data: Inferential Regression Analysis	Quiz 1
4	http://www.theatlantic.com/past/docs/issues/95dec/chilearn/drucker.htm		Health Data: Tableau Bar Graphs	
5	Field Chapter 9		Health Data: Comparing Means	Quiz 2
6	Booz-Allen-Hamilton Pgs. 1-45		Health Data: Tableau Mapping	
7	Field Chapter 11	Client Report Section II: Methodology	Health Data: Analysis of Variance	Midterm Examination
8	Booz-Allen-Hamilton Pgs. 46-83		Health Data: Tableau Calculations Function	Peer Feedback on Client Reports
9	Field Chapter 13		Health Data: Factorial Analysis of Variance	Quiz 3
10	Booz-Allen-Hamilton Pgs. 84-117	Client Report Section III: Results	Health Data: Tableau Dashboards	
11	Field Chapter 12		Health Data: Exploring Covariates (ANCOVA)	Quiz 4
12	CHAID Analysis Reading (TBD)	Client Report Section IV: Recommendations	Health Data: CHAID and Random Forests	Final Examination
13		Classroom Presentations		
14		Classroom Presentations	Final Reports Due	Course Evaluation

Please note the following:

1. Reading assignments for this class are substantial. Regardless, given the interdisciplinary nature of data analytics, it is important that students develop a sensitivity to the diverse perspectives that inform data analytics within organizations. For that reason, students will be responsible for a lot of reading outside of class.
2. This course depends heavily upon participatory group work in the classroom. For that reason, it is imperative that students not only show up to class sessions, but that they also be engaged with their fellow

group members during class. It has been my experience throughout my years of teaching that students who regularly attend class and remain engaged in classroom activities tend to perform better.

3. Homework assignments refer to a client report. This is a practical exercise in which the student will analyze data for a real-world client. At the beginning of the semester, the student will negotiate with a client (e.g. a supervisor, colleague) to define a data project the student will execute throughout the semester. Students will be expected to provide at semester's end a report to their client that informs real-world decision-making, strategic planning, or research. Throughout the semester the student will build upon a report that will be submitted to both the instructor and the client at the end of the semester. For that reason, the report is assigned in Sections that build upon one another as the student progresses through the course. Furthermore, students will present the findings of the report to fellow class members in weeks 13 and 14 of the course.
4. Classroom group work refers to *Health Data*. In addition to analyzing data for their particular client, students will also work with publicly available health data throughout the semester in order to practice the statistical and data visualization techniques explored in class. While understanding that some students enrolled in this course may work in a discipline outside of healthcare, the course will focus particularly on healthcare data in order to allow collaboration among students. One nice feature of healthcare data is that regardless of our respective discipline or profession, we all are concerned with health, and can therefore relate to it easily.

A Note on Bioethics

Quantitative data represent a complex language of symbol systems that can be leveraged in ways every bit as complex as the English language. For that reason, students will be expected to recognize and embrace the complexity of data analytics. Much as one might reasonably expect opposing yet equally compelling arguments for or against a particular social policy (e.g. school-choice, regulation of GMO foods, etc.), the same type of complexity and uncertainty should be expected of data analytics. At the risk of sounding trite, it is important for students to remind themselves that data only *drive* decision-making, yet they don't actually *make* the decision for you.

To help students embrace and become comfortable with this complexity and uncertainty, Bioethics issues will be integrated throughout the curriculum, particularly in weekly group exercises. Students will be presented with challenging dilemmas of Bioethics, and will be expected to use the data to help resolve them. Recognizing that translational biomedical sciences integrate objective and subjective scientific data, students will be expected to use the data accordingly when supporting a particular approach to decision-making (e.g. at what point do population health initiatives infringe upon cultural values?).

Course Evaluation

The following table illustrates how the final course grade for each student will be computed. Note that the final examination and final project and presentation will each represent a fourth of the final course grade. The four quizzes administered throughout the semester together will represent an additional fourth of the final course grade. The midterm examination accounts for 12.5% of the students' final course grades. Finally, please note that peer evaluations will be conducted throughout the semester, and these will account for 12.5% of students' final course grades.

Evaluation Element	% of Final Course Grade
Peer Evaluations	12.500%
Quiz 1	6.250%
Quiz 2	6.250%
Quiz 3	6.250%
Quiz 4	6.250%
Midterm Examination	12.500%
Final Examination	25.000%
Final Project & Presentation	25.000%
Total	100.000%

Academic dishonesty will result in the student learning a failing grade for the course.

The following guidelines will be used by the instructor to determine the final letter grade for the course:

- 90% - 100% A+ to A-
- 80% - 89% B+ to B-
- 70% - 79% C+ to C-
- 60% - 69% D+ to D-
- <60% F

The instructor reserves the right to adjust the scale above to be more lenient for determination of final course grades. However, the same is not true for adjusting the scale to be more difficult than what is listed above.