Memo

September 30, 2014

To: General Education Committee

Re: IDS 4930: Understanding People and Data

Understanding Data (listed as IDS 4930) was selected in Spring 2014 as one of two inaugural Grand Challenge courses. The course and syllabus have gone through a number of changes since they were first developed and presented to the General Education Committee. In late Spring 2014, a working committee was created to develop and pilot the course. The working committee consisted of the original team, which represented three colleges (Education, Journalism, and CALS), as well as the addition of representatives from CLAS and two members of the General Education committee. The course development committee was:

Dr. M. David Miller (Lead Instructor), School of Human Development and Organizational Studies in Education (Education)

Dr. Norman Lewis, Department of Journalism (Journalism and Communication)

Dr. Nicole Stedman, Department of Agricultural Education and Communication (CALS)

Dr. Michael Martinez, Department of Political Science (CLAS)

Dr. Tanya Koropeckyj-Cox, Department of Sociology and Criminology & Law (CLAS – General Education Committee)

Dr. Suzanne Colvin, School of Teaching and Learning (Education – General Education Committee)

The syllabus development in summer 2014 evolved from the original proposal to more clearly establish the course's focus on the social sciences as well as methods and data. A basic aim of the course is to teach students critical thinking in the context of social science research and understanding data. The focal point of the course is a signature project in which students work collaboratively to develop a social science research question and conduct basic data analyses that address an important, contemporary issue. Students start by identifying and developing a question, then reviewing the empirical literature and analyzing data to address the question. During the semester, both lectures and interim assignments build students' skills and the knowledge base to be critical consumers and analysts of social science data. Students are evaluated based upon critical thinking, originality and creativity, demonstration of scientific and quantitative thinking or analysis, and style of communication.

The first few weeks of the course were altered to introduce key themes, principles, theoretical approaches and terminology of the social sciences, drawing upon the expertise of the multi-disciplinary teaching team. This includes an introduction to the scientific method as it is used in the social sciences, as well as the concepts of inductive and deductive approaches, hypothesis development and testing, critical thinking, and learning how to find and critique sources. The course then introduces various approaches, sources of data and methods as well as ethical concerns related to social science research and data collection and analysis. The concluding weeks focus on a critical discussion of the uses and

misuses of social science data, discussion of social networks, and the presentation and critique of data in journalism.

In Fall 2014, the committee (without Dr. Colvin who had provided input into the syllabus as a member of the General Education committee; Dr. Koropeckyj-Cox was added to the instructional faculty after representing the General Education committee) offered a pilot of the course. The course materials are posted on Canvas. In addition to the book listed in the syllabus, students' weekly required readings include a variety of other readings, mostly available online through Canvas.

The topics and readings for the first three weeks are outlined below.

Week one: What is social science? Why are data important for answering social science questions?

Introduction to the syllabus and structure of the course. Presentation of video interviews with UF professors across different departments and disciplines discussing their research, the importance of social science data, and questions and concerns that motivate these faculty in their research.

- *The Elements of Social Science Thinking,* "Thinking Scientifically," Chapter 1

Week two: Current social science questions

Introduction to the scientific method and how it is used in the social sciences. Introduction to some of the major theories used in sociology. Discussion of inductive and deductive approaches, and how one moves from concepts to theories to hypotheses in thinking about social science questions.

- *The Elements of Social Science Thinking,* "The Elements of Science" and "Strategies," Chapters 2 & 3
- W.C. Booth, G.G. Colomb, and J.M. Williams. 2009. "From Problems to Sources." The Craft of Research. University of Chicago Press. (full text of 3rd edition available from UF Libraries)

Discussion Topics – Teen Pregnancy and Gender Pay Gap (students choose one topic below, complete the readings, and come prepared for discussion)

Teen Pregnancy

- "MTV's '16 and Pregnant,' Derided by Some, May Resonate as a Cautionary Tale." (Links to an external site.)*New York Times*
- "The historic and uneven decline in teen births." (Links to an external site.)*Washington Post* (Links to an external site.)
- CDC features -- teen pregnancy trends and disparities (Links to an external site.)

Gender Pay Gap

- Pew Research Center article on gender pay gap (Links to an external site.)
- Pay Gap is about gender not jobs (Links to an external site.)
- A grand gender convergence. (Links to an external site.)*American Economic Review*

Week three: What does it mean to be a critical thinker?

Introduction to the elements of critical thinking and how these are used and applied in approaching social science questions. Discussion of "Big Data" – its potential as well as the concerns raised for social research.

- L. Elder and R. Paul. 2004. Becoming a Critic of Your Thinking. Adapted from The Thinker's Guide to the Art of Strategic Thinking: 25 Weeks to Better Thinking and Better Living. http://www.criticalthinking.org/pages/becoming-a-critic-of-your-thinking/478
- J. Shaw. 2014. "Why Big Data." Harvard Magazine.
- R. B. Johnson and L. Christensen. 2013. "Quantitative, Qualitative, and Mixed Research." Chapter 2 in Educational Research: Quantitative, Qualitative, and Mixed Approaches, 5th edition. Sage Publications.

Subsequent weeks cover samples and populations (with guest speaker Chris McCarty of the UF Survey Research Center), Uses of Big Data, ethics of data collection and use, assessing quality of social science data, and accessing data. The remainder of the course covers conducting basic statistical analyses, preparing tables and visual displays of data, developing posters, misuse and correct use of data, social networks and social research, and writing about social science data. The course culminates with the students' presentations and critiques of their group poster projects.

The course currently is currently being offered as IDS 4930 – An Informed Life: People and Data. It has enrolled 9 students who have developed initial proposals for three collaborative projects:

- the relationship between teen pregnancy and geographic location,
- social media and growing a work force, and
- the consequences of parental divorce on the behavior and development of children.

As this course is further developed in future semesters, we expect that the topics and disciplinary approaches will vary with the backgrounds and interests of the faculty involved. Topics may also change to reflect specific contemporary social debates, allowing for flexibility in particular topics and examples around a core of central concepts, data skills, and critical thinking. The key to the course is that students are learning how to identify important, timely issues in the social sciences and how to address them with data. Rather than focusing on a single Grand Challenge, the course emphasizes the process of identifying Grand Challenges in the social sciences, specifying researchable questions based on the issues, and understanding and using approaches and methods to address the contemporary social science issues. Students are expected to develop the skills to be critical readers of social science news and presentations and effective, critical analysts of basic social science data.

Syllabus: IDS 4930 - Understanding People and Data

Fall 2014, Section 15B1,   Meeting: NRN 205,   Tuesday 3rd – 4th period, Breakout: NRN 2309, Thursday, 3rd period

Lead Instructor: Dr. M. David Miller, College of Human Development and Organizational Studies in Education
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Dr. Norman Lewis, Department of Journalism
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Dr. Michael Martinez, Department of Political Science
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TA: XXX (xxx) Off: xxx
Office Hours: xxx (or by appt.)

COURSE DESCRIPTION
The course introduces students to social science data and the theories, methods, and skills of social research. Drawing on traditional and applied social science disciplines, this course introduces students to basic approaches, methods, and ethical concerns in using data to address contemporary social issues. Students learn to critically assess the uses and misuses of data and explore researchable questions through hands-on, collaborative work.

ABOUT THE COURSE
This faculty team-taught course invites students to collaborate to produce presentations based on a critical analysis of data to address important contemporary social science research questions. The social science research questions are found in the Grand Challenges of our society. Examples of the challenges include: How can a society that defaults to separation embrace diversity?; As our daily lives increasingly become digital and public, how do we set boundaries for how that data is collected, stored, and used?; and How do we encourage an informed and active democratic society?

By approaching the Grand Challenges from a multidisciplinary approach, students will be exposed to perspectives of experts from social science disciplines in liberal arts and sciences (e.g., political science, sociology) as well as applied social scientific work in journalism, education, and the agricultural and life sciences. This multidisciplinary approach encourages the development of critical thinking skills in students by challenging their understanding and beliefs about the world around them.

This course is part of the general education requirements. The general education objective for the Social and Behavioral Sciences that this course is part of is:

> Social and behavioral science courses provide instruction in the history, key themes, principles, terminology, and underlying theory or methodologies used in the social and behavioral sciences. Students will learn to identify, describe and explain social institutions, structures or processes. These courses emphasize the effective application of accepted problem-solving techniques. Students will apply formal and informal qualitative or quantitative analysis to examine the processes and means by which individuals make personal and group decisions, as well as the evaluation of opinions, outcomes or human behavior. Students are expected to assess and analyze ethical perspectives in individual and societal decisions.

PRE-REQUISITES
None

COURSE OBJECTIVES
This course will cover concepts of data literacy and the critical analysis of data in the social sciences to address grand challenges. It is the aim of this course that by the end, students will be able to:
1. Identify the key characteristics of the social sciences and how they differ from other sciences (e.g., physical sciences)
2. Identify key questions and apply critical thinking skills to Grand Challenges in today's society
3. Find, evaluate, and interpret data, methods, and sources, such as public opinion polls, surveys, census data, etc.
4. Evaluate ethical dilemmas associated with the acquisition, analysis and reporting of data, including privacy issues with big data
5. Distinguish between theory and hypothesis; evidence, truth, proof, and claim; correlation and causation; and absolute and relative risk
6. Write critiques of data and data-based reports from sources such as websites, public officials, and media outlets with respect to bias, viewpoint, and perspective
7. Analyze data that address important grand challenge research questions grounded in the social sciences

The General Education Student Learning Outcomes addressed in this course are the following:

Area	Institutional Definition	Institutional SLO
CONTENT	Content is knowledge of the concepts, principles, terminology and methodologies used within the discipline.	Students demonstrate competence in the terminology, concepts, methodologies and theories used within the discipline.
COMMUNICATION	Communication is the development and expression of ideas in written and oral forms.	Students communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to the discipline.
CRITICAL THINKING	Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion.	Students analyze information carefully and logically from multiple perspectives, using discipline specific methods, and develop reasoned solutions to problems.

The Content SLO will be covered through the midterm, content on the final project, and brief quizzes. The communication SLO will be covered through participation in the break out groups, weekly assignments, and the final project. The focus of the final project is on critical thinking. However, critical thinking will be developed throughout the course and will be included in the weekly assignments.

COURSE STRUCTURE
The course will require attending larger sessions led by faculty and breakout sessions led by faculty or TAs. Weekly assignments will be submitted in the breakout sections or online as required. Class meetings will be spent on presentations, group discussion, and exercises relating to the material. In addition, students will work on a semester-long group project, both in and outside of class, that will develop a novel approach to addressing a social science issue. ***Students are required to bring a laptop or other web-enabled device to each class meeting***.

COURSE WEBSITE and COMMUNICATION
The course website will run via **Canvas** through the UF e-learning website; go to http://lss.at.ufl.edu/ and click on the Canvas Login button. The course site will be used to post relevant announcements, reading, lecture materials, links, assignments and quizzes, etc. You are responsible for checking this site for announcements and to verify that your grades are recorded correctly.

COURSE TEXTS
Required text: Donovan, T. & Hoover, K. (2014). *The Elements of Social Scientific Thinking.(ISBN: 978-1-133-60767-0)*

Additional weekly required readings will be available online.

GRADING
There a total of 1000 points available throughout the semester and include both team project assignments and individual assignments and quizzes.

300 points   Weekly assignments include interim work on the collaborative project, online quizzes, participation in discussions, and other assignments.

Project Team Assignments
Each step of the collaborative project in Column A of the schedule (excluding meeting with faculty) will be scored for 10 points each and all steps must be included in your grade. Total points=60.

Individual Assignments
Each of the 14 quizzes and activities in Column B of the schedule will be scored for 20 points. The lowest two scores will be dropped from your grade. Total points=240.

400 points   Collaborative Project (includes presentation on final day of class). Scored as a team.

Final integration of project team assignments described above culminating with a poster presentation.

150 points   Mid-term Exam

150 points   Final Exam

Final Grade Scale
Based on the total score of 1000 points.

A = ≥950,	A- = 900-949	B+ = 870-899	B = 830-869	B- = 800-829	
C+ = 770-799	C = 700-769	D+ = 670-699	D = 630-669	D- = 600-629	E < 600

There will be no 'rounding up', but your participation and eagerness to learn will be used to aid final grade determination in borderline situations. ***Note:** An earned grade of 'C-' grade or below does not qualify for major, minor, Gen Ed, or college basic distribution credit.

For further information on UF's Grading Policy, consult:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Weekly Assignments
Each week, after completing the assigned set of readings, students will complete a weekly activity. The assignment may include interim work on the project, a short essay, a few short answer questions, a quiz, or some combination of these. The grades that you earn for in-class activities will also likely be lower if you do not review the pre-requisite readings before class. The lowest two weekly assignment scores will be dropped from your total. During the course of the semester weekly assignments will build students' skills and the knowledge base needed for critical thinking and communication. Students will be evaluated based upon originality and creativity, demonstration of scientific and quantitative thinking or analysis, and style of communication.

Semester Collaborative Project
The collaborative project will allow students to engage in accepted problem-solving techniques and social science methods including the evaluation of research, opinions, and outcomes as well as the analysis of data. Active learning will occur through the collaborative development of a project to address a key social science issue.

The collaborative project will require the application of formal and informal analyses to examine the researchable question selected. You will also assess and analyze ethical perspectives in individual and social decisions. The culmination of the course will be a presentation of the project. The presentation will allow you to communicate knowledge, thoughts and reasoning clearly and effectively about the collaboratively specified social science issue.

Other examples of grand challenges include:

1. How can we induce people to make behavior changes that are known to have significant health benefits?
2. How do we reduce the "skill gap" between black and white people in America?
3. Why is the average female paid less than the average male, and what should be done about it?
4. How can America reduce poverty?
5. How do we encourage people to break out of like-minded communities and respect ideas different from their own?
6. How do we prepare for the needs of an aging population?

The Collaborative project will allow you to produce and present a poster that uses the content and skills learned in the course. The project will end with presentations on the last week of classes. The collaborative project is described separately below. The project will have you develop a social science research question that addresses a contemporary important issue. Once the question is developed the group will analyze empirical literature and analyze data to begin to address the question. During the course of the semester, both lectures and interim assignments will build students' skills and the knowledge base needed for critical thinking and communication. Students will be evaluated based upon originality and creativity, demonstration of scientific and quantitative thinking or analysis, and style of communication.

EXAMS
Everything associated with the class, including on-line material and in-class discussions and exercises are fair game on the exams. If missed, make-ups for exams will only be given by pre-arrangement or under extraordinary circumstances.

ATTENDANCE AND ABSENCE POLICY
Students are expected to complete all requirements (quizzes, exams, presentation) on the specified dates and will not be granted an alternate date unless they have a documented acceptable reason for their absence (e.g., absences due to medical emergency, observance of religious holidays, military obligation) or pre-arranged consent of the instructor. However, you may receive an extension on an assignment by pre-arranged consent of the instructor or in extraordinary circumstances. These requests must be timely and accompanied by all necessary written documentation. (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx)

CLASSROOM POLICY
Students are encouraged to bring to each class meeting a laptop or similar device for use in taking notes, summarizing in-class activities, and accessing the internet. However, use of mobile devices and computers during class for purposes other than viewing readings or conducting sanctioned research is not allowed. Cell phones and other electronic devices must be silenced during class. Students who receive or make calls or text messages or engage in other disruptive behavior during class will be asked to leave will not be allowed to turn in the assignment due on that day. You should also bring a pen/pencil and paper to each class.

ACADEMIC HONESTY POLICY
Students must conform to UF's academic honesty policy regarding plagiarism and other forms of cheating. This means that on all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."
The university specifically prohibits cheating, plagiarism, misrepresentation, bribery, conspiracy, and fabrication. For more information about the definition of these terms and other aspects of the Honesty Guidelines, see http://www.dso.ufl.edu/sccr/process/student---conduct---honor---code/. All students found to have cheated, plagiarized, or otherwise violated the Honor Code in any assignment for this course will be prosecuted to the full extent of the university honor policy, including judicial action and the sanctions listed in paragraph XI of the Student Conduct Code. For serious violations, you will fail this course.

DISABILITY RESOURCE CENTER
Please do not hesitate to ask for accommodation for a documented disability. Students requesting classroom accommodation must first register with the Dean of Students Office (http://www.dso.ufl.edu/drp/). The Dean of Students Office will provide documentation to the student, who must then provide this documentation to the Instructor when requesting accommodation. Please ask the instructor if you would like any assistance in this process. Please provide this information to your TA within the first two weeks of the semester.

ON-LINE EVALUATION
Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/.

SOFTWARE USE
All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

ADDITIONAL RESOURCES
Students facing difficulties completing the course or who are in need of counseling or urgent help may contact the Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575; or the University Police Department: 392-1111 or 9-1-1 for emergencies.
Other Resources available on-campus for students include:
a. Student Mental Health, Student Health Care Center, 392-1171, personal counseling;
b. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling;
c. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

Schedule of Topics and Assignments:

Week	Large Group Topic	Break Out	Faculty Member	Interim Project Assignments (A)	Other Weekly Assignments (B)
8/26	Course Introduction What is Social Science? Importance of Data and Social Research	Research of TA	Martinez		
9/2	Introduction to Social Scientific Method & Theoretical Perspectives: Concepts, Theory, Hypotheses	Literature Searches Discussion of Selected Specific Social Issues	Koropeckyj-Cox		Quiz In-Class Activity
9/9	What does it mean to be a critical thinker? Methods of Data Collection	Limitations and Strengths of Data Collection Methods	Stedman	Identify Topic	Quiz Locate Articles and Briefly Describe Methods of Data Collection
9/16	Samples and Populations Uses of Big Data	Strengths and Limitations of Sampling Designs	Martinez	Proposal (one page)	Quiz Locate Articles and Briefly Describe Methods of Sampling
9/23	Ethics of Data Collection and Use	Questionable Ethical Situations	Miller	Meet with faculty	Quiz
9/30	Quality of Social Science Data	Evaluating Measurements	Miller	Meet with faculty	Locate Articles and Briefly Describe Methods of Examining Quality of Instruments
10/7	Group Assignment Intro Accessing and Using Data Bases	Running Data Analyses – Univariate	Stedman	Preliminary Literature Review	In class activity conducting analyses
10/14	Midterm	Exam Feedback			
10/21	Analyzing and Interpreting Statistical Bivariate Relationships	Running Data Analyses – Bivariate	Martinez	Data Identified and Analysis Plan Preliminary Literature Review	In class activity conducting analyses
10/28	Tables and Visual Displays of Data	Working with Tables and Graphs	Miller		Quiz
11/4	Presenting Data Developing Posters	Group project Work	Stedman	Rough draft of project materials	
11/11	Veteran's Day - Holiday	Group Project Work			
11/18	Misuse and Correct Use of Data	Group Project Work	Koropeckyj-Cox	Clean draft of materials to create poster	
11/25	Social Research & Social Networks	Thanksgiving Holiday	Lewis		Quiz
12/2	Writing about Social Science Data	Review Blog Entry Draft	Lewis		Blog Entry
12/9	Poster Presentations	Class Ended	All	Poster Presentation	Rate Posters

Collaborative Project

A collaborative project will be the culmination of the course. You will work in groups of 3-4 students to complete the project. The project will be developed throughout the semester with interim due dates for different stages of the project. The project will allow you to show (a) an understanding of key themes, principles and terminology in the social sciences, (b) application of formal and informal analyses to effectively examine the processes and means by which you make decisions, and (c) communication of knowledge, thoughts and reasoning clearly and effectively in a poster presentation.

Stage 1. Identify Topic The project will be based on a research topic identified by the group that is solidly based in the social sciences. The topic should address an important contemporary issue in society; example topics will be discussed in the first two weeks of the course. The topic should meet minimal criteria listed below and should be completed by the end of the third week (see specific dates above). Each group is required to submit a paragraph that includes a discussion of why the topic is an important and complex issue facing society. The topic should go beyond normative statements (e.g., racism is bad) and address an empirical, researchable question (e.g., do racial stereotypes influence hiring decisions?).

Stage 2. Proposal. A one-page, single-spaced proposal is due by the fifth week of the semester (see specific dates above).
- Proposal should include a clear presentation of the research question that would be addressed for the topic
- The proposal should identify what research literature will be explored
- The proposal should identify specific measureable questions that could address the topic
- Identify existing data source(s) to address the research question

Stage 3. Literature Review. A 5-7 page, double-spaced review of relevant literature should be completed by the seventh week of the semester (see specific dates above). The literature review would include the following:
- A minimum of 8 related articles to justify the rationale for the question. The articles need to include at least 5 empirical articles (with qualitative or quantitative data reported) from peer-reviewed journals.
- A critique of the articles addressing issues of research design, measurement, ethics, and sampling
- Summary of the research and a rationale for the study

Stage 4: Data Analysis Plan. You will develop a plan to analyze the data and describe the rationale for the plan (one page, single-space). The plan should include 2-3 testable hypotheses based on the research question developed in stage 2. This will be due on the tenth week of the semester (see specific dates above)

Stage 5: Data Analysis. The data analysis will be completed by the twelfth week of the semester (see specific dates above). You will provide a description of the data analysis, the results and interpretations. Include at least one visual display of the results.

Stage 6: Complete Materials for Poster. The completed materials for the poster should be ready by the thirteenth week and the poster would be completed by the fifteenth week. The completed poster would include the following:
- Title
- Authors
- Date
- Research question(s) and hypotheses
- Rationale for research question(s)
- Literature Review and Critique
- Data Analysis Description
- Data Analysis Results including visual display
- Conclusions and Implications

Stage 7: Poster Presentation. Groups will present their poster on the final week of the class. Students will be expected to answer questions about their poster and critique the posters of other groups using the assigned rubric. The rubric for the assignment is presented below and will be discussed in class.

Poster Rubric (100 points possible * 4 for grade)

	Outstanding (A)	Very Good (B)	Satisfactory (C)	Unsatisfactory (D/E)
Topic, framing	RQ evokes compelling grand challenge through multivariate perspective of a social scientist (10-9 pts)	RQ evokes compelling grand challenge while addressing much of its social complexity (8 pts)	RQ draws from a grand challenge while addressing some of its social complexity (7 pts)	RQ unclear, or evokes a peripheral social challenge, or fails to address its social complexity (6-0 pts)
Literature review and bibliography	5 empirical research articles plus 3 others synthesized and adroitly analyzed (20-18 pts)	5 empirical research articles plus 3 others synthesized with some analysis (17-16 pts)	5 empirical research articles plus 3 others summarized with some analysis (15-14 pts)	Fewer than 5 empirical articles used, or are unfairly summarized, or lack analysis (13-0 pts)
Data sources	At least 2 data sets are used that are timely, authoritative and apropos (10-9 pts)	Data set used is timely, authoritative and apropos (8 pts)	Data set used is authoritative and apropos (7 pts)	Data set is apropos but not authoritative (6-0 pts)
Data analysis	2-3 hypotheses or RQs answered through bivariate data analysis with significance testing (10-9 pts)	2-3 hypotheses or RQs answered through bivariate data analysis (8 pts)	2-3 hypotheses or RQs answered through univariate data analysis (7 pts)	Only 1 hypothesis or RQs answered through data analysis (6-0 pts)
Data charts	Findings conveyed through 3 clear, fair and interesting charts or graphics (10-9 pts)	Findings conveyed through 2 clear, fair and interesting charts or graphics (8 pts)	Findings conveyed through 1 clear, fair and interesting chart or graphic (7 pts)	Chart or graphic missing, or is unclear, or is unfair, or is uninteresting (6-0 pts)
Interpretations, solutions, conclusions	Interpretations and implications of data are comprehensively and competently evaluated and a compelling solution offered (20-18 pts)	Interpretations and implications of data are competently evaluated and a compelling solution offered (17-16 pts)	Interpretations and implications of data evaluated and a feasible solution offered (15-14 pts)	Interpretations and implications are superficial or any solution offered is infeasible (13-0 pts)
Writing mechanics	Writing is cogent and concise with no meaningful errors in syntax or grammar (10-9 pts)	Writing is clear if a bit wordy; any syntax and grammar errors don't harm comprehension (8 pts)	Writing is a bit clunky or beset by syntax and grammar errors while not impeding comprehension (7 pts)	Writing is clunky; frequent syntax or grammar errors harm comprehension (6-0 pts)
Visual clarity	Meaning of research enhanced through compelling visual design (10-9 pts)	Meaning of research conveyed through competent visual design (8 pts)	Design conveys meaning of research if a little cluttered or boring (7 pts)	Design clashes with meaning of research or impairs readership (6-0 pts)