

# **BIOS 844: Leadership in Biostatistics**

**Fall 2013**

**Monday-3:00 PM to 5:45PM**

**Room: 1304**

**Course Instructors:**

**Sonia Davis, DrPH**

**Professor of the Practice, Dept. of Biostatistics**

**William A. Sollecito, DrPH**

**Clinical Professor, Public Health Leadership Program**

## **COURSE OVERVIEW**

The general goal of this course is for students to understand where and how biostatisticians can offer leadership (statistical and otherwise) in both academic and non-academic public health settings. It is seen as complementary to BIOS 841, which emphasizes basic methodological competence in practical applications, but does not cover leadership in biostatistics.

The proposed teaching approach is to combine an examination of leadership principles with practical exposure to these principles in biostatistics by learning from the experiences of biostatisticians who have served in various statistical leadership roles. Classroom sessions dealing with principles and methods will follow a lecture format. Other sessions will involve presentations and discussions. The quality of the group papers and class participation will determine each student's grade in the course.

## **COURSE OBJECTIVES**

This course is designed for students to learn:

1. About leadership and its basic principles
2. The different leadership "styles" one might adopt
3. Where in academic and non-academic settings in public health there are opportunities for biostatisticians to provide both statistical and non-statistical leadership
4. About specific elements of leadership in: (i) research teams of which biostatisticians are members, (ii) administrative and non-administrative roles in academia, (iii) organizations in which biostatisticians are employed, and (iv) settings in which biostatisticians provide leadership through professional service
5. (Through practical exposure) what prominent biostatisticians have experienced as leaders and thereby learned about leadership

## **MODULES**

1. Broad Leadership Concepts
2. Personal vs Team vs Organizational Leadership
3. Facilitative / Management Skills
4. Leadership Stories/Examples
  - Guest lectures will be presented by current leaders in biostatistics
  - Historical examples of leaders will be presented as vignettes throughout the course

## **EXPECTATIONS OF STUDENTS**

Class sessions will often have group discussions and guest speakers. Each student should be an active contributor to all group discussions and activities.

Please demonstrate respect for your classmates by turning off all cell phones or beepers.

Use of laptop computers may occasionally be necessary for class projects. However, while class is in session, we ask that you do not use these for non-class related purposes.

Attendance at each class is expected. More than one unexcused absence will result in a deduction to the final grade by 10 percentage points per unexcused absence. Unexcused tardy behavior or early departure will be treated on a similar, pro-rated basis.

## **HONOR CODE**

The Honor Code and the Campus Code, embodying the ideals of academic honesty, integrity, and responsible citizenship, have for over 100 years governed the performance of all academic work and student conduct at the University. Acceptance by a student of enrollment in the University presupposes a commitment to the principles embodied in these codes and a respect for this most significant University tradition.

Your participation in this course comes with my expectation that your work will be completed in full observance of the Honor Code. Academic dishonesty in any form is unacceptable, because any breach in academic integrity, however small, strikes destructively at the University's life and work.

If you have any questions about your responsibility or the responsibility of faculty members under the Honor Code, please consult with someone in either the office of the Student Attorney General (telephone: 919-966-4084) or the Office of the Dean of Students (telephone: 919-966-4042). For additional information about the honor code, please also refer to the University website. The Information for Students and Plagiarism sections are especially helpful.

## COURSE SCHEDULE

*The professors reserve the right to make changes to the syllabus, including project due dates and test dates, when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.*

Week : Date	Topic (Instructor)	Reading Preparation	Assignments
1: Aug. 26	Course Overview What is leadership? (WS) <ul style="list-style-type: none"> <li>• Leadership vs. Management               <ul style="list-style-type: none"> <li>○ Management pathways to leadership</li> </ul> </li> <li>• Vision</li> </ul> Ethics (SD)	Required reading: <ul style="list-style-type: none"> <li>• AMS Ch. 1</li> <li>• Knowling, R, “Why vision matters” (online link)</li> <li>• Begin reading Lencioni’s <u>The Five Dysfunctions of a Team for discussion Oct. 14<sup>th</sup></u></li> <li>• Davidian, M, Professional ethics for Statisticians</li> </ul> Optional Reading: <ul style="list-style-type: none"> <li>• Northouse Ch. 16</li> </ul>	Assignment: <ul style="list-style-type: none"> <li>• Complete pre-course survey (in class)</li> </ul>
2: Sept. 2	HOLIDAY		
3: Sept. 9	Student Presentations – Assignment 1  Strategic Thinking (WS) <ul style="list-style-type: none"> <li>• Strategic actions</li> <li>• Strategic planning</li> </ul> Diversity in Leadership/ Balancing Work/Life Commitments (SD)	Required reading : <ul style="list-style-type: none"> <li>• AMS Ch.2</li> <li>• Mintzberg: The fall and rise of strategic planning (online link)</li> <li>• Pine, Sheconomics: Why more women on boards boost company performance 2011*</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Northouse Ch. 14</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment: Student write-up / presentation of a Leadership profile using broad concepts (Due 9/9)</li> <li>• Complete Leadership Assessment Tools (Due 9/9)</li> </ul>
4: Sept. 16	Decision Making(WS)  Personal Leadership Styles: David Steffen (DS) Review/ discussion of leadership style instruments for students	Required reading: <ul style="list-style-type: none"> <li>• AMS Ch. 4</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Northouse : Ch. 4*</li> <li>• Grove, Ch. 5</li> </ul>	

Week : Date	Topic (Instructor)	Reading Preparation	Assignments
5: Sept. 23	Financial Literacy (SD)  Leadership Role in Financial Planning and Oversight (SD)  Personal Leadership Styles(cont'd) (DS)  Emotional Intelligence Other Personal Leadership Topics (DS)		Set up individual meetings with Dr. Steffen (optional)
6: Sept. 30	Transactional vs transformational leadership; Transformational leadership and Innovation (WS) <ul style="list-style-type: none"> <li>• Leading Change               <ul style="list-style-type: none"> <li>○ Kotter's Model</li> <li>○ Bridges Model</li> </ul> </li> <li>• CQI as a model for change and Innovation               <ul style="list-style-type: none"> <li>○ CQI History/Philosophy</li> <li>○ Statistical thinking in CQI</li> <li>○ CQI Tools</li> </ul> </li> </ul> Management Skills and Tools (WS) <ul style="list-style-type: none"> <li>• Systems/Production Flow</li> <li>• Drug development model</li> <li>• Flow Charting</li> <li>• Planning (Gantt Charts)</li> </ul>	Required reading: <ul style="list-style-type: none"> <li>• AMS Ch. 10</li> </ul> Optional Reading: <ul style="list-style-type: none"> <li>• Kotter Ch. 1,2*</li> <li>• Northouse, Ch.9*</li> <li>• Sollecito &amp; Johnson: Chap 1,3*</li> <li>• Grove Ch.1,2*</li> <li>• Swanson, Masters of servitude *</li> <li>• Menkens, A.J. and Amelio, R.C. Leaders and Organizations in Transition 2009</li> <li>• Bridges Ch.1,2</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm assignment posted on Sakai</li> </ul>

Week : Date	Topic (Instructor)	Reading Preparation	Assignments
7: Oct. 7	Communications/meetings (SD)  Motivation and Empowerment(WS) <ul style="list-style-type: none"> <li>• Delegation</li> <li>• Maslow’s triangle</li> <li>• Task relevant maturity</li> </ul>	Required reading: <ul style="list-style-type: none"> <li>• AMS Ch.3,5</li> <li>• Landry, 2012. The fine art of delegation</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Grove, Ch. 3,4,11,12*</li> <li>• Kotter, Ch. 7*</li> <li>• Adachi, Y. 2011. “How not to get lost in translation: Tips for communicating with International peers.”*</li> </ul>	<ul style="list-style-type: none"> <li>• Complete Lencioni Assignment– due 12:00 noon on Friday, October 11<sup>th</sup> <a href="https://unc.qualtrics.com/Survey/?SID=SV_bPcbzech0WiwJ0h">https://unc.qualtrics.com/Survey/?SID=SV_bPcbzech0WiwJ0h</a></li> <li>• Book discussion Oct.14<sup>th</sup></li> </ul>
8: Oct. 14	Module 3: Team / Project Leadership / Management: Lori Evarts  Teams <ul style="list-style-type: none"> <li>• Overview of Lencioni 5 Dysfunctions Reading</li> </ul> Projects <ul style="list-style-type: none"> <li>• Selected topics / overview of project management</li> </ul>	Required reading: <ul style="list-style-type: none"> <li>• Lencioni 5 Dysfunctions</li> <li>• AMS, pp. 167-188</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Northouse Ch. 11*</li> </ul>	
9: Oct. 21	Organizational Leadership/ Culture (WS)  Case study: Project teams and the matrix structure in academia & industry (SD)	Required reading: <ul style="list-style-type: none"> <li>• AMS Ch.7, 9</li> <li>• AMS pp.191-193</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Grove, Ch.8,9*</li> <li>• Kotter, Ch.10*</li> <li>• Shortell and Kaluzny, Ch.10*</li> <li>• Northouse Ch. 14*</li> <li>• Sollecito &amp; Johnson, Ch 2*</li> </ul>	
10: Oct. 28	Effective Time Management (WS)  Public speaking and presentations (SD)	Required reading: <ul style="list-style-type: none"> <li>• Mayo Clinic. 2012 (online reference)</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Northouse Ch. 13*</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm Assignment Due</li> <li>• Student presentation assignment posted (Nov. 18)</li> </ul>

<b>Week : Date</b>	<b>Topic (Instructor)</b>	<b>Reading Preparation</b>	<b>Assignments</b>
11: Nov. 4	Professional Service/Society Leadership (Guest leader: Bob Rodriguez, Past president, American Statistical Association)	Required reading: <ul style="list-style-type: none"> <li>• Readings as identified by guest lecturer</li> </ul>	
12: Nov.11	Leadership in a Government Agency (Guest leader: Lisa LaVange, FDA)	Required reading: <ul style="list-style-type: none"> <li>• Readings as identified by guest lecturer</li> </ul>	
13: Nov.18	Student Video Presentations  Conflict Resolution (LE)	Required reading: <ul style="list-style-type: none"> <li>• AMS, pp 124-144, 189-195</li> </ul>	<ul style="list-style-type: none"> <li>• Student presentations due</li> <li>• Final Assignment Posted</li> </ul>
14: Nov.25	Academic Leadership (Guest leader: Michael Kosorok, Chair, UNC BIOS Department)	Required reading: <ul style="list-style-type: none"> <li>• Readings as identified by guest lecturer</li> </ul>	
15: Dec. 2	Industry Leadership (Guest leader: Olga Marchenko, Quintiles)	Required reading: <ul style="list-style-type: none"> <li>• Readings as identified by guest lecturer</li> </ul>	
16: Dec. 9  * 4-7pm	Final exam/Course wrap up: <ul style="list-style-type: none"> <li>• Contrasting Industry and Academic Leadership (SD)</li> <li>• Leadership and lifelong Learning (WS)</li> </ul> The Role of Leaders as Mentors (SD) <ul style="list-style-type: none"> <li>• Intel Case study</li> </ul> Social Activity	Required reading: <ul style="list-style-type: none"> <li>• Zerzan, Making the most of mentors: a guide for Mentees, 2009</li> </ul> Optional reading: <ul style="list-style-type: none"> <li>• Kotter, Ch.12*</li> <li>• Cochran, J.J., Deng, C., Dominici, F., Gillespi, A., Mocko, M. 2011 “Careers in statistics: Where will your next stop take you?”*</li> <li>• Tichi</li> <li>• Gale, S.F. The upside of failure*</li> <li>• Gale, S.F., Building Leaders, Intel Case study*</li> <li>• DelGrosso, The courage to fail</li> </ul>	<ul style="list-style-type: none"> <li>• Final Assignment Due</li> </ul>

## **GUEST LEADERS**

Lori Evarts, MPH, Clinical Assistant Professor, UNC Public Health Leadership Program

Michael Kosorok, PhD, Chair, UNC Department of Biostatistics

Lisa LaVange, PhD, Director of Biostatistics, CDER, FDA

Bob Rodriguez, PhD, Past-president, American Statistical Association

David Steffen, DrPH, Clinical Assistant Professor, UNC Public Health Leadership Program

Olga Marchenko, PhD, Vice President, Center for Statistics in Drug Development, Innovation, Quintiles

## **GRADING**

Grading will include individual and small-group exercises that are designed to provide students with practical exposure to leadership principles. Class participation, including in-class exercises and interaction with guest lecturers will be an important part of the weighting for the final grade.

Weighting of activities to assign grades:

- Leadership Profile: 20%
- Other Assignments (combined, including Midterm): 30%
- Class Participation: 20 %
- Final Assignment: 30%

## **COURSE EVALUATION**

The course evaluation is scheduled to be available online during the last two weeks of the semester. We encourage students to complete the evaluation and provide comments to assist us in structuring the course in a helpful manner. We appreciate your participation in this process and your thoughtful feedback.

## **FINAL EXAM POLICY**

Due to university policy, our course is required to meet during the university-assigned final exam period. Please plan to attend the beginning of that time period in order to submit the final exam. If this policy causes you considerable hardship, we would ask that you contact both instructors as soon as possible. Exemptions may need to be approved by our department chair.

**Readings: (@ to be purchased for course; \* will be put on reserve in BIOS Dept):**

**Required:**

Davidian, M, et al. 2011, "Professional Ethics for Statisticians: Issues and Advice," *Amstat News*, July 2011, 18-20.

<http://magazine.amstat.org/wp-content/uploads/2011an/July2011.pdf>

Knowling R. "Why vision matters", *Leader to Leader*, Fall, 2000.

<http://www.hesselbeininstitute.org/knowledgecenter/journal.aspx?ArticleID=18>

Landry, M. 2012. The fine art of delegation, *PM Network, Leadership*; 26(12):54-58.

@Lencioni, PM. 2002. *The Five Dysfunctions of a Team: A Leadership Fable*, Jossey-Bass

Mintzberg: *The Fall and Rise of Strategic Planning*

[http://staff.neu.edu.tr/~msagsan/files/fall-rise-of-strategic-planning\\_72538.pdf](http://staff.neu.edu.tr/~msagsan/files/fall-rise-of-strategic-planning_72538.pdf)

Pine K. 2011. Sheconomics: Why more women on boards boost company performance. *Significance*, June, 2011.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1740-9713.2011.00492.x/pdf>

@Sapienza AM. 2004. *Managing Scientists – Leadership Strategies in Scientific Research*. 2<sup>nd</sup> Ed. Hoboken, NJ: Wiley-Liss Inc. (AMS)

\*Tichy NM. 1997. *The Leadership Engine*. New York: Harper Business.

Zerzan, JT et al. 2009. "Making the most of mentors: a guide for Mentees," *Academic Medicine*, Vol.84, No.1 / January 2009

<http://www.thoracic.org/education/career-development/resources/zerzan-faculty-mentoring-2009.pdf>

**Optional / Leadership Bibliography**

\*Adachi Y. 2011. How not to get lost in translation: Tips for communicating with International peers. *AMSTAT News*. pp. 33-34.

<http://magazine.amstat.org/blog/2011/09/01/translation/>

Allen D. 2001. *Getting Things Done*. New York: Penguin Books.

\*Balestracci D. 2009. *Data Sanity: A Quantum Leap to Unprecedented Results*.

Englewood, CO: Medical Group Management Association. Chapter 2: "Data sanity: Statistical thinking as a conduit to transformation", pp.13-39.

Bennis WG and Nanus B. 1985. *Leaders: The strategies for taking charge*. New York: Harper & Row.

Bridges W. 1991. *Managing Transitions: Making the Most of Change*, Cambridge: Perseus Books.



\*Cochran JJ, Deng C, Dominici F, Gillespi A, Mocko M. 2011. Careers in statistics: Where will your next stop take you? *AMSTAT News*. pp. 18-23.

<http://magazine.amstat.org/wp-content/uploads/2011an/September%202011.pdf>

Daft RL. 2008. *The Leadership Experience*, 4<sup>th</sup> ed. Mason OH:South-Western

\*DelGrosso S. 2010. The courage to fail. *PM Network, Leadership – Do you have what it takes?* 24(10):56-57

\*Gale SF. 2010. Building leaders, *PM Network, Leadership – Do you have what it takes?* 24(10): 34-37

\*Gale SF. 2010. The Upside of failure, *PM Network, Leadership – Do you have what it takes?* 24(10):48-55

Gerstner LV, 2002. *Who Says Elephant's Can't Dance*, Harper Business, Part III- Culture, Ch. 20-22.

\*Grove AS. 1995. *High Output Management*, New York: Vintage Books.

Institute of Medicine. 1988. *The Future of Public Health*. Washington DC: National Academies Press.

Kouzes JM, and Posner BZ. 1995. *The Leadership Challenge*, San Francisco: Jossey-Bass.

\*Kotter JP. 1996. *Leading Change*. Boston: Harvard Business School Press.

Mackenzie A and Nickerson P. 2009. *The Time Trap*, 4<sup>th</sup> edition. New York: AMACOM.

Mayo Clinic. 2012. "Time management: Tips to reduce stress and improve productivity."

<http://www.mayoclinic.com/health/time-management/WL00048/METHOD=print>

Melum MM and Sinioris MK. 1993. *Total Quality Management*, Chicago IL: American Hospital Publishing

Menkens AJ and Amelio RC. 2009. Leaders and Organizations in Transition. *Journal of Public Health Management and Practice*.15(3):274-277

[http://www.nursingcenter.com/Inc/pdfjournal?AID=856226&an=00124784-200905000-00014&Journal\\_ID=&Issue\\_ID=](http://www.nursingcenter.com/Inc/pdfjournal?AID=856226&an=00124784-200905000-00014&Journal_ID=&Issue_ID=)

Mintzer B. 2001. "The power of a vision ...A leaders journey", *Caring Magazine*, July,2001

\*Northouse PG. 2010. *Leadership - Theory and Practice*, 5<sup>th</sup> ed. Sage

Raelin JA. 2006. *Creating Leaderful Organizations:*

<http://www.northeastern.edu/poe/we-the-leaders.pdf>

Rowitz L. 2001. *Public Health Leadership – Putting Principles into Practice*. Gaithersburg, MD: Aspen Publishers Inc.

\*Sollecito WA and Johnson JK. (Eds.). 2013. *Continuous Quality Improvement in Health Care*, 4<sup>th</sup> Edition, Sudbury, MA, Jones and Bartlett.

Version: 8/23/13

Schein EH. 1986, *Organizational Culture and Leadership*, San Francisco: Jossey-Bass

\*Shortell S. and Kaluzny A. Health Care Management, Organizational Design and Behavior

Swanson SA. 2010. Masters of servitude, *PM Network, Leadership – Do you have what it takes?* 24(10):58-62.

\*Young SS and Karr A. 2011. Deming, data and observational studies: A process out of control and needing fixing. *Significance*:116-120.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1740-9713.2011.00506.x/pdf>

Yukl G. 2002. *Leadership in Organizations*. Upper Saddle River NJ: Prentice Hall.