Overview and Objectives:
This course is designed for investigators in the clinical and translational sciences who want to master the basics of research group leadership and management so that they can effectively advance their careers. Topics covered include understanding how academic medical centers function, how to prepare budgets for research projects, how the PI sets the culture of the research group, and how to manage time and personnel. At the completion of the course, trainees should be able to demonstrate an understanding of the basic principles of teamwork, leadership and management, in the context of clinical and translational research endeavors.

Responsibilities:
• Reading assignments should be completed before class. You should anticipate class discussions and activities about the readings.
• Activities will be team-based in class, and individual for homeworks. You will work in the same assigned team throughout the course, and will be assessed on your teamwork skills both by peers and instructors.
• Students will be assigned 7 homework assignments that will be graded. These assignments will be used to reinforce discussions in class. All homework assignments will be assigned a due date. Homework assignments are to be turned in at the beginning of class on the due date. No assignment will be accepted via email. Late homework assignments will be penalized 10% per day past the due date (unless prior arrangements have been made with Dr. Rubio).
• The final project will be due one week from the last day of class. This project will be a compilation of the homework assignments and activities, pertinent to your particular career path and research. This project must be turned in on time to receive full credit, and will be subject to the same late penalties as the homework (outlined above). Students must work on the final project independently.

Course Requirements:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Class participation and attendance</td>
<td>30%</td>
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<tr>
<td>Teamwork</td>
<td>30%</td>
</tr>
<tr>
<td>Homework assignments</td>
<td>20%</td>
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<tr>
<td>Final project</td>
<td>20%</td>
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Attendance Policy:
• Students are expected to sign-in to each class (computer provided in suite lobby). If a problem is encountered with the sign-in system, please contact the course instructor(s) as well as Lauren Talotta (talottals@upmc.edu) immediately.

Course Grading Scale:

For the computation of the final course grade as well as for the course assignments, the following grading scale will be used:
Required Textbook(s):


Website resources:

All homework assignments, course information, and communication will be available at http://courseweb.pitt.edu.

Academic Integrity:

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity (http://www.provost.pitt.edu/info/ai1.html). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.
Course Schedule

PRIOR TO SESSION 1: View online lecture about how teams function.

Date:
Session 1: Understanding Academic Medical Centers

At the conclusion of this session, the student will be able to:  
- Describe the organizational structure of academic medical centers, including personnel and fiscal components.

Topics:  
1. Academic medical centers organizational structure  
2. Personnel structure  
3. Fiscal structure

In Class Activities
Review sample AMC budget, identifying inefficiencies, potential savings, and where else money should be spent.

Competencies:  
Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):
1. HHMI handbook (required textbook) pages 25-38  
4. Levine AS, Detre TP, McDonald MC, et al. The Relationship Between the University of Pittsburgh School of Medicine and the University of Pittsburgh Medical Center—A Profile in Synergy. Academic Medicine. 2008;83(9):816-826 810.1097/ACM.1090b1013e318181d318181a318188.

Homework assignment(s):
TBC
Date:
Session 2: Strategic Planning

At the conclusion of this session, the student will be able to:

- Differentiate between mission, vision and goals.
- Explain how components of a strategic plan lead to operational decisions for an organization.
- Apply strategic planning concepts to the student’s own professional agenda.

Topics:
1. Mission, vision, goals
2. Resource allocation aligns with strategic plan
3. Organizational example
4. Individual application

In Class Activities
Choose an academic medical center or a department thereof, and identify its mission, vision and goals.
Draft and critique your own mission and vision statements (in groups).

Competencies:
Written Communication: Prepare written presentations of research at a variety of stages to a range of audiences, technical and non-technical, and respond to constructive criticism and questions.

Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):
3. HHMI book chapter 3

Homework assignment(s):
Interview your department chair or division chief (or other approved organizational leader). Write no more than two pages on the mission, vision and goals of your department/division, and how the leadership assigns resources accordingly.

Complete your own mission, vision and goals statements.
At the conclusion of this session, the student will be able to:

- Draft a budget for a research project, considering the resource requirements of the work at hand, including personnel, supplies, and other costs.
- Explain the various components of federal budgets.
- Summarize key regulations regarding research budgeting.

Topics:

1. Understanding your resource needs
2. Budget components
3. Key regulations
4. Budget pitfalls

In Class Activities
Develop a budget for the research project of a member of your group.

Competencies:

Written Communication: Prepare written presentations of research at a variety of stages to a range of audiences, technical and non-technical, and respond to constructive criticism and questions.

Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):

2. HHMI book, p. 168-170

Homework assignment(s):
Review your group’s budget with your department/division administrator. Write one page about suggestions they made and why. Rewrite budget based on this new knowledge.
Session 4: Setting the Culture of the Research Group

At the conclusion of this session, the student will be able to:

- Describe how the PI and his/her actions is responsible for the culture of the research group.
- Articulate how underlying assumptions lead to a group's culture.

Topics:

1. Group norms and artifacts
2. Espoused values
3. Underlying assumptions
4. Shared meanings

In Class Activities

In groups, discuss the underlying assumptions of your current department, and how you became aware of them. Be prepared to report back to large group. Identify your own underlying assumptions that are relevant to leading your research group.

Competencies:

Written Communication: Prepare written presentations of research at a variety of stages to a range of audiences, technical and non-technical, and respond to constructive criticism and questions.

Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):

Summary of Schein’s Organizational Culture and Leadership:
http://thehypertextual.com/2013/01/17/edgar-schein-organizational-culture-and-leadership/
And related articles:

Homework assignment(s):

Examine your research group’s physical setting (lab/offices) and interpersonal behaviors, identify the artifacts, espoused values and underlying assumptions, and articulate their meaning to help you clarify the culture of your group. Write no more than two pages.
Date:
Session 5: Understanding Strengths and Weaknesses

At the conclusion of this session, the student will be able to:

- Articulate their own strengths and weaknesses
- Describe how to work effectively with others, appreciating each others’ strengths and weaknesses
- Summarize their biases
- Explain how one’s biases can affect a group and its productivity

Topics:

1. Identifying and working with your own strengths and weaknesses
2. Effective management of others’ strengths and weaknesses
3. Biases and how they can affect your work

In Class Activities

Each group is given a brief outline of two collaborators, which lists their strengths, weaknesses, and biases. The group has to identify the difficulties these collaborators may have in working together, and come up with strategies to overcome these to form a productive relationship. Present to class, and class can vote on whether it will work.

Competencies:

Oral Communication: Prepare and deliver oral presentations of research at a variety of stages to a range of audiences, and respond to constructive criticism and questions.

Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):

3. HHMI book chapter 12

Homework assignment(s):
Complete the team skills assessment (provided) for each member of your group, and yourself.
Date:
Session 6: Time management

At the conclusion of this session, the student will be able to:
- Explain specific time management practices.
- Describe the necessary steps in successful delegation
- Articulate strategies to maintain professional and personal balance
- Outline signs of burnout and steps to avoid it, for self and others

Topics:
1. Time management practices and tips
2. Delegation
3. Maintaining comfort with personal and professional demands
4. Burnout

In Class Activities
Take the Maslach burnout inventory. Discuss the results and what students personally could do to improve their time management

Competencies:
Written Communication: Prepare written presentations of research at a variety of stages to a range of audiences, technical and non-technical, and respond to constructive criticism and questions.

Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):
3. HHMI book chapter 6
4. Matthews J, Debolt D, Percival D. 10 time management tips that work.
   http://www.entrepreneur.com/article/219553

Homework assignment(s):
Write one page on the three most useful time management techniques you use; how and why you think they work.
Date:
Session 7: Personnel Management

At the conclusion of this session, the student will be able to:

- Summarize legalities around personnel management.
- Perform basic behavioral-based interviews.
- Articulate professional development strategies for employees.
- Describe when and how to terminate an individual’s employment.

Topics:

1. Legal issues in staffing
2. Behavioral-based interviewing
3. Professional development for different career paths
4. Issues in terminations

In Class Activities
Role play firing a lab manager/research coordinator with a variety of traits (each group has 2 different problem employees). One person role plays PI, one the employee. Two take notes and comment on performance, then do the second role play.

Competencies:
Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):
1. HHMI book chapter 4

Homework assignment(s):
Develop a list of questions you would ask when hiring a research assistant, and another list when hiring a postdoc.
At the conclusion of this session, the student will be able to:

- Outline their five year plan for their research and their career
- Identify strategies to help them achieve their five year plan
- Describe how and when to assess their progress
- Employ networking techniques to facilitate career and research progress
- Explain what to look out for in assessing career progress, and how to make a ‘course correction’ if progress appears to be stagnating

Topics:

1. Personal career planning
2. Project management techniques applied to your career
3. Networking
4. Course corrections

In Class Activities
Practice networking with students from other teams that you do not know well.

Competencies:

Written Communication: Prepare written presentations of research at a variety of stages to a range of audiences, technical and non-technical, and respond to constructive criticism and questions.

Multidisciplinary Teamwork: Demonstrate behaviors that allow them to be an effective member of a multidisciplinary team including: generating multiple points of view; contributing to the development of new ideas; and demonstrating conflict management skills.

Management: Demonstrate behaviors needed to be an effective project manager including: oversight of fiscal regulations; recruitment; human resource management; and quality assurance activities.

Required Reading(s):


Final project assignment:

Write no more than 10 pages on your own vision, mission, and goals for your career and research. Describe how you fit into the mission of your department. Take one specific project and present a budget for it. Describe your strengths and weaknesses, and the culture you set for your research group. Identify your challenges with fiscal, time, and personnel management, and how you are working to overcome these. Use all these components to present a compelling five year plan, with appropriately-spaced check-in spots along the way to assess your progress and what changes need to be made.