

General Information						
Course Title:	<b>Scientific Analysis &amp; Presentation</b>		Course Designation: PSIO501		Credits: 1	
Semester:	<b>Fall</b>	Year:		<b>2008</b>		
Department:	<b>Cellular and Molecular Physiology</b>					
Directors:	<b>Christopher Lynch &amp; Lisa Shantz</b>	Phone #	<b>5170 or 6987</b>	Email:	<a href="mailto:clynch@psu.edu">clynch@psu.edu</a> <a href="mailto:lshantz@psu.edu">lshantz@psu.edu</a>	Office Rm # <b>C4757 or C4731</b>
Time :	<b>12:00 pm to 1:00 pm</b>	Days:	<b>Thursday (unless otherwise indicated)</b>		Location:	<b>C4702</b>

Course Information
<p>Description and/or Overview:</p> <ul style="list-style-type: none"> <li>The course will have a broad subject theme (like a cellular process or a disease which is instructive for cellular and molecular physiology). Thus, the material presented will not be random but rather related to the theme.</li> <li>The fall theme will be <b>Metabolic Syndrome and Diabetes</b> (Type II diabetes arising from obesity)</li> <li>Dr Lynch or Shantz must approve papers and can help advise with your background information. Subtopics include: <ul style="list-style-type: none"> <li><b>Origin of the diabetes epidemic – theories of the cause of metabolic syndrome.</b></li> <li><b>Mechanisms or interventions for Type 2 diabetes complications (e.g., sleep apnea, retinopathy joint diseases, cardiovascular disease, development of type II diabetes etc...)</b></li> <li><b>Molecular mechanisms of insulin resistance and its consequences.</b></li> <li><b>Adipokines, GI hormones and endocrinology related to diabetes and insulin resistance</b></li> <li><b>Animal models of metabolic syndrome and diabetes type II and their role in understanding the disease</b></li> <li><b>Related papers from PSU investigators</b></li> <li><b>Promising molecular targets for therapeutic intervention</b></li> <li><b>Physiology and pathophysiology of food intake (integrative pathways, motivational pathways) and energy expenditure (e.g., uncoupling proteins).</b></li> <li><b>Molecular mechanisms of energy balance and regulation of metabolism</b></li> <li><b>Morbidity associated with Subcutaneous and Visceral Fat depots or fat distribution or other Obesity/Diabetes “Phenotypes”</b></li> </ul> </li> <li>This is a journal club format course. Volunteers will initially be sought and all remaining spots will be assigned to <u>registered students</u>. Registered students may organize a substitute for their assigned presentations (faculty or student) if they have more than one assigned presentation per semester. Registered students must present at least one paper a year.</li> <li>Choose a paper (a) on the theme that is either recent preferably within the last 6-12 months and (b) that is in a widely read journal (e.g. <i>Science, Nature, Cell, JBC, AJP</i>) or an appropriate excellent peer reviewed specialty journal (like <i>Diabetes or Obesity Research</i>) – again Dr Lynch or Shantz will approve your idea for a presentation and there should be choices.</li> <li>Since this is a thematic journal club some background on the subtopic will be valuable.</li> <li><u>Two weeks</u> before the presentation submit an email briefly outlining your idea for presentation and paper with Dr Lynch</li> <li>Identify an expert. This person should be willing to help you understand the paper and will attend your presentation providing critical analysis. This is <u>required</u> for 1<sup>st</sup> &amp; 2<sup>nd</sup> year students and recommended for the more senior students. Dr Lynch or Shantz can make suggestions for the obesity theme.</li> <li>Place a copy of the paper in the mailroom, C4706, one week prior to the date of your presentation. Provide Dr Lynch with the manuscript reference information and a short summary of the topic and ideally a PDF version of the manuscript that we will distribute via e-mail. Provide Dr Lynch or Shantz with an Advertisement for your presentation based on a template he will send to you by email.</li> </ul>

## Presentation

Here are a few suggestions for journal club presentations. Presentation styles vary and this is not set in stone but you may find this helpful in setting up your journal club.

- 1) Define the hypothesis of the authors. What is the question they are asking? This needs to be clearly stated in your presentation. Explain why you chose this paper and how you think it contributed to the field or may help in the future.
- 2) Background (Background for the field beyond paper should also be considered)
- 3) You don't have to go through the whole paper line by line if you spent more time on background. You can focus on a method or on one or two critical figures in the paper if you think that would flow better.
- 4) Other considerations for your talk that might be useful.
  - What is the main experiment? What did they find? What does it mean? In your talk refine the individual experiment, precisely articulating the design of the experiment and techniques used.
  - As a general rule, if the technique is one that is not clearly understood by the majority of the audience then you need to take the time to detail the technique. Next, state the observations. Everyone forgets this and goes straight to conclusions; don't make that mistake. Then, state the conclusion(s) from the experiment. Finally, discuss any alternative explanation other than ones mentioned by the authors.
  - Summary and Conclusions. Make two sets of conclusions. Summarize the relevant results and present the authors conclusions. Add to this your own opinion of the paper if you think that adds something (Strengths and Weaknesses, if any). There are plenty of terrific papers. The goal here is not to discover a mistake in a paper you are presenting.
  - Future Directions. Finally, for a complete presentation, you need to discuss where this work could go in the future as well as the larger significance of this work. Thinking about future directions may be the most important skill you will develop in this class. If the paper has historical importance for the field at some point even early on this should be discussed.
  - Questions. Think critically about what the paper does show, what it suggests and what is simply not supported then state your position. Providing possible experiments to resolve questions shows you have already thought critically about the paper and understand its strengths and limitations.
  - Length. Presentations should last approximately 40-45 minutes to allow time for discussion.

## **Participation**

- 1) We hope to generate a lively discussion on the paper without generating an argument. To this end remember these are your colleagues that work with you daily.
- 2) Dr Lynch will act as moderator during the question and answer portion. This means we will try to stimulate good discussion and reign in disagreements or discussions that may not be useful to the group in general.
- 3) Participation is especially important for this class. Each student will be expected to participate throughout the year in these discussions.
- 4) After the presentation please fill out the review forms. The review forms will be used for students taking the course for credit as well as anyone else who wishes to use this service.

## Goals and/or Objectives:

Goals are to understand the following by participation and teaching in a seminar course:

- o Origin of the obesity epidemic – obesity theories.
- o Mechanisms or interventions for Type 2 diabetes complications (e.g., sleep apnea, retinopathy joint diseases, cardiovascular disease, development of type II diabetes etc...)
- o Molecular mechanisms of insulin resistance and its consequences.
- o Adipokines, GI hormones and endocrinology related to diabetes and insulin resistance
- o Animal models of metabolic syndrome and diabetes type II and their role in understanding the disease
- o Related papers from PSU investigators
- o Promising molecular targets for therapeutic intervention
- o Physiology and pathophysiology of food intake (integrative pathways, motivational pathways) and energy expenditure (e.g., uncoupling proteins).
- o Molecular mechanisms of energy balance and regulation of metabolism

o Morbidity associated with Fat depots or fat distribution or other Obesity/Diabetes "Phenotypes"

Pre-requisites:

None

Requirements; course-specific policies and expectations:

As indicated above. There are no textbook requirements. This is a seminar course. Grading will be based on discussion contributions and presentations as well as attendance.

Required Texts and Resources: None

Electronic Links:

None

Attendance Policy:

- **Registered students are required to attend all of the presentations.**
- **Students who are not registered for the course are strongly encouraged to attend. Faculty from our department and other departments interested in this subject are welcome to attend.**

Examination Policy: NA

Grading Criteria:

Grading will be based on your attendance and participation. Paper presentations are required. A completed Article Evaluation Form is a required component of the presentation process.

- A Paper presentation with good participation and attendance (1 missed class is permitted, but discouraged).
- B Paper presentation and fair participation and/or attendance (2 missed classes).
- C Paper presentation, poor class attendance and little participation (3 or more missed classes).
- +/- Grading will be based on class participation. (Excellent participation in class discussion might compensate for missed classes)

If you cannot make a class because you are attending a scientific meeting that will not count against your grade. Please just have your advisor contact either Dr Lynch or Shantz to verify that you will be attending a meeting.

**Contact Information**

<b>Faculty / Title</b>	<b>Department</b>	<b>Phone #</b>	<b>EMAIL</b>	<b>Office Room #</b>	<b>Mail Code</b>
<b>Christopher Lynch, Ph.D.,</b> Professor	Cellular & Molecular Physiology	531- 5170	<a href="mailto:clynch@psu.edu">clynch@psu.edu</a>	C4757	H166
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>	<i>Monday through Friday, 9 AM to 3 PM</i>				
<b>Lisa Shantz, Ph.D.,</b> Associate Professor	Cellular & Molecular Physiology	531 6987	<a href="mailto:lshantz@psu.edu">lshantz@psu.edu</a>	C4711	H166
<i>Comments: (i.e. preferred method of contact, contact hrs.)</i>	<i>Monday through Friday, 9 AM to 3 PM</i>				

## Academic Integrity

Academic Integrity at Penn State is defined by Faculty Senate Policy 49-20 as “the pursuit of scholarly activity in an open, honest and responsible manner”. The University's Code of Conduct states that “all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others”. Academic dishonesty (including, but not limited to cheating, plagiarism, or falsification of information) will not be tolerated and can result in academic or disciplinary sanctions such as a failing (F) grade in the course.

## Plagiarism

[For more information, see: <http://tlt.its.psu.edu/suggestions/cyberplag/cyberplagstudent.html> ]

## Statement on Remediation

The basis for grades, as stated in [Senate Policy 47-20](#), is "...the instructor's judgment of the student's scholastic achievement..." Occasionally, a disagreement arises in the assignment of a grade. A student who wishes to question or challenge the grade assigned in a course must first discuss grading practices and assignments with the instructor. It is expected that the student and instructor will try to eliminate any misunderstandings and will attempt to work out any disagreements over grades.

On the rare occasion that a student and instructor fail to resolve the grade dispute through informal means, the student may request that the head of the academic program offering the course act as a mediator. If this mediation does not resolve the dispute, the student who is a graduate student may request further mediation from the associate dean for graduate studies.

[For more information, see: <http://www.psu.edu/dept/oue/aappm/G-10.html> ]

## Educator's Code of Conduct

**The Penn State Milton S. Hershey Medical Center and Penn State College of Medicine are dedicated to developing and maintaining a strong commitment to ethical teaching practices at all levels of the education process.** The foundation for this Educator's Code of Conduct is provided by the Penn State University Graduate School Statement on Teaching Ethics (1). The development of this Graduate School statement was based on a special issue of the journal, *New Directions for Teaching and Learning*. In this special issue, entitled *Ethical Dimensions of College and University Teaching: Understanding and Honoring the Special Relationship between Teachers and Students* (2), several authors provided theoretical and practical guidelines for honing ethical college teaching skills. Some of the authors' recommendations have been used to formulate the Educator's Code of Conduct provided herein. Some of these recommendations were modified to specifically fit the needs of both educators and students at the Hershey Medical Center and the Penn State College of Medicine. Both the Unified Campus Commitment to Excellence of the Hershey Medical Center and Penn State College of Medicine (3) and the Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM (4) were also consulted in preparing this Educator's Code of Conduct.

### Four Norms to Govern Teaching

#### **Honesty**

Honesty and integrity must be practiced during all aspects of the education process.

#### **Promise-Keeping**

Promise keeping requires the educator to fulfill the "promises" made at the beginning of the semester or any other learning activity. Syllabi, assignments, grading principles, and class and office hour schedules each involve promises that are made to students and that must be adhered to under normal circumstances.

#### **Respect for Persons**

The educator must approach the learner with personal respect. In addition, the educator ought to encourage mutual respect among students. In particular, respect for race, religion, sexual orientation, disability gender, age, marital status, cultural differences, and political conviction should be supported and encouraged in all aspects of the educational process. Additionally, educators ought to show respect and common courtesy for students both during interpersonal interactions and in responding promptly to students' need for guidance and feedback. An environment free from harassment and discrimination, verbal abuse, physical violence, and intimidation in any form must also be provided for all learning activities.

#### **Fairness**

Recognizing the inherent subjectivity involved in grading, an educator ought to ensure that their grading practices are as objective as possible by creating and adhering to unambiguous criteria.

### Principles of Ethical College and University Teaching

#### **Content Competence**

An educator maintains a high level of subject matter knowledge and ensures that the content of the educational experience is current, accurate, representative, and appropriate to the position of the learning experience within the students' program of study. The educator must be capable of approaching each learner with a commitment to meeting his or her educational needs.

#### **Pedagogical Competence**

A pedagogically competent educator communicates the objectives of the educational experience to students, is aware of alternative instructional methods or strategies, and selects methods of instruction that are effective in helping students to achieve the course objectives.

#### **Dealing with Sensitive Topics**

Topics that students are likely to find sensitive or discomfoting are dealt with in an open, honest, and positive way.

#### **Student Development**

The overriding responsibility of the educator is to contribute to the intellectual development of the student, at least in the context of the educator's own area of expertise, and to avoid actions such as exploitation and discrimination that detract from student development.

### **Dual Relationship with Students**

To avoid conflict of interest, an educator does not enter into dual-role relationships with students that are likely to detract from student development or lead to actual or perceived favoritism on the part of the educator. The establishment of a romantic/sexual relationship between an educator and a student should be reported to the immediate supervisor of the educator. Such relationships should be dealt with consistent with Penn State Administrative Policy AD41 — Sexual Harassment (5).

### **Student Confidentiality**

Student grades, letters of evaluation, attendance records, and private communications are treated as confidential materials and are released only with student consent, for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to the student or to others.

### **Patient Privacy and Confidentiality**

Educators who utilize patient information as part of any educational experience must follow patient privacy and confidentiality guidelines as outlined by the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

### **Respect for Colleagues**

An educator respects the dignity of his or her colleagues and works cooperatively with colleagues in the interest of fostering student development.

### **Valid Assessment of Students**

An educator is responsible for taking adequate steps to ensure that the assessment of a student's performance is valid, open, fair, and congruent with the course/educational experience objectives. An educator must be aware that such assessments are important in students' lives and in the development of their careers.

### **Respect for Institution and Profession**

In the interest of student development, an educator is aware of and respects the educational goals, policies, and standards of the institution in which he or she teaches and the profession which he or she represents.

### **Citing Sources of Educational Material**

An educator acknowledges and documents, as appropriate, the sources of information and other materials used for teaching.

## **Violations of the Educator's Code of Conduct**

Should a learner experience conduct that is inconsistent with the Educator's Code of Conduct, he/she is encouraged to first address the issue with either the educator responsible for the inconsistency or the director of the course in which the educator teaches. Should this attempt to resolve the problem fail, or if the nature of the inconsistency is such that the learner does not feel comfortable addressing the issue with either the educator or the course director, the student may consult other individuals. These individuals may include but are not limited to: faculty advisor, student ombudsman, departmental chair, the Vice Dean for Educational Affairs, and the Vice Dean for Faculty and Administrative Affairs. The decision of who to contact may be dependent on the educational program of the learner and/or type of violation that was encountered.

### **References:**

- (1) <http://www.gradsch.psu.edu/research/ethics.html#teaching>)
- (2) <http://cte.uncwil.edu/et/br030697.htm>
- (3) Unified Campus Commitment to Excellence of the Penn State Milton S. Hershey Medical Center and College of Medicine; 05/11/01
- (4) Code of Ethical Behavior of the Hershey Medical Center, Policy A-20 HAM; Effective Date October, 2001
- (5) <http://guru.psu.edu/POLICIES/Ad41.html>

**Developed by the Unified Campus Academic Team Endorsed by Teams Council — May 21, 2003**

### Course Schedule

<b>Course Title:</b>		<b>Scientific Analysis and Presentation</b>	<b>Course Designation:</b>	PSIO 501	
<b>Course Director:</b>		<b>Christopher J. Lynch, Ph.D. and Lisa Shantz, Ph.D.</b>			
<b>Time :</b>	12:00 pm to 1:00 pm		<b>Days:</b>	Thursday	<b>Location:</b> C4702
<b>Date</b>	<b>Lecture #</b>	<b>Instruction Type</b>	<b>Instructor</b>	<b>Projected Lecture Topic - This list is an approximate guide to lecture topics. Titles and content are subject to change</b>	
8/28	1	Introduction	Dr. Christopher J. Lynch	Introduction	
9/4	2	Presentation	Presentation		
9/11	3	Presentation	Presentation		
9/18	4	Presentation	Presentation		
9/25	5	Presentation	Presentation		
10/2	6	Presentation	Presentation		
10/9	7	Presentation	Presentation		
10/16	8	Presentation	Presentation		
10/23	9	Presentation	Presentation		
10/30	10	Presentation	Presentation		
11/6	11	Presentation	Presentation		
11/13	12	Presentation	Presentation		
11/20	13	Presentation	Presentation		
11/27	**	**	<b>NO CLASS – Thanksgiving Holiday</b>	<b>NO CLASS – Thanksgiving Holiday</b>	
12/4	14	Presentation	Presentation		
12/11	15	Presentation	Presentation		