

**Below is the list of paperwork to meet graduation requirements.**

**1) For Thesis Formatting:**

<http://guides.library.jhu.edu/etd/formatting>

**2) For Submission:**

<https://etd.library.jhu.edu/>

- You do not need to submit a hard copy for the Physiology Library.

**3) Graduation Requirements:**

**I have attached a copy of the checklist for graduation requirements with additional notes.**

- Graduation Worksheet (Attached. File name: Worksheet)
  - o The pdf file (Worksheet with Courses) shows the required courses, which you should list as well as other courses taken.
  - o Madeline will provide your matriculation date and Oral Exam date.
- Copies of Research Ethics Certificates
- Curriculum Vitae
  - o Sample attached. (File name: CV Format)
- Oral Examination Form
  - o Madeline will provide your completed Oral Exam form from your student file.
- Abstract of Thesis (Title page and Abstract)
  - o Include Title Page (Attached. File name: Abstract Sample)
- Names of Dissertation Referees (2)
  - o Faculty signing your refer letter. (Attached. Referee List of Names)
- Letter of Dissertation approval
  - o Referee Letter (Attached. File name: Referee Letter Sample)
  - o Address letter to Dr. Shanthini Sockanathan, Chair, MA-PhD Committee, Johns Hopkins University, School of Medicine, Baltimore, MD 21205
- Certificate of Completion of Department or Committee Requirements...
  - o Madeline will complete this form, which is the last form/item to be completed and dated.
- Email from the bindery stating the thesis has been submitted
  - o Once your dissertation is electronically submitted and approved, you will receive an email stating so. Please forward a copy of that email to Madeline.
- Graduation Clearance Form (Attached. File name: GradClearFrm)
- Survey of Earned Doctorates
  - o URL: <https://sed-ncses.org>
  - o You will receive a certificate via email once the survey is completed. Please forward a copy of that certificate to Madeline.
- Memo to Registrar's Office to finalize grade
  - o Madeline will work on this with preceptor
- Research Thesis Seminar
  - o **Please give Madeline the date and time of your Research Thesis Seminar. We should schedule in the Physiology Library for the seminar.**
- Provide Website information (Madeline will provide list of what is needed.)

Thanks.

Madeline McLaughlin

Attachments: Worksheet.doc, WorsheetwithCourses.pdf, GradClearFrm.doc, CVFormat.pdf, Referee Letter Sample, Abstract Sample, Referee List of Names Sample, Website Information.

# JOHNS HOPKINS

U N I V E R S I T Y

## School of Medicine

Edward D. Miller Research Building, Suite 147

733 North Broadway

Baltimore, MD 21205-2196

(410) 955-3080 / FAX (410) 955-0826

Office of the Dean

Registrar

## COMPLETION OF DEGREE REQUIREMENTS WORKSHEET

This form should be submitted to the Registrar's Office with other degree completion paperwork.

### GRADUATE PROGRAM:

\_\_\_\_\_

NAME : \_\_\_\_\_

Last Name

\_\_\_\_\_

First Name

MATRICULATION DATE: \_\_\_\_\_

DEGREE COMPLETION DATE: \_\_\_\_\_

TIME TO DEGREE (months): \_\_\_\_\_

### DATES OF GRADUATE BOARD ORAL EXAMINATIONS AND OUTCOMES:

\_\_\_\_\_

\_\_\_\_\_

THESIS TITLE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

THESIS ADVISOR: \_\_\_\_\_

DATE OF THESIS DEFENSE: \_\_\_\_\_

<b>STUDENT PUBLICATIONS/PATENTS (FROM THESIS WORK ONLY)</b>

<b>AWARDS (FROM THESIS WORK)</b>

<b>COURSES TO SATISFY PROGRAM REQUIREMENTS</b>	<b>GRADES</b>

\*Comments (i.e. explanation for any C's or lower on transcripts) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature of Student Date

\_\_\_\_\_  
Signature of Program Director Date

**STUDENT PUBLICATIONS/PATENTS (FROM THESIS WORK ONLY)**

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**AWARDS (FROM THESIS WORK)**

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**COURSES TO SATISFY PROGRAM REQUIREMENTS****GRADES**

Biochemical and Biophysical Principles (ME:100.710) Macromolecular Structure and Analysis (ME:100.709) Cell Structure and Dynamics (ME:110.728) Current Physiology (ME:360.801) Molecular Biology and Genomics (ME:260.709) Bioinformatics (ME&800.707) Genetics (ME&260.708) Pathways + Regulation (ME&360.728) Physiology (ME&360.720) Research (ME:360.800) Primary Source Readings and Analysis (ME&330.708) <u>Electives (4)</u>	
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**School of Medicine**

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Baltimore, MD 21205-2196  
(410) 955-3080 / FAX (410) 955-0826

Office of the Dean  
Registrar

**GRADUATION CLEARANCE FORM**

The following form should be completed and sent to the Registrar's Office at the time you complete degree requirements.

NAME (please print): \_\_\_\_\_  
Last Name First Name

POSTGRADUATE PLANS: (Include position, institution, and preceptor if continuing training)

\_\_\_\_\_  
\_\_\_\_\_

**DEMOGRAPHIC DATA** Note: This information will be used for mailing graduation materials to you.

HOME ADDRESS: Effective Date: \_\_\_\_\_ (mm/dd/yyyy) PHONE NUMBER: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ EMAIL ADDRESS: \_\_\_\_\_

**NOTE:** All December Graduates and May Graduates not attending convocation— Your diploma will be sent via first class mail to you during the month of January (December grads) or June (May grads). We will confirm your mailing address prior to sending the diploma and will not release your diploma until we have received a response from you.

**RETENTION OF JOHNS HOPKINS EMAIL ACCOUNT:**

You are eligible to keep your Johns Hopkins email account for life. In order to take advantage of this, you will need to register with the alumni office and migrate your email. You are encouraged to do this right away. Once your JHED account is closed you lose access to your current email and any messages in your inbox will be unrecoverable. See the Alumni Office's webpage for instructions on how to migrate your email at <http://alumni.jhu.edu/alumniemailmigration/injhed>.

**BENEFITS:**

Please read the attached Benefits Information statement that addresses both end of coverage and options for extending health and dental insurances.

My signature below confirms that I have received the "Graduation Clearance Form – Benefits Information Attachment."

\_\_\_\_\_  
Graduate Student SIGNATURE

\_\_\_\_\_  
Date

# CURRICULUM VITAE FOR Ph.D. CANDIDATES

The Johns Hopkins University School of Medicine

Name		Date of this version	
<b>Educational History:</b>			
Ph.D. expected	20XX	Program in XXXXXX	Johns Hopkins School of Medicine
		Mentors: XXX Yzee PhD and WWW UUVee, MD-PhD	
		(This is your current program.)	
M.S.	20XX	Biology and Phrenology	Southern Canada College
B.S.	20XX	Biology	Eastern Canada College

(add any additional degrees, certificates, etc. in the same format)

**Other Professional Experience (in reverse chronological order, latest first). Summer research positions, specialty courses, etc. If desired, list research rotations at Johns Hopkins here.**

Research rotation 20XX-20XX Lab of XXX, National Institutes of Health  
etc.

**Scholarships, fellowships, or other external funding**

Source or sponsor, identification number (if relevant), inclusive dates, amount. If appropriate, a brief description; is this stipend support, research support, etc.

**Academic and other honors at Hopkins and elsewhere (graduation with honor, service awards, Hopkins student awards, etc.)**

Date Name of the award Source

**Publications, peer reviewed, candidate's name in bold, reverse chronological order. Include reviews**

Adams JC, **Mugnaini E** (1987) Patterns of glutamate decarboxylase immunostaining in the feline cochlear nuclear complex studied with silver enhancement and electron microscopy. *J Comp Neurol* 262:375-401.  
etc.

**Publications, chapters and other non-peer reviewed, candidate's name bold, reverse chron. order**

Osen KK, **Ottersen OP**, Storm-Mathisen J (1990) Colocalization of glycine-like and GABA-like immunoreactivities. A semiquantitative study of individual neurons in the dorsal cochlear nucleus of cat. In: *Glycine Neurotransmission* (Ottersen OP, Storm-Mathisen J, eds), pp 417-451. New York: John Wiley & Sons.  
etc.

**Posters, abstracts, etc. Candidate's name in bold, reverse chronological order**

**Mugnaini E**, Jones AK, Thompson RL (2010) Garbalin garbles things up. American Society of Academic Meetings, St Louis, MO, April 14, 2010.  
etc.

*Please show all authors in the published order for all articles, chapters, posters, etc.  
Please bold your name as an author in each reference  
Please list all articles chronologically from latest to earliest.  
Please use standard reference citation format: (Author FI, Second author FI, Third author FI, (etc). (Year) Title. Journal. Volume: page-page.*

**Inventions, Patents, Copyrights (pending, awarded)**

Date Title

**Service and leadership Here list activities at Hopkins or in the community during your time in the graduate program. Include teaching or tutoring activities.**

Date Description of the activity

**School of Medicine**

725 North Wolfe Street / Baltimore MD 21205-2185  
(410) 955-8333 / FAX (410) 614-8331

Cellular and Molecular Physiology  
Graduate Program

May 13, 2014

Geraldine Seydoux, Ph.D.  
Chair, MA-Ph.D. Committee  
733 N Broadway  
Miller Research Building, Suite 147  
Johns Hopkins University School of Medicine  
Baltimore, MD 21205

Student's Name . . .

Dear Dr. Seydoux,

We have examined the dissertation entitled "**How Muscle Communicates Nutrient Status to Regulate Physiologic Homeostasis**" submitted by [REDACTED]. [REDACTED] has successfully completed all requirements concerning his doctoral training. He has performed original research which is a significant contribution to knowledge and thus, worthy of publication. [REDACTED] has successfully published 12 manuscripts during his doctoral career, 5 of which he serves as first author. [REDACTED] has focused his research on the discovery and characterization of a novel skeletal muscle secreted protein, termed myonectin, which regulates metabolic homeostasis.

The integrated control of animal and human physiology requires intimate tissue crosstalk, a vital task mediated by circulating humoral factors. The recent realization that skeletal muscle, the largest organ in the human body, secretes a variety of biologically and metabolically active polypeptide factors (collectively called myokines) has provided a new conceptual framework to understand the coordination of whole-body physiology and energy balance. [REDACTED] reported the identification and functional characterization of myonectin, the first skeletal muscle-specific secreted protein which links this critical organ to postprandial metabolic homeostasis. In mouse models he showed myonectin mRNA and protein is suppressed with fasting, but dramatically induced upon nutrient availability. Further, myonectin exerts significant control over regulating whole-body glucose and fat metabolism through novel endocrine circuitry. Myonectin acts in a postprandial mechanism to reduce circulating lipid levels. This reduction is facilitated by enhanced expression of fatty-acid uptake genes in both adipose tissue and liver. Additionally, myonectin significantly reduces blood glucose levels by inhibiting glucose output, while simultaneously promoting uptake and deposition into liver.

Given the dependence of myonectin expression on nutrient homeostasis, [REDACTED] further explored how the protein regulates hepatic autophagy, an important process in regulating metabolic fuels. Myonectin significantly reduced both acute and chronic liver autophagic functions by activating the well-described PI3Kinase/Akt/mTOR pathway. [REDACTED] data suggests myonectin functions as a skeletal muscle nutrient sensor, which communicates the status of muscle energy reserves to other metabolically relevant organs. Given the important contribution of skeletal muscle (comprising ~40% of total body mass) to whole-body metabolism, his studies yield novel and





fundamental insights into how myonectin links skeletal muscle to energy regulation in muscle and non-muscle tissues. This basic knowledge can be utilized in a therapeutic setting to approach and treat Type 2 diabetes, obesity and other metabolic perturbations.

We recommend that his dissertation be accepted by the Graduate Board in partial fulfillment of the requirements for the degree of a Doctor of Philosophy in Physiology.

Respectfully Submitted,



Department of Physiology  
Johns Hopkins University

Faculty's Name  
Faculty's Title



Department of Physiology  
Johns Hopkins University

Faculty's Name  
Faculty's Title

**HOW MUSCLE COMMUNICATES NUTRIENT STATUS TO  
REGULATE PHYSIOLOGIC HOMEOSTASIS**

**By**

**Marcus Seldin**

**A dissertation submitted to the Johns Hopkins University School of Medicine in conformity with  
the requirements for the degree of Doctor of Philosophy**

**Baltimore, Maryland**

**May, 2014**

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## Abstract

The integrated control of animal and human physiology requires intimate tissue crosstalk, a vital task mediated by circulating humoral factors. The recent realization that skeletal muscle, the largest organ in the human body, secretes a variety of biologically and metabolically active polypeptide factors (collectively called myokines) has provided a new conceptual framework to understand the coordination of whole-body physiology and energy balance. Here we report the identification and functional characterization of myonectin, the first skeletal muscle-specific secreted protein which links this critical organ to postprandial metabolic homeostasis. In mouse models we show myonectin mRNA and protein is suppressed with fasting, but dramatically induced upon nutrient availability. Further, myonectin exerts significant control over regulating whole-body glucose and fat metabolism through novel endocrine circuitry. Myonectin acts in a postprandial mechanism to reduce circulating lipid levels. This reduction is facilitated by enhanced expression of fatty-acid uptake genes in both adipose tissue and liver. Additionally, myonectin significantly reduces blood glucose levels by inhibiting glucose output, while simultaneously promoting uptake and deposition into liver. Given the dependence of myonectin expression on nutrient homeostasis, we further explored how the protein regulates hepatic autophagy, an important process in regulating metabolic fuels. Myonectin significantly reduced both acute and chronic liver autophagic functions by activating the well-described PI3Kinase/Akt/mTOR pathway. Our data suggests myonectin functions as a skeletal muscle nutrient sensor, which communicates the status of muscle energy reserves to other metabolically relevant organs. Given the important contribution of skeletal muscle (comprising ~40% of total body mass) to whole-body metabolism, these studies yield novel and fundamental insights into how myonectin links skeletal muscle to energy regulation in muscle and non-muscle tissues. This basic knowledge can be utilized in a therapeutic setting to approach and treat Type 2 diabetes, obesity and other metabolic perturbations.

**Dissertation Readers:**

**Valina L. Dawson, Ph.D.**

**Director, Neuroregeneration and Stem Cell Programs, Institute for Cell Engineering**

**Professor of Neurology, Neuroscience, and Physiology**

**Johns Hopkins University School of Medicine**

**733 North Broadway, Suite 711**

**Baltimore, MD 21205**

**[Faculty Sponsor and Reader]**

**Nicholas T. Ingolia, Ph.D.**

**Assistant Professor**

**Department of Molecular and Cell Biology**

**University of California, Berkeley**

**Barker Hall, Room 422**

**Berkeley, CA 94720**

**[Reader]**

## WEBSITE INFORMATION:

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Below is the information we ask from graduates for the CMP website.

I would like to ask the same of you of what you can currently answer.

Thanks.

Madeline

### I would like to request:

1. Permission to have your information, picture...posted on the CMP website. (This includes any information you have already provided.)
2. A scanned picture of yourself (From time here or a present day image - your preference)
3. Name (which I have unless there has been a name change that you prefer to post or not include middle name..., so how you would like your name to appear)
4. Class (matriculation year – I have this information but you could confirm) -
5. Education (Undergraduate or Master's before coming to Hopkins) –
6. Email address (current) -
7. Mentor (here at Hopkins) –
8. Current Title -
9. Position (current) –
10. Location (where employed) –
11. Research Interests (a paragraph of what you are currently doing) – possibly a paragraph on what you will be doing or after you are established in the lab
12. Link to Linked in or Facebook or Website

Please note, the above list is the information that we will post if provided and with your okay. With that said, the information you provide is up to you and whatever you are comfortable sharing. Essentially, this can be an additional platform to advertise what you are doing now. Madeline is assisting in collecting the information for CMP's website, so please send all information to her.

Thanks,

Steve Claypool