UW Medical Physics Graduate Program
Orientation 2017
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University of Wisconsin School of Medicine & Public Health

Agenda
• 10:45 am – 11:10 am: Individual Photos
• 11:10 am – 11:55 am: Program Overview
• 12:00 pm – 12:30 pm: Lunch
• 12:30 pm – 12:45 pm: Library Services Presentation
• 12:45 pm – 12:55 pm: Introduction of Dept Staff & Grad Cmte Chair / Vice Chair
• 12:55 pm – 1:05 pm: Computer Information
• 1:05 pm – 1:10 pm: eRA Commons Info
• 1:10 pm – 1:15 pm: Payroll & Benefits Info

Department Overview
• One of 10 Basic Science departments in UW School of Medicine and Public Health (17 clinical departments)
• 96 faculty, including emeritus, joint, affiliate, adjunct, volunteer, and honorary fellow appointments*
• Faculty at SMPH*:
  • 25 tenured/tenure track (many with joint appointments)
  • 5 clinical (CHS) track
  • 1 Clinical Associate
  • 9 Emeritus professors (active)
  • 2 Joint department appointments (in Radiology)
  • 29 Affiliates (in Radiology, DHO, Engineering, Medicine, Psychiatry)

Locations of Key Resources
1. Wisconsin Institutes of Medical Research (WIMR 1)
2. UW Carbone Comprehensive Cancer Center
3. UW Hospitals & Clinics
4. UW School of Medicine and Public Health (SMPH)
Personnel You Should Know

- Chair and Program Director: Ed Jackson, PhD WIMR 1016
- Assistant to the Chair: JoAnn Kronberg WIMR 1018
- Graduate Committee Chair: Tomy Varghese WIMR 1159
- Graduate Program Coordinator: Deb Torgerson WIMR 1008
- Department Admin Staff:
  - Amy Marzouk, MBA WIMR 1006
  - Lydia Ruch-Doll WIMR 1005
  - Kayla Gerace Customs WIMR 1002
  - Kynslee Layton WIMR 1011
  - Yacenda Tavue WIMR 1115
  - Charles Reckie WIMR 1004
  - Mary Paskey WIMR 1012
  - Clint Calby WIMR 1006
- Lab Rotations & Training Grant PI: Tim Hall, PhD WIMR 1153

Personnel You Should Know

- Vice Chair for Faculty: Tim Hall, PhD WIMR 1153
- Vice Chair for Research: Oliver Wieben, PhD WIMR 1127
- Graduate Student Representatives:
  - Launa DiMaso WIMR-1 B1138-P
  - Ian Marsh CSC L5/162-F
  - Natalie Viscarriello WIMR-1 B1138-L
  - Gengyan Zhao WIMR-1 1122-F

Getting Started

- You received a Student Number from the UW Graduate School
- Activate your NetID, e.g., jsmith@wisc.edu http://myetid.wisc.edu/activate
- Get your “Wiscard” http://www.wiscard.wisc.edu/get-your-wiscard.html
- Register for classes
- Complete required online training programs (HIPAA, Preventing Sexual Harassment and Sexual Violence at UW–Madison, etc.)
- Get a Madison city bus pass (campus bus services are free)
  - http://transportation.wisc.edu/transportation/bus_pass.aspx

New Graduate Student Reception

The School of Medicine and Public Health invites new graduate students to its programs and affiliated programs in a

Welcome Reception

Tuesday, September 5
4:00 to 6:00 p.m. (Dines' remarks at 5:00)
Union South, 1300 West Dayton Street (Check Today in the Union for more)

Desk / Carrel Space

- The program attempts to locate students in study and work areas in close proximity to their advisors, using study carrels or cubicles in:
  - WIMR1 L1 / B (most) or WIMR2 L2
  - CSC L5 Level 1 (near entrance to department)
  - WIMR1 L7 (some students working with Drs. Jeraj and Cai)
  - Waisman Center (some students working with Drs. Alexander and Christian)
  - Wisconsin Institutes for Discovery (some students working with Dr. Eliceiri)
- To get a desk assigned, the student’s advisor submits a request to Lydia Ruch-Doll.

Other Study Areas

- The Ebling Library, located in the Health Sciences Learning Center (HSLC) has study areas, computers with internet access, wifi, etc. (http://ebling.library.wisc.edu)
Department Computers

- Contact: Yacouba Traore, System Administrator
- Charles Reinke, Web/Database and sys admin support
- Computers are typically provided by the PIs
- Some “pool” computers are also available
- All computers are networked to Medical Physics servers
- Virus protection and unique passwords (separate from NetID) are required. Any protected data requires encryption.
- “My Documents” folder and subfolders on Windows computers are backed up daily. Backing up of other folders is the responsibility of the user.
- Wifi access available throughout WIMR, HSLC, Ebling Library, and most campus facilities. (eduroam recommended, go.wisc.edu/eduroam)

HIPAA Training

- HIPAA – Health Insurance Portability and Accountability Act
- This act helps to ensure all medical records, medical billing, and patient account information meet certain consistent standards with regard to documentation, handling, and privacy
- As an employee or student in the Department of Medical Physics, which is a unit within the University’s Health Care Component, you must be familiar with the basic principles of the HIPAA act rules
- You must complete HIPAA the online training module and document the completion (submit to JoAnn Kronberg, WIMR 1018).
- Failure to complete and document this training will prohibit you from being a member of the department or working with one of the Medical Physics, Radiology, or Human Oncology research groups.
- If not already done, complete your HIPAA training now…
  - https://compliance.wisc.edu/hipaa and https://learnuw.wisc.edu/

Security and Campus Information

- The WIMR facilities are unlocked from 7:00 am – 5:30 pm on normal business days. Your ID card provides access after hours and on weekends and holidays. If your ID card does not activate the door lock, please contact Lydda Ruch-Doll.
- Always wear your ID badge while in WIMR, HSLC, UWHC, etc.
- Report suspicious activity! (Open carrels in WIMR results in vulnerability to theft.)
- There are security cameras strategically located throughout the facilities.
- To contact security: 264-2677 (264-COPS)
- Information relevant to UWPD, Discrimination, Hate & Bias Reporting, Sexual Harassment, Sexual Assault, Multicultural Student Center, McBurney Disability Center, LGBT Campus Center, etc: https://www.students.wisc.edu/doso/

Student Information

- The Student Handbook --- the most important location for Medical Physics Graduate Program information!
  - http://www.medphysics.wisc.edu/graduate/ then select “Medical Physics Student Handbook”
  - Updated as needed

Typical Time Lines

- MS Degree
  - Approximately 2 years of course work (minimum of 32 credits)
- PhD Degree
  - Approximately 5 years, with last 2.5-3.0 years mostly research (minimum of 54 credits, includes minor requirement)

Major Research Areas

- Biomagnetism
- Diagnostic x-ray imaging, including CT
- MR imaging and spectroscopy
- Nuclear medicine, PET, molecular imaging
- Optical imaging
- Radiation dosimetry / metrology
- Radiation therapy physics
- Ultrasound physics
Partnership Space
Academic / Industrial
Team Offices
Imaging Informatics
WIMR Tower 1: Floor B

WIMR Med Phys / Radiology Facilities

WIMR Med Phys / Radiology Facilities

Locations of Key Resources

Waisman Center – Dedicated to the advancement of knowledge about human development, developmental disabilities, and neurodegenerative diseases.

Waisman Laboratory for Brain Imaging and Behavior
- 31 MR Scanner (fully equipped for fMRI studies)
- MR Scanner Simulator
- Siemens ECAT HR+ PET Scanner
- Siemens Focus 220 microPET Scanner
- Tandem Accelerator (7 MeV protons) and Radiochemistry Lab
- 256 Channel EEG/ERP System

Additional Waisman Center Cores:
- Admin
- Clinical Translational
- Cellular & Molecular Neuroscience
- Rodent Models

UW Medical Physics Program

- Didactic courses addressing core Medical Physics topics
- Laboratory components
  - As part of several core courses
  - Standalone “Rad Labs” (may be taken after dissertation status is reached, if desired)
- Oral PhD Qualifying Exam (end of Yr 2)
- Wide range of elective courses (subspecialty and outside of Med Phys)
- Prelim Exam (defense of research prospectus, public exam, by end of Yr 3)
- Research in broad range of areas
- Clinical exposure options (working with clinical medical physicists)
  - Radiation therapy “trainee”
  - Diagnostic imaging physics team
- Dissertation defense and exam plus required separate public seminar
- Typical times: 2 years for (non-thesis) MS plus 4-5 years for PhD

Enrollment Information

- Typical Program Enrollment: ~100
- Typical Entering Class Size: ~15 – 20
- Faculty also supervise students from outside of the Medical Physics Program (BME, ECE, NEEP, physics, neuroscience, etc.), bringing total number of students working in medical physics to >110.
- Post-Docs: ~15
- Scientists: ~15
UW Medical Physics Program

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UW Graduate School Online Forms

- The UW-Madison “warrant system” is used in the scheduling and documentation of the Prelim Exam, PhD Defense, etc. and is now online.
- There is a 3-week lead time required for each warrant.
- Specific info is required to complete each warrant request (MS, Prelim, PhD)
- Automated review process will result in acceptance or denial of request.
  One “red X” and the request is denied and dropped from the system.
- After reason for denial is addressed, e.g., a missing grade, the warrant must be re-requested.
- Once warrant request is accepted, the email link with warrant should be sent to Deb who will print it
- A scanned copy of each signed warrant must be submitted to Deb before the original is submitted to the Graduate School

Med Phys Education & Training Portal

- www.medphysics.wisc.edu
- You will use this portal throughout your graduate education tenure, e.g., IDP formations and meetings of committees, warrants, listing of presentations & publications, etc.
### Core Curriculum

- The UW Medical Physics Program has defined a core curriculum that satisfies the graduate education requirements specified by CAMPEP standards*. However, the program has an “opt out” option for students who wish to complete degree requirements without taking the full slate of core courses.
- For such programs, CAMPEP accreditation requires identification of students who complete the core curriculum.
- Beginning with students who matriculated in fall 2014, those students who complete the core curriculum can receive a certificate (letter) attesting to such completion.

* Standards for Accreditation of Graduate Educational Programs in Medical Physics, www.campep.org

### Core Curriculum

All students in the Medical Physics Program shall take the following core courses (totaling 25 credits*) prior to advancing to dissertation status:

- **MP501 Radiological Physics & Dosimetry** [3cr]
- **MP563 Radioisotopes in Medicine & Biology** [4cr – including lab]
- **MP567 The Physics of Diagnostic Radiology** [4cr]
- **MP573 Medical Image Science: Mathematical & Conceptual Foundations** [3cr]
- **MP596 Physics of Radiotherapy** [4cr]
- **MP578 Non-Ionizing Diagnostic Imaging** [3cr]
- **MP590 Health Physics & Biological Effects** [4cr]
- **MP701 Ethics & the Responsible Conduct of Research & Practice of Medical Physics** [1cr]

In addition CAMPEP-track students must take:

- **MP900 Seminar** for a total of 4 credits (2 for grade, 2 P/F)
- **Human Anatomy or Physiology** (3 or 5 credits)

*MP578 will be replaced by two 2-credit courses: MP575 (US) and MP568 (MR), increasing total to 26 credits

### Core Curriculum

Students may petition the Medical Physics Graduate Committee to replace one or more courses from the Medical Physics Common Core Curriculum with an alternative course or courses. The student will provide the Medical Physics Graduate Committee a written explanation describing his/her reasoning for requesting the change. If the student’s advisor is a member of the Medical Physics Graduate Committee, he/she will be recused from discussion of the petition. If the request is granted, the student will receive a written communication, to which he/she must agree in writing, stating he/she will not be eligible to receive a core curriculum completion certificate unless the core course(s) replaced with alternate course(s) are ultimately taken.

### UW Medical Physics Courses

**Breadth and depth of curriculum**

- **General Medical Physics & Radiation Therapy**
  - **Radiological Physics and Dosimetry** (501)*
  - Monte Carlo Radiation Transport (506)
  - Introduction to Energy-Tissue Interactions (535)
  - Patient Safety and Error Reduction in Healthcare (559)
  - Physics of Radiotherapy (566)*
  - Health Physics & Biological Effects (569)*
  - Advanced Brachytherapy Physics (570)
  - Advanced External Beam Radiotherapy (571)
  - Advanced Radiation Treatment Planning (572)
  - Radiation Physics Metrology (679)

*Current Core Curriculum

**Imaging Science & Nuclear Medicine**

- Radiotopes in Medicine and Biology (563)*
- Physics of Diagnostic Radiology (567)*
- Medical Image Science: Mathematical and Conceptual Foundations (573)*
- Imaging in Medicine: Applications (574)
- Principles of X-ray Computed Tomography (577)
- Non-Ionizing Diagnostic Imaging (MR & US) (578)*
- Microscopy of Life (619)
- Digital X-ray Imaging (707)
- Advances in Medical Magnetic Resonance (710)
- Multi-Modality Molecular Imaging in Living Subjects (719)
- Advanced Ultrasound Physics (775)

**Core Curriculum**

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- **MP596 Physics of Radiotherapy** [4cr]
- **MP578 Non-Ionizing Diagnostic Imaging** [3cr]
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*Current Core Curriculum

**UW Medical Physics Courses**

**Breadth and depth of curriculum**

- Associated Courses (selected from wide range of options)
  - Radiobiology (410)
  - Ethics & Responsible Conduct of Research & Practice of Medical Physics (704)*
  - Special topics courses (671) in, for example,
    - Digital Medical Image Management
    - targeted Radionuclide Therapy
    - Methods for Neuroimaging Research
  - Human Anatomy or Physiology*
  - Courses in biostatistics, medical informatics, etc.
  - Seminar (900) – Required for grade first year, P/F second year*

*Current Core Curriculum
UW Medical Physics Labs

- Breadth and depth of curriculum
  - Rad Labs
    - Diagnostic Radiological Physics (662)
    - Nuclear Medicine Physics (663)
    - Health Physics (664)
    - CT, MRI, and DSA Physics (665)
    - Medical Ultrasound Physics (666)

Satisfactory Academic Progress

- Maintain at least a 3.0 GPA in the most recent semester
  - Grades in research courses and those with P/F, S/U scores are not counted
  - Failure to make satisfactory progress can result in being dropped from the program
  - Maintain a minimum cumulative GPA of 3.0 for all courses taken while in the Medical Physics Program and for all Department of Medical Physics courses.

Oral PhD Qualifier Exam

- Will be held in May 2019 (for students matriculating in 2017)
- Answers to questions will require integration of knowledge gained during completion of the curriculum taken during the first two years
- Will be administered by a 5-member Oral Exam Committee. (The student’s advisor cannot be a member.)
- Must pass the Oral Exam to subsequently take the Prelim Exam.
- One opportunity to retake the exam (in 6 months). Failure to pass the exam on the second attempt will result in transfer from the PhD program to the terminal MS program in which the student must complete and defend a written MS thesis.

PhD Program Progress

- Have a Major Professor identified by the end of the second semester (most will have accomplished this by the end of the first semester)
- Establish your Pre-Dissertator Mentoring Committee by end of 2nd semester
- Pass the Oral PhD Qualifier Exam in May of your 2nd year
- Have a Minor Plan approved by the Department before the end of the 4th semester
- Pass the Prelim Exam by the end of your 3rd year
- Make continuous progress in dissertation work
- Continuously satisfy Graduate School policies (registration)
- At least one first author publication
- Defend the PhD dissertation by the end of the 7th year of graduate study

Short Term Goals

- Complete all orientation requirements
  - NetID, HIPAA, Rad Safety, UW-Madison online training courses (including harassment, sexual assault, dating and domestic violence, victim rights, reporting, etc.)
- Do well in courses!
  - Typical load is 9-12 didactic credits / semester plus seminar
  - Max allowed load is 15 credits
  - Must maintain a GPA ≥ 3.0
- Become involved in research, starting ASAP
- Complete Core Curriculum requirements by end of spring semester 2019 (or “opt-out”)
- Pass the Oral PhD Qualifier Exam in May 2019

Individual Development Plan

Individual Development Plan (IDP)

- In use for some time at some institutions and/or in some departments
- Recent NIH notice* (NOT-OD-13-093, 7/23/2013)

*individual development plans are currently in implementation at some institutions and have been adopted by their governing bodies. this notice clarifies that the use of idps is not mandatory but is strongly encouraged for all postdoctoral researchers and graduate students. the notice also specifies that idps should be developed by teams of three or more, including a team member who is not the principal investigator of the research project. the notice also states that idps should address the following:

- Uw Policy: “starting in 2014, the university recommends the use of idps for all postdoctoral researchers and graduate students, and requires their use for all postdoctoral researchers and graduate students supported by national institutes of health (nih) funding.”
- Policy applies to entering as well as current students / postdocs.

Individual Development Plan

General Information for students / postdocs

• The IDP is a tool to help:
  • Assess skills, interests, strengths, and needs
  • Make a plan for developing skills that will help one to meet his/her academic and professional goals
  • Communicate with supervisors, advisors, and mentors regarding professional development and career planning needs and intentions, which can lead to helpful advice and resources
  • Make sure the expectations of the student / postdoc and those of the supervisor are clearly outlined and are in agreement so there are no “big surprises”; particularly near the end of training

• In short, the IDP is primarily intended to help the student / postdoc!

An overview of the IDP and roles

1 2 3 4

1. Conduct self-assessment
2. Identify professional development needs and career opportunities
3. Write an IDP
4. Meet with advisor and mentor

Individual Development Plan

How does one start on an IDP?

• The primary responsibility to write and implement an IDP lies with the student / postdoctoral researcher.

• There are two recommended options (others are available):
  • a UW-Madison IDP template (general and appropriate for all disciplines), and
  • the myIDP tool developed by AAAS for Science, Technology, Engineering, and Math (STEM) disciplines.

Individual Development Plan

How does one develop an IDP?

http://myidp.sciencecareers.org/

The assessment component results do not need to be provided to the mentor (or anyone else). A trainee may choose to share all or part of the information with a mentor, but it is not required to do so.

Individual Development Plan

What are the next steps, after self-assessment?

http://myidp.sciencecareers.org/

Individual Development Plan

What are the next steps, after self-assessment?

Write the IDP

1 2 3 4

Discuss with Your Mentor

Please discuss with your advisor:

• Discussing your plan for advancing your current skills and talking about your career interests will give advice and support.

• The assessment component results do not need to be shared with the mentor (or anyone else). A trainee may choose to share all or part of the information with a mentor, but it is not required to do so.

• Consider how this feedback from your advisor might support your goals and provide insights or next resource ideas.

Source: UW Graduate School Preliminary Documentation

Source: UW Graduate School Preliminary Documentation
Individual Development Plan

What are the next steps, after self-assessment?

1. Implement the Plan

![Diagram of Individual Development Plan]

Source: UW Graduate School Preliminary Documentation

Individual Development Plan

How does one manage an IDP?

- There are multiple roles in IDP management:
  - Graduate Student / Postdoctoral Researcher
    - Develops IDP, meets at least annually with mentor to update IDP information.
  - Mentor
    - Will receive an automated email with link to UW-Madison reporting system. Will review IDP information provided by trainee (only the “required” component). Must meet with trainee on a regular basis (at least annually) to update IDP information.
  - Principal Investigators and Program Directors of NIH Grants
    - Confirm that IDPs are in use. (Detailed IDP contents are NOT provided, only attestation that IDP is in place for any graduate student / postdoctoral researcher supported by a PI’s grant(s).)

Can academic departments modify an IDP or use a different template than the two mentioned previously?

- Yes!
  - In fact, the Medical Physics Program has developed its own version of the IDP template:
    - Self-assessment and IDP development: Can be based on either IDP tool previously mentioned.
    - Annual Med Phys Program reporting component of IDP process: REQUIRED template, which will be completed online.
    - When: Sep/Oct 2017

Med Phys IDP Template – Part II

Note: Documentation of these components is required, uploaded via Education & Training Portal effective 2016.
Individual Development Plan

Med Phys IDP Template – Part II (continued)

Entered in Education & Training Portal effective fall 2016

Individual Development Plan

• IDP Resources
  • The Graduate School provides*:
    • links to IDP information, including all information presented today (other than program-specific IDP template information)
    • information on IDP workshops
    • tips for discussing your IDP with your mentor
    • groups that will provide ongoing support for developing and managing your IDP
    • an online reporting system to let your mentor and grants administrator know that you have completed an IDP (and updated it annually)
  • Your Pre-Dissertator Mentoring Committee will review your IDP with you each year.
  * https://grad.wisc.edu/pd/idp/

ABR Exam Information

The ABR Board Exam consists of 3 parts:

• Part 1 written, basic physics and biological science (anatomy/physiology)
  • Must register by September 30 for next year’s exam
  • If you are enrolled in a CAMPEP-accredited graduate program, you may register to take Part 1 prior to receiving your degree. To do so, you must provide a letter verifying your current enrollment in the program along with your transcript no later than December 31st.
  • Undergrad Physics “deficiencies” must be made up; need anatomy (preferred) or physiology
  • ABR audits approximately one-third of the applications for Part 1!

• Part 2 written, subspecialty (therapeutic, diagnostic, or nuclear)
  • Requires the completion of a CAMPEP-accredited medical physics residency before taking Part 2

• Part 3 oral, after passing Part 2

Upcoming Events

• Medical Physics Department Picnic
  • Thursday, September 7th, 4:30 pm – 9:00 pm (or so)
  • Rennebohm Park
  • See Lyddia or a Grad Student Rep for more info!

• Seminars (coordinator: Larry DeWerd)
  • MP900: Attendance required for first two years (strongly recommended thereafter)
  • Mondays at 4:00 pm (except summer term)
  • Starts on September 11th (see www.medphysics.wisc.edu)

• Attending RSNA
  • Attendance is free for AAPM members
  • To become an AAPM member: http://www.aapm.org/memb/prospect/apply.asp and select “Student App”
  • Contact JoAnn Kronberg for status of vans and cars

Final Reminders

• Adhere to the deadlines!
  • HIPAA, online training
  • I-9 documentation
  • Requests for information from Deb
  • Graduate School (course registration, warrants, etc.)
  • PhD Oral Qualifying Exam (May 2018)
  • Prelim Exam (by end of third year)
  • Annual updates of your IDP and submission of required information component
  • Submission of required letters from the Program Director, e.g., AAPM attestations of student status, ABR exam application attestations, etc.

• Computers
  • Adhere to all department policies regarding antivirus software, passwords, encryption, etc.
  • If any questions arise, contact Yacubu Traore (WIMR 1115) for desktop issues or Orhan Unal (WIMR 1131) for UNIX/LINUX compute node issues.