

UW Medical Physics Graduate Program Orientation 2018

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School of Medicine
and Public Health
UNIVERSITY OF WISCONSIN-MADISON



Department Overview

- One of 10 Basic Science departments in UW School of Medicine and Public Health
- 93 faculty, including emeritus, joint, affiliate, adjunct, volunteer, and honorary fellow appointments*
- Faculty at SMPH*:
 - 24 tenured/tenure track (many with joint appointments)
 - 5 clinical health science (CHS) track
 - 1 clinical teaching track
 - 10 Emeritus professors (including past Provost and two previous dept chairs)
 - 2 Joint department appointments (in Radiology)
 - 28 Affiliates (in Radiology, DHO, Engineering, Medicine, Psychiatry)

*As of 1/1/2018



UW-Madison Medical Physics



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
Scheduling appointments with chair; conference room scheduling; car/van
- Graduate Committee Chair: Tomy Varghese WIMR 1159
Initial approval of minor forms and warrants; general counseling re: program/courses
- Educational Programs Coordinator: Carol Aspinwall WIMR 1008
- Department Admin Staff:

• Amy Martens, MBA	WIMR 1006	Department Administrator
• Lyddia Ruch-Doll	WIMR 1005	Office Operations
• Devyn Prielipp	WIMR 1002	HR
• KymmyLomax	WIMR 1011	Finance
• Yacouba Traore	WIMR 1115	IT System Administrator
• Charles Reinke	WIMR 1004	IT Support & Web / Database Support
• Mary Paskey	WIMR 1012	Grants Manager
• Clint Colby	WIMR 1004	Finance
- 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
 - Blake Benyard WIMR-1 B1138-B
 - Ian Marsh CSC L5/162-C
 - Autumn Walter WIMR-1 B1138-E
 - Cole Cook WIMR-1 1122-F1



Getting Started

- You received a Student Number from the UW Graduate School
- Activate your NetID, *e.g.*, jsmith@wisc.edu
<https://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



SAVE THE DATE!

New Graduate Student Welcome is Wednesday, August 29, 2018. All new graduate students should attend. Scroll down for the schedule.



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 Lyddia 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](http://eduroam.wisc.edu))

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.
- 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/> (See Training link)



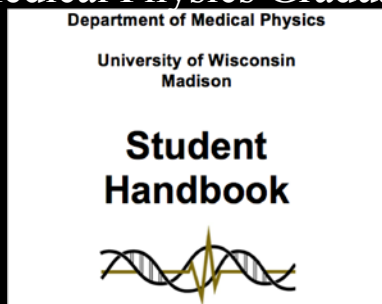
Security and Campus Information

- The WIMR facilities are unlocked from 7:00 am – 4:30 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 Lyddia 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!



- Updated as needed

DEPARTMENT OF MEDICAL PHYSICS
University of Wisconsin School of Medicine and Public Health

RESEARCH EDUCATION & TRAINING SERVICES ALUMNI & DONORS FACULTY & STAFF

HOME / GRADUATE PROGRAM / INFORMATION FOR CURRENT STUDENTS

INFORMATION FOR CURRENT STUDENTS

Graduate work in the UW Medical Physics Department prepares students for professional positions in teaching, research and clinical physics service in medical centers, national laboratories, universities, and governmental regulatory agencies.

The M.S. degree in Medical Physics with the General Medical Physics or Health Physics emphasis is a valuable and worthwhile terminal degree that provides access to many employment opportunities in the field. For those individuals wishing to pursue certification by the American Board of Radiology, competition for medical physics residency program positions based on currently available data, is significantly more difficult with a terminal M.S. degree relative to a Ph.D. degree. The Ph.D. degree is primarily a research degree that extends the depth of knowledge in a specialty area. Both M.S. and Ph.D. students benefit from the expanding array of opportunities available in clinical physics training.

[INFORMATION FOR CURRENT STUDENTS](#)

- [A MINOR IN MEDICAL PHYSICS](#)
- [INDIVIDUAL DEVELOPMENT PLAN \(IDP\)](#)
- [QUALIFIER](#)
- [SEQUENCES AND LEARNING OUTCOMES](#)
- [STUDENT PRIVACY RIGHTS \(FERPA\)](#)
- [TRAINING](#)
- [COURSES](#)
- [STUDENT REPRESENTATIONS](#)

The link to "Course Descriptions" will show the department teaches an extensive breadth of medical physics knowledge. Programs of study lead to the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees in Medical Physics. The program is

2018 STUDENT HANDBOOK
[2018 STUDENT HANDBOOK](#)

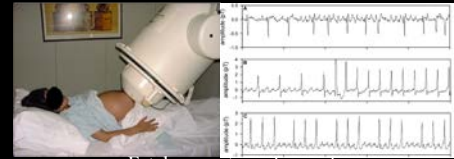
School of Medicine and Public Health
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Typical Time Lines

- 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

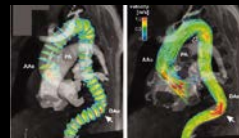
- Biomagnetism
- Diagnostic x-ray imaging, including CT
- Image-guided therapy and assessment
- Magnetic resonance imaging and spectroscopy
- Medical radiation research and metrology
- Molecular imaging and nanotechnology
- Radiation therapy physics
- Radionuclide production and PET
- Ultrasound physics



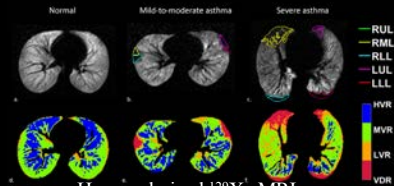
Fetal magnetocardiography



CT low-dose optimized imaging



4D flow MRI



Hyperpolarized ¹²⁹Xe MRI



WIMR Med Phys / Radiology Facilities

WIMR Tower 1: Floor B

- ★ PET/CT VCT scanner
- ★ MicroCT scanner
- ★ Micro PET/CT scanner
- ★ 4.7T small-bore MRI scanner
- ★ C-13 polarizer
- ★ Radiochemistry lab
- ★ Cyclotron (PETTrace, 2nd RDS cyclotron @ MSC)
- ★ Medical Radiation Research Center/ADCL
- ★ PET/CT 710 scanner
- ★ GMP facility (opening Q2/2015)
- ★ Machine shop
- ★ Radiation Detector Lab
- ★ Radiation Therapy Physics Lab
- ★ 3.0T MR/PET
- ★ US/Photoacoustic scanner
- ★ Xenogen IVIS spectrum optical system

TomoTherapy Radixact Linac
Varian 21EX Linac



WIMR Med Phys / Radiology Facilities

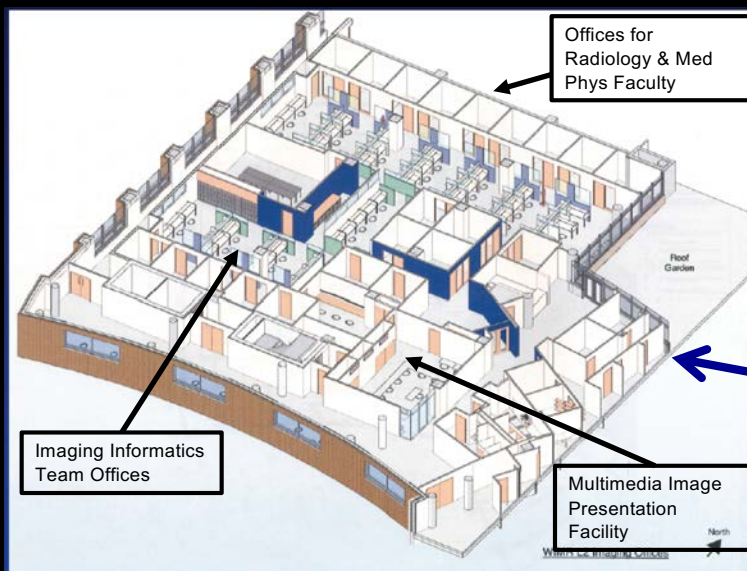
WIMR Tower 1: Floor 1

- ★ 64 slice, dual energy CT scanner
- ★ Four-flat-panel CT scanner, breast tomosynthesis
- ★ 3T MRI scanner (GE Premier)
- ★ 3T MRI scanner (GE MR750)
- ★ Angiography unit
- ★ SBDX angiography unit
- ★ RF/Thermal/Microwave ablation lab
- ★ Animal surgery suite
- ★ Image data processing and informatics
- ★ He-3 polarizer, Xe-129 polarizer
- ★ Medical elastography lab
- ★ 64 channel ultrasound machine
- ★ 192 channel ultrasound machines
- ★ 72 channel SQUID biomagnetism unit
- ★ Electronics/radiofrequency lab
- ★ Acoustics lab
- ★ MRI lab
- ★ Treatment planning system lab



WIMR Med Phys / Radiology Facilities

Radiology / Med Phys Expansion (10,000 sq ft)



Level 2 of WIMR Tower 2

Opened June 2014



Research Facilities

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

Waisman Laboratory for Brain Imaging and Behavior

- 3T MR Scanner (fully equipped for fMRI studies)
- MR Scanner Simulator
- Siemens Biograph 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



Enrollment Information

- Typical Program Enrollment: ~90
- Typical Entering Class Size: ~15 – 25
- 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 >100.
- Post-Docs: ~15
- Scientists: ~15



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 dissertator 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)
Dissertator Status
- Research in broad range of areas
- Clinical exposure options (working with clinical medical physicists)
 - Radiation therapy “teams”
 - 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



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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 Carol who will print it
- A scanned copy of each signed warrant must be submitted to Carol before the original is submitted to the Graduate School



Med Phys Education & Training Portal

The screenshot shows the Department of Medical Physics website. At the top, there is a navigation bar with links for Home, Make a Gift, Intranet, Contact Us, and About Us. Below this is a main banner for the Intranet. A central box highlights the 'Medical Physics Portal' with a red border. Below the banner, there are several service icons: HR, Travel, Purchasing, and Education & Training. The Education & Training icon is highlighted with a blue arrow. The bottom of the page contains a grid of links for Research Groups, Facilities, Graduate Program, Contact Us, Residency, and Faculty Directory.

www.medphysics.wisc.edu

Intranet

Education & Training

You will use this portal throughout your graduate education tenure, *e.g.*, IDP, formations and meetings of committees, warrants, listing of presentations & publications, *etc.*



Med Phys Education & Training Portal

The screenshot displays the 'Office Intranet - Education System' interface. The main content area shows the profile for student Alexander G. Antolak, including navigation tabs (1. Personal Data, 2. Pre-UW, 3. Coursework, 4. Mentoring Committee, 5. Qualifier, 6. Prelim, 7. Dissertator, 8. Training Grant, 9. Professional Development, 10. Post-UW) and a list of publications and presentations. A sidebar on the right shows the 'Passed prelim: Yes' status and a list of committee members.

Member	Email	Net ID	Title	Department	Description
Jackson, Edward F.	efjackson@wisc.edu	efjackson		Medical Physics	Advisor
Fain, Sean B.	sfain@wisc.edu	sfain		Medical Physics	Chair
Bayouth, John E.	bayouth@humonc.wisc.edu	bayouth		Medical Physics	
Jeraj, Robert	rjeraj@wisc.edu	rjeraj		Medical Physics	
McMillan, Alan	AMcMillan@uwhealth.org	almcmillan		Radiology	

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 may request a certificate (letter) attesting to such completion.

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

Core Curriculum

All students in the Medical Physics Program shall take the following core courses (totaling 26 credits*) prior to advancing to dissertator status:

- MP501 *Radiological Physics & Dosimetry* [3cr]
- MP563 *Radioisotopes in Medicine & Biology* [3cr – including lab]
- MP567 *The Physics of Diagnostic Radiology* [4cr]
- MP573 *Medical Image Science: Mathematical & Conceptual Foundations* [3cr]
- MP566 *Physics of Radiotherapy* [4cr]
- MP568 *Magnetic Resonance Imaging* [2cr]
- MP575 *Diagnostic Ultrasound Imaging* [2cr]
- MP569 *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)



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



UW Medical Physics Courses

- Breadth and depth of curriculum
 - Imaging Science & Nuclear Medicine
 - Radioisotopes 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)
 - Magnetic Resonance Imaging (568)*
 - Diagnostic Ultrasound Imaging (575)*
 - 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)

*Current Core Curriculum *Strongly recommended for classes starting in fall 2018*



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 (701)***
 - 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 June 2020 (for students matriculating in 2018)
- Answers to questions will require integration of knowledge gained during completion of the curriculum taken during the first two years
- One question from an advanced medical physics course (beyond core)
- 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 2020 (or “opt-out”)
- Pass the Oral PhD Qualifier Exam in June 2020



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)

Implementation

NIH encourages institutions to develop Individual Development Plans (IDPs) for graduate students and postdoctoral researchers (including scholars, trainees and fellows, and individuals in other postdoctoral positions) supported by NIH awards by October 2014. The IDPs should be broadly implemented for all graduate students and postdoctoral researchers supported by NIH.

It is important to assist graduate students and postdoctoral researchers to achieve their career goals and become contributing members of the biomedical research workforce. Therefore, NIH encourages grantees to develop institutional policies requiring an IDP be implemented for every graduate student and postdoctoral researcher supported by any NIH grant by October 1, 2014. At that time, NIH will begin to encourage grantees to report the use of those IDPs on the progress report, regardless of the type of NIH grant that is used for support. NIH does not expect institutions to include the actual IDPs; instead the report would outline current practices that document that IDPs are used to help manage the training for those individuals.

- 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.

*<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-13-093.html>



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!



Individual Development Plan

An overview of the IDP and roles



Basic Steps	For Graduate Students and Postdocs	For Mentors
Step 1	Conduct a Self-Assessment	
Step 2	Discuss pertinent self-assessment items, career interests, and career opportunities with mentor	Discuss career opportunities with mentee; suggest resources
Step 3	Write an IDP Share IDP with mentor and revise	Review IDP and help mentee revise as needed
Step 4	Implement the plan Revise/update IDP as needed Share your progress and challenges with your mentor	Establish regular review of progress and provide support

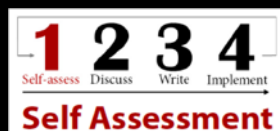
Source: UW Graduate School Preliminary Documentation



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.



<http://myidp.sciencecareers.org/>



Individual Development Plan

How does one develop an IDP?

- myIDP tool

Category	1	2	3	4	5
Scientific Knowledge					
Broad based knowledge of science	1	2	3	4	5
Deep knowledge of mentee's specific research area:	1	2	3	4	5
Critical evaluation of scientific literature	1	2	3	4	5
Research Skills					
Technical skills related to mentor's specific research area	1	2	3	4	5
Experimental design	1	2	3	4	5
Statistical analysis	1	2	3	4	5
Interpretation of data	1	2	3	4	5
Creativity/innovative thinking	1	2	3	4	5
Navigating the peer review process	1	2	3	4	5
Communication					
Basic writing and editing	1	2	3	4	5
Writing scientific publications	1	2	3	4	5
Writing grant proposals	1	2	3	4	5
Writing for nonscientists	1	2	3	4	5
Speaking clearly and effectively	1	2	3	4	5
Presenting research to scientists	1	2	3	4	5
Presenting to nonscientists	1	2	3	4	5
Teaching in a classroom setting	1	2	3	4	5
Training and mentoring individuals	1	2	3	4	5
Seeking advice from advisors and mentors	1	2	3	4	5
Negotiating difficult conversations	1	2	3	4	5
Professionalism					
Demonstrating workplace etiquette	1	2	3	4	5
Complying with rules and regulations	1	2	3	4	5
Upholding commitments and meeting deadlines	1	2	3	4	5
Maintaining positive relationships with colleagues	1	2	3	4	5
Contributing to discipline (e.g. participant of professional society)	1	2	3	4	5
Contributing to institution (e.g. participate on committees)	1	2	3	4	5
Management and Leadership Skills					
Providing instruction and guidance	1	2	3	4	5
Providing constructive feedback	1	2	3	4	5
Dealing with conflict	1	2	3	4	5
Planning and organizing projects	1	2	3	4	5
Time management	1	2	3	4	5
Developing/managing budgets	1	2	3	4	5
Managing data and resources	1	2	3	4	5
Delegating responsibilities	1	2	3	4	5
Leading and motivating others	1	2	3	4	5
Creating vision and goals	1	2	3	4	5
Serving as a role model	1	2	3	4	5
Responsible Conduct of Research					
Careful recordkeeping practices	1	2	3	4	5
Understanding of data ownership/sharing issues	1	2	3	4	5
Demonstrating responsible authorship and publication practices	1	2	3	4	5
Demonstrating responsible conduct in human research	1	2	3	4	5
Demonstrating responsible conduct in animal research	1	2	3	4	5
Can identify and address research misconduct	1	2	3	4	5
Can identify and manage conflict of interest	1	2	3	4	5
Career Advancement					
How to maintain a professional network	1	2	3	4	5
How to identify career options	1	2	3	4	5
How to prepare application materials	1	2	3	4	5
How to interview	1	2	3	4	5
How to negotiate	1	2	3	4	5

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 is not required to do so.

<http://myidp.sciencecareers.org/>



Individual Development Plan

What are the next steps, after self-assessment?

1 2 3 4
Self-assess Discuss Write Implement

Discuss with Your Mentor

STEP 2: Discuss with Mentor/Advisor

Discussing your ideas for assessing your current skills, and talking about your career interests with your advisor and/or trusted mentor might help you identify developmental needs and areas to work on. By helping you compare current skills and strengths with those needed to achieve your career objectives, an advisor can be an important ally.

Some students might feel it's risky to share their weaknesses with an advisor or share their interest in a career outside the academy, for example. While it's not necessary to share all goals/thoughts/assessment results right away, consider how the feedback from your advisor might support your plan and provide insights and resource ideas.

Source: UW Graduate School Preliminary Documentation



Individual Development Plan

What are the next steps, after self-assessment?



STEP 3: Write the IDP
 The IDP helps you map out the general path you want to take toward achieving your goals. The template below can be expanded and modified to fit your own list of goals and strategies. Some important things to remember in writing your IDP:

- It is a living document that will and should be updated and changed as often as necessary
- After writing the general goal to be addressed (column 1), identify specific and *achievable* objectives or skills to be learned (column 2) and write those in a way that makes very clear what you are going to do (use a "S.M.A.R.T. Goals" format: Specific, Measurable, Attainable, Relevant, Time-bound)
- Define approaches and strategies (column 3), and include a time frame for beginning and completing the actions you've outlined (column 4)
- Make sure to have an outcome statement that is clear enough to allow someone (including you!) to know if you've met your goal (column 5)
- Discuss with your mentor and revise the IDP as appropriate

Source: UW Graduate School Preliminary Documentation



Individual Development Plan

What are the next steps, after self-assessment?



Individual Development Plan					
Skills Assessment					
Strengths:			Development needs:		
Goals, Actions and Strategies, Timeline, Outcomes					
Goal	Skills to be learned/developed (objectives, written as SMART goals)	How will you do this? (training, other opportunities, strategies)	When will you do this? (anticipated start and completion dates)	Outcomes (how will you know you have reached your goal?)	

Source: UW Graduate School Preliminary Documentation



Individual Development Plan

What are the next steps, after self-assessment?



STEP 4: Implement the Plan

Put your plan into action. Stay organized and seek out the support you need to stay on track. Commit to the plan, but also remember that you will need to be flexible and modify your plan as your goals or circumstances change. Keep your IDP in a convenient place and check it often. Add your IDP deadlines to your calendar to integrate them with deadlines for other work and personal events.

Review the IDP with your mentor on a regular basis (on a schedule decided upon together) and revise/update. And, importantly, celebrate your achievements!

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).)



Individual Development Plan

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



Individual Development Plan

Med Phys IDP Template – Part II (continued)

Goals and Objectives, Actions and Strategies, Timeline, Outcomes				
A. Goals	B. Objectives: What skills need to be learned/developed (Write objectives as "S.M.A.R.T. Goals")?	C. Actions and Strategies: How will you do this? (Training, other opportunities and strategies)	D. Timeline: When will you do this? (Anticipated start and completion times)	E. Outcomes: How will you know you have reached your goal(s)?
Graduate Education in Medical Physics				
Goal 1: Medical Physics Graduate Education Specific Objectives: 1. 2.				
Goal 2: Medical Physics Board Certification Specific Objectives: 1. 2.				
Goal 3: Medical Physics Ethics & Responsible Conduct of Research Specific Objectives: 1. 2.				
Goal 4: Minor Requirements Specific Objectives: 1. 2.				
Research Activities				
Goal 5: Research Plan Specific Objectives: 1. 2.				
Goal 6: Collaborations Specific Objectives: 1. 2.				
Goal 7: Scientific Writing and Publication of Research Specific Objectives: 1. 2.				
Goal 8: Communication of Research at Conferences Specific Objectives: 1. 2.				

Clinical Experience in Medical Physics				
Goal 9: Plan for Development of Clinical Skills Specific Objectives: 1. 2.				
Teaching Goals				
Goal 10: Plan for Teaching Specific Objectives: 1. 2.				
Personal Goals				
Goal 11: Leadership Specific Objectives: 1. 2.				
Goal 12: Other Specific Objectives: 1. 2.				

*S.M.A.R.T. = Specific, Measureable, Achievable, Relevant, Time-Bound

Note: Documentation of these components is required; uploaded via Education & Training Portal effective 2016



Individual Development Plan

Med Phys IDP Template – Part II (continued)

Additional Medical Physics Program-Specific Items	
Name: _____	
Advisor: _____	Track: _____
Will you be taking Core Curriculum? <input type="checkbox"/> Yes (needed for certification) <input type="checkbox"/> or <input type="checkbox"/> No (opt out) (If No, Approved by Advisor (____/____/____) and Approved by Graduate Chair (____/____/____))	
Core Curriculum Coursework: (Indicate which term course was taken or will be taken)	
Fall Semester: MP 463 (Term: _____) MP 501 (Term: _____) MP 567 (Term: _____) MP 573 (Term: _____) Anatomy 328 (Term: _____) Physiology 335 (Term: _____)	Spring Semester: 566 (Term: _____) 578 (New Course: 568 & 575 combined) (Term: _____) 569 (Term: _____) 701 (Term: _____) Physiology 335 (Term: _____)
<input type="checkbox"/> Qualifier Exam (after first year in program) (Date: ____/____/____) <input type="checkbox"/> MS Level Pass <input type="checkbox"/> PhD Level Pass <input type="checkbox"/> Minor Courses Completed (Date: ____/____/____)	
Prelim Committee Members (List Five: One Outside of Department, at least Three are Medical Physics):	
<input type="checkbox"/> Prelim Exam (after Masters degree) (Date: ____/____/____) <input type="checkbox"/> Prospectus (Follow NIH Format) (Date: ____/____/____) <input type="checkbox"/> Prelim Exam (Date: ____/____/____) <input type="checkbox"/> Seminar Presentation (prior to PhD degree completion) (Date: ____/____/____)	

Entered in
Education &
Training Portal
effective fall 2016



Individual Development Plan

Med Phys IDP Template – Part II (continued)

PhD Committee Members (List Five: One Outside of Department, at least Three are Medical Physics):
Professional Development: <input type="checkbox"/> SMPH HR Curriculum Vitae Template (use to keep your information together) http://intranet.med.wisc.edu/files/smphintranet/docs/hr/curriculum-vitae-template.doc
Every Fall Term: <input type="checkbox"/> List All Publications (Descending Chronological Order). Include FULL citation and all authors (NO et al.) & PMID # <input type="checkbox"/> List All Presentations (Descending Chronological Order). Include FULL citation and all authors (NO et al.)
<input type="checkbox"/> ABR Board Certification Process (Part 1, etc.) (Which Stage and Date: ____/____/____) Comments: _____ <input type="checkbox"/> Not pursuing ABR Certification
Please Enter the Date You Finished Updating Your IDP:
Year1 IDP: ____ Year 2 IDP: ____ Year 3 IDP: ____ Year 4 IDP: ____ Year5 IDP: ____

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 6th, 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 10th (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 (June 2020)
 - 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 Yacouba Traore (WIMR 1115) for desktop issues or Orhan Unal (WIMR 1131) for UNIX/LINUX compute node issues.

