

Introduction to Research Talk

NIMSA 2015/2016

Timeline for Pursuing Research in GEM Program

SEMESTER 1					SEMESTER 2						
	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
STAGE 1	CORE	Human Form				Anatomy of the Thorax and Associated Structures					
		Patient-Centred Practice				Cardiorespiratory Therapeutics					
		Molecular Basis of Life and Disease				Principles of Infection and its Treatment					
		Cell-cell Comm and Signalling				Cardiorespiratory Disease					
		Molecules in Medicine				Personal and Population Health					
	OPTIONS	Soc History Irish Healthcare				Cardiovascular Physiology					
		Basic Principles of Cell Bio									
		Physics in Medicine									
		Social Anthropology									
STAGE 2	CORE	GI/GU Structure				Disability					
		GI/GU Therapeutics				Neurology in Health and Disease					
		Endocrine in Health and Disease				Reproductive Medicine, Psychological Medicine and Child Health					
		Haematology/Immunosuppression				Otolaryngology/Ophthalmology					
		GI/GU Illness				Professional Clinical Practice					
	OPTIONS	Basic Principles of Trauma				Oncology and Immunopathology					
		Stem Cells—An Introduction to Regenerative Medicine									

Setup Contacts
for Research

Complete
Research Project

USMLE

CHOOSE 1 OF 2

Timeline for Pursuing Research in UEM Program

SEMESTER 1					SEMESTER 2				
SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
STAGE 1	CORE	General & Physical Chemistry	5	CORE	Inorganic Chemistry	5	0 PROGRAMME CREDITS 10 ELECTIVE CREDITS		
		Basic Principles of Cell Biology	5		Organic Chemistry	5			
		Physics in Medicine	5		Science Medicine and Society	5			
		Healthcare Imaging and Information Systems	5		Basic Principles of Genetics	5			
		Medical Zoology	5		Physics II Medical Science	5			
STAGE 2	CORE	Basic Tissues & Early Develop	5	Vascular Biology	5	Complete Research Project			
		Musculoskeletal Biology	5	Cardiac Biology	5				
		Clinical Science and Healthcare Informatics 1	5	Renal Biology	5				
		Molecules in Medicine 2	5	Respiratory Biology	5				
		Cell-cell Comm & Signalling	5	Personal and Population Health	5				
STAGE 3	CORE	Neurosciences	5	Understanding Disability for Healthcare Students	5		USMLE		
		Locomotor Biology	5	Principles of Infection and its Treatment	5				
		Gastrointestinal Tract and Liver Biology	5	Genetics, Perinatal and Paediatric Diseases	5				
		Endocrine Biology	5	Oncology & Immunopathology	5				
		Mechanisms of Disease	5	Cardiovascular and Renal Diseases	5				
STAGE 4	CORE	Haematology/Immunosuppression	5	Clinical Diagnosis & Therapeutics	5				
		GI/Hepatobiliary Diseases	5	History Taking and Communication	5				
		Respiratory Disease	5	Physical Examination and Clinical Procedures	5				
		Central Nervous Systems Diseases	5	Reproductive Medicine, Psychological Medicine and Child Health	5				
		Endocrine Diseases	5	Otolaryngology/Ophthalmology	5				
						Professional Clinical Practice	5		

Setup Contacts for Research

Complete Research Project

USMLE

Importance of Research experience to Post-graduate Applications

- Helps to show that you are capable of bringing a project to a conclusion
 - Does NOT have to be a published manuscript
- Shows an interest in a particular field of study
- Not as important to the application as other components
- May be able to make connections at home or abroad

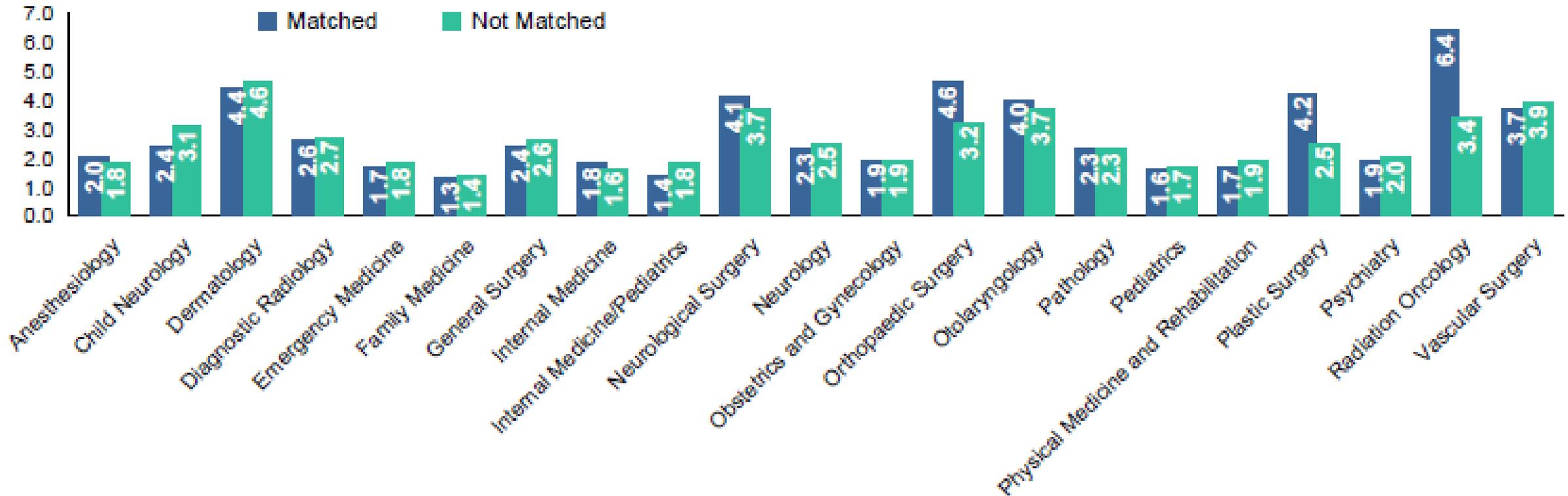
Residency Applicants with Research Experience

Table 2 Summary Statistics
All Specialties Combined

Measure	U.S. Seniors		Independent Applicants	
	Matched (n=15,127)	Unmatched (n=1,245)	Matched (n=8,633)	Unmatched (n=7,682)
1. Mean number of contiguous ranks	11.5	5.3	6.9	2.8
2. Mean number of distinct specialties ranked	1.2	1.6	1.3	1.5
3. Mean USMLE Step 1 score	230	221	225	213
4. Mean USMLE Step 2 score	243	231	234	220
5. Mean number of research experiences	2.7	2.9	1.8	1.9
6. Mean number of abstracts, presentations, and publications	4.2	3.8	3.6	3.9
7. Mean number of work experiences	3.0	3.0	4.0	4.8
8. Mean number of volunteer experiences	7.1	7.2	4.7	3.7
9. Percentage who are AOA members	16.0	5.8	n/a	n/a
10. Percentage who graduated from one of the 40 U.S. medical schools with the highest NIH funding	32.7	21.5	n/a	n/a
11. Percentage who have Ph.D. degree	3.9	2.6	n/a	n/a
12. Percentage who have another graduate degree	15.2	17.8	n/a	n/a

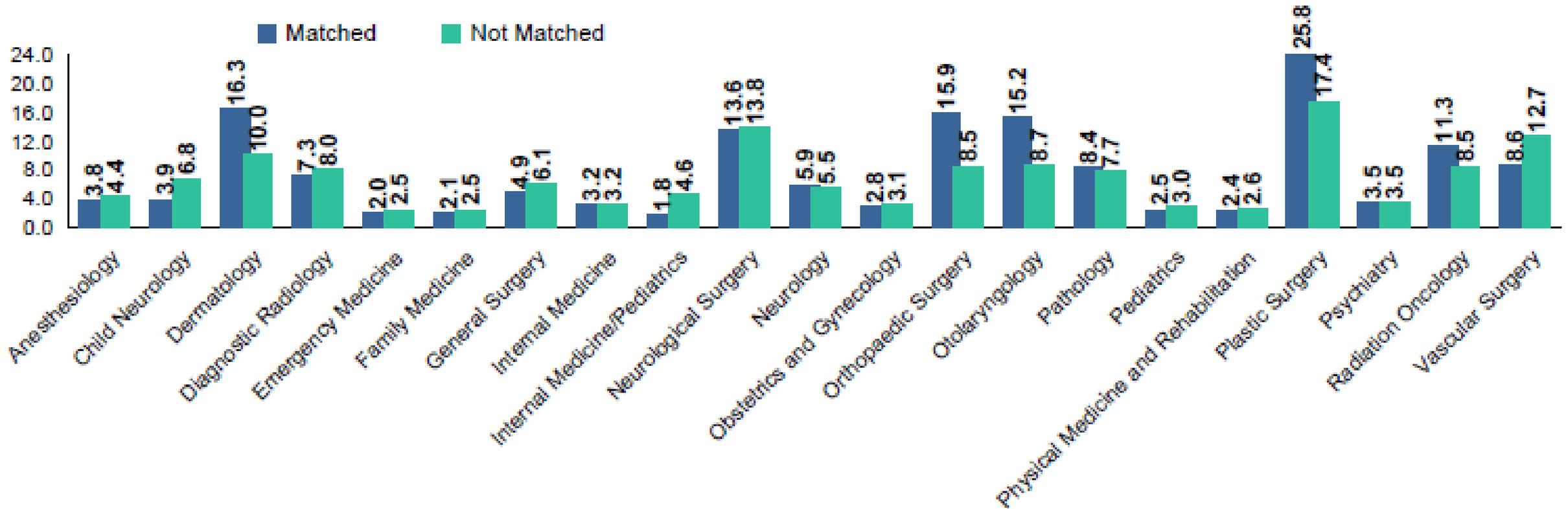
Residency Applicants with Research Experience

Independent Applicants



Residency Applicants with Publications or Presentations

Independent Applicants



General Information on Research and Common Questions

Basic Concepts in Research

- Types of Research:
 - Clinical Research
 - Basic Science Research

- Types of Research Project Outcomes:
 - Poster presentation
 - Oral presentation
 - Seminar Presentation
 - Published abstract
 - Published manuscript

How does research work from start to finish?

- General steps:
 - Research idea and study conception
 - Pilot Study
 - Funding proposal
 - Study Protocol
 - Analysis plan
 - Dissemination of Information
- Average length of time for the start to end of projects varies
 - Most projects take at least two years from start to finish
 - Some may take one year to full manuscript publication (fastest)
 - Poster presentations may occur within six months



What is my role in this project?

- Depends on your skill set, previous experience in the research project, and the needs of the supervisor
 - Clinical research – may involve data extraction, data analysis, interviewing patients, summarizing data, writing reviews, etc.
 - Basic Science research – may involve performing laboratory techniques, helping to prepare reagents, designing experiments, troubleshooting results, etc.
- Need to prepare for multiple roles and **take initiative** to fill gaps in the team
 - The more flexible you are the better
 - Speak with other students or members of the team for advice

How do I find a potential supervisor?

- Be proactive!
 - Look for opportunities to contact faculty or apply for scholarships
 - Think of which specialty you would like to do in the future and look into faculty members that may have interests that align with your interests
- Develop your CV in advance
 - Create a research-specific CV that highlights any research experiences you may already have
 - See University of Chicago – Residency process guide
<https://pritzker.uchicago.edu/current/students/ResidencyProcessGuide.pdf>
 - Be honest about your past experiences and roles

How do I obtain an authorship?

- Need to meet **four** general criteria for authorship (ICMJE criteria):
 - Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
 - Drafting the work or revising it critically for important intellectual content; AND
 - Final approval of the version to be published; AND
 - Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved
- If you do not meet all of these criteria – you **may** be acknowledged

Research Opportunities

Summer Student Research Awards (SSRAs)

- **What is it?**

- “An 8-week supervised undergraduate student project within our research laboratories, at our affiliated clinical sites or with patient advocate groups.” (SSRA website, 2015)
- Clinical and basic science research opportunities
- Most are completed in Ireland but you can apply for a few spots with preceptors abroad
- Visit the SSRA website for a more detailed description: <http://www.ucd.ie/medicine/ssra/>

- **How do I get involved?**

- Go to the SSRA talk next **Thursday, December 3rd at 5 pm in C004**
- Sign up on blackboard using ‘Form C’ and by following the particular directions for each research opportunity
- Prepare your CV ahead of time and keep in mind a personal statement on your research interests
- Keep checking for opportunities periodically – the good opportunities go quickly

- **What do I need to sign up?**

- Completed application form
- Possibly CV and personal statement (100 word summary); possibility of future interview (depending on the opportunity)

University College Dublin and The Hospital for Sick Children

Summer Student Research Awards (SSRA)

Kyle De Oliveira

What did I get out of it?

- Clinical exposure to a variety of specialties
- Two presentations (one oral and one poster)
- 4 weeks at a world-renowned institution

How did I do it?

Form C:

Student Application Form Summer Student Research 2015

UCD SCHOOL OF MEDICINE & MEDICAL SCIENCE

Summer Student Research Elective /Summer Student Research 2015

This is the form that you must complete if you are interested in undertaking summer research either as a research elective where you can avail of 10 /5 credits OR as a summer research project where you do not need to take the credit allocation.

PLEASE SEND THIS FORM DIRECTLY TO YOUR CHOSEN SUPERVISOR (S) AND ALSO TO amanda.mccann@ucd.ie.

IN THE HEADER OF THE E-MAIL PLEASE PUT

SSRA 2015- YOUR NAME-PROJECT NUMBER

e.g. SSRA 2015 AMANDA MCCANN PROJECT 10

Useful Reminders

- Keep your CV updated
- Get in contact with Dr. Amanda McCann (“YES LAUNCH SSRA 2016 to ssra@ucd.ie)
- SSRA Launch in C004 at 5pm Thurs Dec 3rd
- Keep an eye out for any project that interests you!

Research Opportunities in Ireland or Abroad

- Contact potential supervisors or using “connections” to find a supervisor
 - May be helpful if you wish to develop a network at a particular university
- **How do I find and choose a supervisor?**
 - Research online by location, university, field of interest, etc.
 - Read their research interests online and read into their most recent publications
 - Speak to residents or senior house officers that may be working with that supervisor on research projects
 - Contact the supervisor after you have decided on YOUR OWN personal area of interest
- “Cold” emailing supervisors:
 - Key is to be enthusiastic and show a strong interest
 - Include a copy of your updated CV that is research-oriented
 - Do your homework on the supervisor
 - Be persistent – but not annoying

University of Toronto

Summer Student Research Program

Megan Melland-Smith

Undergraduate Research Opportunity Program (UROP)

- Google it
- Application deadline **February/March 2016**
- Research period: Summer 2016 (May-August)
- Eligibility
 - GPA: B+ (3.3)
 - 2nd or 3rd year of study
 - Secure supervisor in advance!
- \$2400 award
- Presentation/mini-symposium at the end

Finding a Supervisor

- Decide on an area of interest
- Start emailing early!
- Update your CV and have a transcript ready
- They may conduct interviews → Skype interviews are an option
- Be aware of “Clinical research” vs “Molecular research”
 - What’s more relevant??

Where to find them...

- Department of Physiology
 - <http://www.physiology.utoronto.ca/faculty>
- Department of Laboratory Medicine and Pathobiology
 - <http://www.lmp.utoronto.ca/research/faculty-research-database>
- When applying for a summer student research award make sure you apply to the proper department!

Clinical Audits

- **What is it?**

- “A systematic review and evaluation of current practice against research based standards with a view to improving clinical care for patients” (SVUH, 2015)
- **Not considered the same as research**
- Encouraged to present posters and write abstracts for peer-reviewed journals

- **How do I get involved?**

- Contact the clinical audit department at a specific hospital (eg. SVUH, MMUH)
- Email should include information on:
 - What stage of medical training you are at
 - Statement about your interest in completing a clinical audit and the department you are interested in
 - CV

- **Who do I contact?**

- SVUH contact – Clinical Audit Department; Ms. Nora Ellard: n.ellard@svuh.ie
- MMUH contact – Ms. Helen Champion: helen.campion@ucd.ie

Important Considerations

Important Considerations for Choosing Research Opportunities

- **When do I need to contact potential supervisors?**
 - For “cold” emailing, start early – usually before winter holiday to setup meetings over the Christmas break
 - In the past, most have contacted supervisors between November and February before their first summer holiday
 - SSRA applications start opening in December/January but may open up later on
- **Will I gain valuable experience from this opportunity?**
 - After speaking with the supervisor about your role, judge whether your research and professional goals will be met
 - You have to enjoy working with the supervisor for 8 weeks
 - If you have previous research experience, an SSRA may not add as much to your CV
- **Will this lead to further research/clinical opportunities?**
 - Most likely – if you are efficient, enthusiastic and take initiative
 - Some research opportunities require more “self-directed” input to get to a desired outcome
- **Where will the research take place?**
 - Some projects may require you to be onsite for certain phases of the research and not for other parts
 - If you cannot commit to being present for the duration of the research project make sure the supervisor knows well ahead of time

Important Considerations for Choosing Research Opportunities

- **What is the time commitment for the research?**
 - Probably the most important factor – you have time in the summer for at least eight weeks of research but some projects linger on
 - Do not overcommit yourself if you cannot move the research with you
 - Be aware that if the project does not come to an immediate outcome, the supervisor may ask you to keep helping with the project
- **What outcome am I hoping to achieve and does this match with the outcome of my supervisor?**
 - Not every project results in a publication or poster – certain projects lend themselves to quick data analysis and others require a large number of experiments
 - Some supervisors like to publish for quantity and others prefer quality
 - Always look for and ask around for opportunities to present your research (locally and internationally)
- **How do I find funding?**
 - Ask your supervisor – most medical students do research voluntarily!
 - Always look for scholarship opportunities well in advance of the research

Funding Opportunities

- The best place to start is usually by asking your potential supervisor
 - Ask for suggestions on grants, scholarships, and bursary applications
- Search for private sources of funding online – look for “summer studentships”
 - Ireland:
 - Health Research Board Summer Student Scholarships – Deadline in February, 2016
<http://www.hrb.ie/research-strategy-funding/grants-and-fellowships/hrb-grants-and-fellowships/grant/136/>
 - Wellcome Trust Scholarship (undergraduates only) – Deadline in February, 2016
<http://www.wellcome.ac.uk/Funding/Biomedical-science/Funding-schemes/PhD-funding-and-undergraduate-opportunities/WTD004448.htm>
 - Canada:
 - School specific: Toronto (UROP), Manitoba, etc.
 - Specialty Specific: CANHEART summer studentship, CAG summer studentship, etc.
 - United States:
 - NIH summer studentship – rolling application from November 1st, 2015 to March 1st, 2016
http://www.cc.nih.gov/training/students/summer_internships.html
 - ALSF Pediatric Oncology Student Training (POST) program – rolling application from early December, 2015 to May, 2016
<http://www.alexslimonade.org/grants/post>

What to do in GEM1 or UEM2/3?

First Semester:

- Start looking at potential supervisors in **November**
 - Update your CV and start sending emails for North American or Irish research supervisors
- Send emails out at the **beginning of December** to meet with potential supervisors in January (North America) or February (Ireland)
 - If interested in SSRAs or clinical audit, try contacting the supervisors in your field of interest ahead of time to see if there are plans to make SSRAs available
 - Make sure you give them your availability – especially if you are vacationing or traveling to North America
- Apply for SSRAs starting in **December** and monitor for new SSRAs throughout the winter break
 - New positions are put up randomly well into March – interviews may follow in February

Second Semester:

- Send a reminder to the supervisor to setup research project while you are in second semester
 - May be a good time to inquire about funding if you haven't already (most applications for funding require a supervisor and project)
- Start research project when you get back – enjoy the summer but make a good impression!!
 - Make sure your supervisor knows the dates that you are available and if you are considering helping past the end of the summer
 - Stay in contact with the research team if the project is not completed

Additional UCD Contact Information and Links

- SSRAs:

Dr. Amanda McCann – amanda.mccann@ucd.ie

Senior Lecturer, UCD School of Medicine; SSRA coordinator

Niamh McCarthy – ssra@ucd.ie

<http://www.ucd.ie/medicine/ssra/>

- General Research at UCD:

Dr. Paddy Mallon – paddy.mallon@ucd.ie

Associate Dean, Research, Innovation and Impact UCD School of Medicine

<http://www.ucd.ie/medicine/lifewithus/ourpeople/featuredstaff/drpaddymallon/>

School of Medicine Research Department:

<http://www.ucd.ie/medicine/ourresearch/>

List of UCD Researchers with biographies and research interests:

<http://www.ucd.ie/medicine/ourresearch/ourresearchers/meetourresearchers/>

Contact Info on Presenters

Rob Clayden – GEM3

- robert.clayden@ucdconnect.ie

Megan Melland-Smith – GEM3

- megan.melland-smith@ucdconnect.ie

Kyle De Oliveira – GEM3

- kyle.de-oliveira@ucdconnect.ie