



Newsletter edition 6

June 2020

AN UPDATE FOR OUR COMMUNITY

In these unprecedented and uncertain times, we are extremely proud of our ICAT Fellows, many of whom have volunteered to return to clinical service providing essential care to patients, or to focus on research relating to COVID-19. This is a very difficult time for everyone, but particularly for our ICAT Fellows, juggling the stresses of increased workloads and childcare, a disruption to routines, for many a pause to their research with an uncertain return date, and of course the worry that comes with working on the frontline and concern for family members.

Our Fellows have our support as they navigate this situation and they and their supervisors are very welcome to contact the Executive team via their local Director or the Programme Manager at any time for guidance.

On a practical note, the Programme is running as normal (as possible!) and we are really looking forward to introducing everyone to our eight new ICAT Fellows who will be joining us in July. Although we may not be able to meet again in person for a while, we look forward to a time when we can get everyone together again.

Dr Michael Conall Denny, ICAT Principal Director

ICAT RETREAT NOVEMBER 2019

The third ICAT Retreat took place in Malahide on the 14th and 15th November 2019. We were honoured to host Professor Garret FitzGerald from the University of Pennsylvania, who delivered a truly inspiring 'fireside chat' with Professor Paddy Mallon, our outgoing ICAT Principal Director, discussing his career and his passion for academic medicine.

The packed two-day schedule included presentations from the new ICAT Fellows (Cohort 3) on their proposed PhD projects, invited speakers and two special guests from the Edinburgh Clinical Academic Training Programme (ECAT), Veterinary Fellows Gráinne Neary and Henry Todd. Amongst our audience were members of the ICAT Independent Advisory Board, the ICAT Steering Committee, and many of our ICAT Supervisors, who critiqued new intake PhD research proposals and appraised preliminary data presented by established Fellows.

Invited speakers Professor Mark Ferguson, Director General Science Foundation Ireland and Chief Scientific Officer to the Government of Ireland, and Dr Annalisa Montesanti, Programme Manager for Health Research Careers at the Health Research Board introduced the ICAT Fellows to the wide range of funding opportunities for researchers in Ireland.

ICAT RETREAT NOVEMBER 2019



A selection of photos from the ICAT Retreat 2019. A. Professor Mark Ferguson, SFI; B. Dr Mark Gurney ICAT Cohort 2; C. Professor Garret FitzGerald; D. ICAT Fellows; E. Dr Jennifer Scott ICAT Cohort 2; F. Retreat audience; G. Professor Paddy Mallon in conversation with Garret FitzGerald; H. Dr Annalisa Montesanti, HRB; I. ICAT Cohort 3; J. ICAT Executive Team; K. Professor Michael Gill ICAT Co-Director; L. ECAT Fellows Dr Gráinne Neary and Dr Henry Todd.

COVID-19 RESEARCH AND CLINICAL SERVICE

During this time, many of the ICAT Fellows have volunteered to return to clinical service, others are developing medical devices and providing public health support; some of their experiences are shared here.

Peter Barrett (Cohort 1, UCC, Public Health Medicine trainee) has been working clinically in the Department of Public Health HSE-South (Cork & Kerry) since early March. Initially he dealt directly with new notifications of COVID-19, informing patients of their diagnosis, communicating with family members and contact tracing. He was involved in training new and redeployed staff in contact tracing, responding to helplines for GPs and the general public and undertaking active surveillance of close contacts. In recent weeks he has been tracking the epidemiology of the outbreak in Cork and Kerry, identifying new clusters of cases in healthcare and workplace settings and leading outbreak control teams in residential care facilities, acute hospitals, and complex workplaces.

Conor Judge (Cohort 1, NUIG, Nephrology trainee) has been collaborating with Prof John Laffey (ICAT Associate Director, NUIG) and Prof Martin O'Halloran (NUIG) on the SFI-funded INSPIRE Project: Facilitating Non-Invasive Ventilation (NIV) during the COVID-19 Crisis (for more information about the award visit



<https://bit.ly/2X3jUO2>). The interdisciplinary team of academic researchers, MedTech engineers, frontline healthcare professionals and industry are developing a CPAP/BiPAP Hood (pictured above) that can help patients to breathe, that will be easy to manufacture and reuse and

comfortable for patients to use for long periods. For patients receiving high-flow oxygen therapy, the team has also developed a vacuum-assisted face guard (pictured left) that will collect infectious droplets coming from the patient's nose or mouth during treatment, reducing the infection risk for healthcare workers. The guard is subject to a patent application and entered clinical use in Galway University Hospitals in May 2020.

<https://adobe.ly/2WY1ENJ> .

Anita Lavery and Gerard Walls (Cohort 2) are PhD students in QUB and trainees in Medical Oncology and Clinical Oncology, respectively. Anita (front right in the photo) and Gerard (back left) have returned to clinical service in the Belfast trust to support their colleagues in the Oncology service. Also pictured is Dr Richard Turkington (back right), the QUB ICAT Associate Director and Anita's PhD Supervisor.



Liam Townsend (Cohort 1, TCD, Infectious Diseases trainee) is involved in research into the immunophenotype of patients with severe COVID; the team has described the immune and inflammatory profile of the sickest COVID patients, and demonstrated that they are an immunologically distinct group to those with mild/moderate disease. The work was featured in the Independent on 07 April and will be published in the coming months. Liam was pictured in St James's Hospital laboratories with (l-r) Dr Jean Dunne, Ann O'Flaherty and Prof. Niall Conlon. The full article can be read here: <https://t.co/syR8AvZvVH>.

Helen Fogarty (Cohort 2, RCSI, Haematology trainee) and Liam Townsend (Cohort 1, TCD, Infectious Diseases trainee) published data suggesting that pulmonary vasculopathy may contribute to the unexplained

differences in racial susceptibility to COVID-19 mortality (publication 11 on page 6). This research generated considerable international attention and has been reported by over 120 media outlets.

Jennifer Scott (Cohort 2, TCD, Nephrology trainee) has moved back into clinical service during the COVID-19 pandemic. Whilst working clinically she has been involved in a collaboration with UKIVAS (UK and Ireland Vasculitis Rare Disease Group) to investigate how COVID19 affects immunosuppressed patients, including those with ANCA-associated vasculitis, which is the focus of her PhD research. Jennifer is developing an interoperable online COVID-19 instrument for the existing Rare Kidney Disease registry to collect relevant data. Jennifer's PhD Supervisor, Professor Mark Little, has been awarded a HRB grant to carry out immunophenotyping of these patients in St James's Hospital (DeComPRESS study); Jennifer is assisting with the collection of samples and data for the project.

SFI FUTURE INNOVATOR PRIZE WINNERS

A multidisciplinary team that includes an ICAT Fellow has been awarded the SFI Future Innovator Prize of €1 million for their research project Hydrobloc. Hydrobloc is a novel hydrogel solution providing long-term pain relief for patients with neuropathic pain, which is drug free without the severe side effects of prescription medications.

The multidisciplinary team composed of members of expert groups within NUI Galway is led by Dr Alison Liddy (second from right in photo; Biomedical Engineering and Chemistry) and includes Dr Leo Quinlan (left; Principal Investigator in Human Physiology), Dr Conor Judge (middle; ICAT Fellow, Engineer and Nephrology Specialist Registrar), Dr Martin O'Halloran (second from left; Electronic Engineering and Clinical Research, NUIG) and Dr Barry McDermott (far right; Pharmacist, Veterinarian and Medical Device Engineer).

For more information about Hydrobloc please visit the SFI information page and the project page:

<https://www.sfi.ie/challenges/future-innovator-prize-18/hydrobloc/>

<https://www.hydrobloc-technology.com/>.



More information about the SFI Future Innovator prize can be found here:

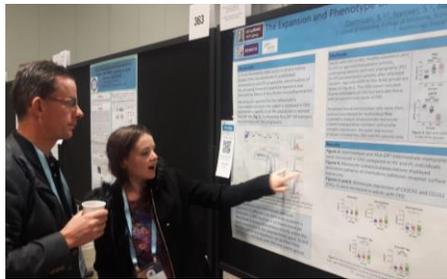
<https://www.sfi.ie/research-news/news/chronic-pain-treatment/index.xml>.



*Keeping in touch virtually,
April 2020*

ICAT FELLOW NEWS

- Cathal O'Connor (Cohort 3) was awarded the President's Prize at the Irish Paediatric Association meeting in December 2019 for his presentation: "Novel STAT5B mutation causing atopic dermatitis, food allergies, drug allergy, hymenoptera allergy, and complex autoimmune disease".
- Sarah Cormican (Cohort 1) gave a poster presentation entitled "The Expansion and Phenotype of HLA-DRhi Intermediate Monocytes in Chronic Kidney Disease" at the American Society of Nephrology Annual Meeting (Kidney Week) in Washington D.C., November 2019 (photo right).
- Cathal O'Connor (Cohort 3) was awarded a bursary to present a poster at the Epidermolysis Bullosa World Congress in January 2020.
- Dr Conor Judge was awarded the Dobbin Atlantic Scholarship 2019/20; these awards aim to develop a new generation of academic, artistic, cultural and economic links between Atlantic Canada and Ireland. <http://www.icuf.ie/scholarships/dobbin-atlantic-scholarship-program/>
- Cathal O'Connor (Cohort 3) presented a case of PSTPIP1-associated myeloid-related proteinemia inflammatory (PAMI) syndrome at the ERN-SKIN meeting in December 2019.
- Peter Barrett (Cohort 1) was awarded Top Clinical Abstract by International Society of Nephrology, Young Nephrologist Section - World Congress of Nephrology, 2020.
- Sarah Cormican (Cohort 1) gave a presentation on "The Irish Experience of Autosomal Dominant Tubulointerstitial Kidney Disease" at the Irish



Kidney Gene Project Research Symposium in November 2019 (pictured below with other attendees).



- Peter Barrett attended the European Public Health Association Meeting in Marseille, November 2019 and presented his research in a talk: "Adverse Pregnancy Outcomes and Long-term Maternal Kidney Disease: A Systematic Review and Meta-analysis" and a poster "Risk of Long-Term Renal Disease in Women With a History of Preterm Delivery: A Population-Based Cohort Study".
- Cathal O'Connor (Cohort 3, right) presented the findings from his research into the positive environmental impact of providing rural outreach clinics at the RCPI Green Health Day in November 2019 (BMJ 2020;369:m1410 and featured in the Irish Times <https://bit.ly/2X3kD1K>).



- Kapil Sharma (Cohort 1) gave a talk entitled 'Effects of antipsychotics on glial cell dysfunction' at the College of Psychiatrists of Ireland and Royal College of Psychiatrists joint conference in Belfast in November 2019.



RECENT PUBLICATIONS

1. **Barrett PM**, McCarthy FP, Kublickiene K, **Cormican S**, **Judge C**, Evans M, Kublickas M, Perry IJ, Stenvinkel P, Khashan AS. Adverse Pregnancy Outcomes and Long-term Maternal Kidney Disease: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2020 Feb 5;3(2):e1920964. doi: 10.1001/jamanetworkopen.2019.20964.
2. **Barrett PM**, McCarthy FP, Evans M, Kublickas M, Perry IJ, Stenvinkel P, Khashan AS, Kublickiene K. Stillbirth is associated with increased risk of long-term maternal renal disease: a nationwide cohort study. *American Journal of Obstetrics & Gynecology*. 2020 Feb 26. pii: S0002-9378(20)30219-2. doi: 10.1016/j.ajog.2020.02.03.
3. **Barrett PM**, McCarthy FP, Evans M, Kublickas M, Perry IJ, Stenvinkel P, Kublickiene K, Khashan AS. Risk of long-term renal disease in women with a history of preterm delivery: a population-based cohort study. *BMC Medicine* 18, 66 (2020). <https://doi.org/10.1186/s12916-020-01534-9>.
4. **Bogdanet D**, Griffin TP, Bell M. A Rare Case of Infertility: SRY Positive 46, XX Testicular Disorder of Sexual Differentiation., *Irish Medical Journal*. 2020 Apr 3;(4):60.
5. Catherwood MA, McAllister R, McCallion P, McGimpsey JE, Hindley A, Feerick J, **Greenfield G**, Kennedy P, Benson G, Arnold C, Merron B, McMullin M. A molecular diagnostic algorithm for JAK2 V617F investigations in suspected myeloproliferative neoplasms, *Irish Journal of Medical Science*. 2020 May;189(2):621-626. doi: 10.1007/s11845-019-02100-w. Epub 2019 Oct 25.
6. **Cormican S**, Kennedy C, Connaughton DM, O'Kelly P, Murray S, Živná M, Kmoch S, Fennelly NK, Benson KA, Conlon ET, Cavalleri GL, Foley C, Doyle B, Dorman A, Little MA, Lavin P, Kidd K, Bleyer AJ, Conlon PJ. Renal transplant outcomes in patients with autosomal dominant tubulointerstitial kidney disease. *Clinical Transplantation* (2020); 34(2):e13783. PMID: 31958169.
7. **Cormican S**, Griffin M. Human Monocyte Subset Distinctions and Function: Insights from Gene Expression Analysis. *Frontiers in Immunology*. doi: 10.3389/fimmu.2020.01070; in press.
8. Costello M, Murphy R, **Judge C**, Ruttledge S, Gorey S, Loughlin E, Hughes D, Nolan A, O'Donnell MJ, Canavan M. Effect of NOACs on Stroke Severity Compared to Warfarin: A Meta-analysis of Randomized Controlled Trials. *European Journal of Neurology*. 2020 Mar;27(3):413-418. doi: 10.1111/ene.14134. Epub 2020 Jan 8.
9. Egan AM, **Bogdanet D**, Griffin TP, Kgosidialwa O, Cervar-Zivkovic M, Dempsey E, Allotey J, Alvarado F, Clarson C, Cooray SD, de Valk HW, Galjaard S, Loeken MR, Maresh MJA, Napoli A, O'Shea PM, Wender-Ozegowska E, van Poppel MNM, Thangaratinam S, Crowther C, Biesty LM, Devane D, Dunne FP, the INSPIRED research group. A core outcome set for studies of gestational diabetes mellitus prevention and treatment *Diabetologia*, March 2020, DOI <https://doi-org.libgate.library.nuigalway.ie/10.1007/s00125-020-05123-6>.
10. **Fogarty H**, **Doherty D**, O'Donnell J. New developments in von Willebrand Disease. May 2020. *British Journal of Haematology*. DOI: 10.1111/bjh.16681.
11. **Fogarty H**, **Townsend L**, Ni Cheallaigh C, Bergin C, Martin-Loeches I, Browne P, Bacon CL, Gaule R, Gillett A, Byrne M, Ryan K, O'Connell N, O'Sullivan JM, Conlon N and O'Donnell JS (2020), COVID19 coagulopathy in Caucasian patients. *British Journal of Haematology*. doi:10.1111/bjh.16749.
12. **Greenfield G**, McMullin MF. Ruxolitinib: gaining more than intended., *Blood* 2020 Mar 26;135(13):983-984. doi: 10.1182/blood.2020005135.
13. Griffin TP, Joyce CM, Alkanderi S, Blake LM O'Keeffe DT, **Bogdanet D**, Islam MN, Dennedy MC, Gillan JE, Morrison JJ, O'Brien T, Sayer JA, Bell M, O'Shea PM. Biallelic CYP24A1 variants presenting in pregnancy: clinical/biochemical phenotypes, *Endocrine Connections*. 2020 May 1. pii: EC-20-0150. doi: 10.1530/EC-20-0150.

14. Hughes D*, **Judge C***, Murphy R, Loughlin E, Costello M, Whitely W, Bosch J, O'Donnell MJ, Canavan M. Association of Blood Pressure Lowering With Incident Dementia or Cognitive Impairment: A Systematic Review and Meta-analysis. *JAMA*. 2020;323(19):1934–1944. doi:10.1001/jama.2020.4249 *Joint first author
15. Ma DD, Luque-Fernandez MA, **Bogdanet D**, Desoye G, Dunne F, Halperin JA. Plasma Glycated CD59 Predicts Early Gestational Diabetes and Large for Gestational Age Newborns, *The Journal of Clinical Endocrinology & Metabolism*, dgaa087, <https://doi.org/10.1210/clinem/dgaa087>. 18 February 2020.
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17. **Mongan D**, Sabherwal S, Susai SR, Focking M, Cannon M, Cotter D. Peripheral complement proteins in schizophrenia: A systematic review and meta-analysis of serological studies. *Schizophrenia Research*. 2020 May. <https://doi.org/10.1016/j.schres.2020.05.036>.
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19. **O'Connor, C**, Heffron, C, McGrath, J, O'Shea, S and Bourke, J. Epidermolysis bullosa (EB) pruriginosa associated with recessive homozygous mutations in COL7A1: case report of a rare EB genotype–phenotype. *The Journal of the European Academy of Dermatology and Venereology*. 2020. doi:10.1111/jdv.16418.
20. **O'Connor C**, Kiely L, O'Riordan A, O'Connell G, Bennett M, O'Shea S et al. A change of climate for climate change: the environmental benefit of specialty outreach clinics, *British Medical Journal*. 2020; 369:m1410 doi:10.1136/bmj.m1410.
21. **O'Connor C**, Murphy M. Going viral: doctors must tackle fake news in the covid-19 pandemic *BMJ* 2020; 369 :m1587. doi: 10.1136/bmj.m1587
22. Ui Mhaonaigh, A., Coughlan, A.M., Dwivedi, A., Hartnett, J., Cabral, J., Moran, B., Brennan, K., Doyle, S.L., Hughes, K., Lucey, R., Floudas, A., Fearon, U., McGrath, S., Cormican, S., De Bhailis, A., Molloy, E.J., Brady, G., Little, M.A. Low Density Granulocytes in ANCA Vasculitis Are Heterogenous and Hypo-Responsive to Anti-Myeloperoxidase Antibodies. *Frontiers in Immunology* (2019); 10:2603. PMID: 31781107.
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24. **Walls GM**, Hanna GG, Eakin RL, Young L, McAleese J. Re: Mercieca et al. Implementing the Royal College of Radiologists Radiotherapy Target Volume Definition and Peer Review Guidelines: More Still to Do? *Clinical Oncology* (R Coll Radiol) 2020;32(5):343.
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26. **Walls G**, McAleer J, Hanna G. Perception of modern radiotherapy learning: study protocol for a mixed methods analysis of trainees and trainers at a United Kingdom cancer centre. *BMJ Open*. 2020; in press.



END OF YEAR COUNTDOWN! **30**

In 2017 we welcomed our first ICAT Fellows



www.icatprogramme.org



END OF YEAR COUNTDOWN! **29**

In 2018 we welcomed our 2nd cohort of ICAT Fellows



www.icatprogramme.org

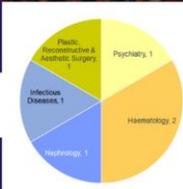


END OF YEAR COUNTDOWN! **28**

In 2019 we welcomed our 3rd cohort of ICAT Fellows



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END OF YEAR COUNTDOWN! **27**

The highlight of the year is our annual ICAT Retreat! Some photos from **2017**



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END OF YEAR COUNTDOWN! **26**

The highlight of the year is our annual ICAT Retreat! A snapshot of our 2nd Retreat **2018**



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END OF YEAR COUNTDOWN! **25**

The highlight of the year is our annual ICAT Retreat! Some photos from **2019**



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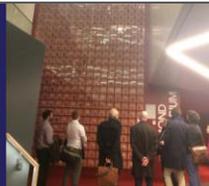


END OF YEAR COUNTDOWN! **24**

ICAT hosts regular Study Days to promote interaction between our Fellows, with talks, tours and workshops



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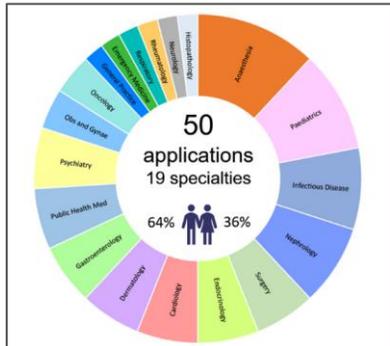


END OF YEAR COUNTDOWN! **23**

New ICAT Fellows are welcomed at an annual Induction Event



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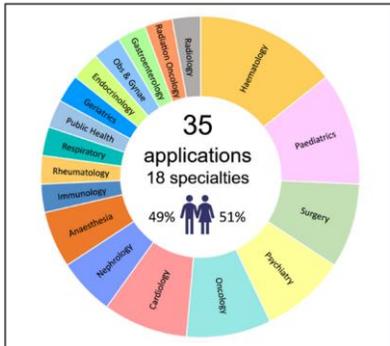


END OF YEAR COUNTDOWN! **22**

We received 50 applications for our first fellowships for trainees in 19 clinical specialties



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END OF YEAR COUNTDOWN! **21**

We received 35 applications to our 2nd fellowship call, from trainees in 18 clinical specialties



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152
Executive Team meetings... so far!

END OF YEAR COUNTDOWN! **10**

Behind the scenes
ICAT is managed by an
Executive Team

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END OF YEAR COUNTDOWN! **09**

Our calendar of events keeps our
Fellows in touch throughout the year

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ICAT Year 1 focuses on the
development of PhD proposals

END OF YEAR COUNTDOWN! **08**

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ICAT Fellows - Cohort 1

ICAT Fellows are encouraged to
collaborate
across
institutions

END OF YEAR COUNTDOWN! **07**

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ICAT Fellows - Cohort 2

ICAT Fellows are encouraged to collaborate across institutions

END OF YEAR COUNTDOWN! **06**

ICAT was funded in 2016 by Wellcome
and the Health Research Board

ICAT is one of 12 Wellcome Clinical PhD Programmes
and the only one in Ireland

END OF YEAR COUNTDOWN! **05**

152 Executive Team meetings

3 Retreats

27 Fellow publications

5 ICAT babies

3 Years

22 Fellowships

85 Interviews

13 Study Days

3 events

178 Applications

9 Steering Committee meetings

END OF YEAR COUNTDOWN! **04**

Our regular newsletters keep you up to date with ICAT
programme activities - subscribe on our website!

END OF YEAR COUNTDOWN! **03**

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*Our
Fellows!*

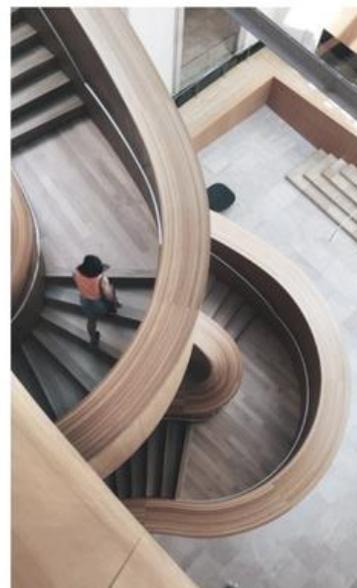
END OF YEAR COUNTDOWN! **02**

We are so grateful for the
support offered by
organisations and
individuals who make
ICAT possible

Thank-you to all and best
wishes for a happy and
successful 2020

END OF YEAR COUNTDOWN! **01**

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