**C2 Statement by the Administering Organisation outlining Strategic Alignment**

* This letter must be approved by your head of school and an email from your head of school approving the content of this letter must be forwarded to RSO ([Grants.RSO@unsw.edu.au](mailto:Grants.RSO@unsw.edu.au)) in order for us to process it. It is your responsibility to ensure this is provided to us.

**ARC *Future Fellowships* Applicant Dr Dmitriy Zanin [FT190100442]**

Dr Dmitriy Zanin is a gifted researcher. In the 7 years at UNSW since obtaining his Doctorate in 2011 Dr Zanin has published over 50 peer reviewed journal articles in Mathematics, over half of which are in the highest rank of Mathematics journals according to the ERA classification, and published 1 monograph that is rapidly becoming the standard reference for its area. His potential as a future research leader has been recognised by the award of an ARC DECRA for the period 2015-2018 titled "A new concept of independence in non-commutative probability theory" and, currently, a Scientia Fellowship in the School of Mathematics and Statistics at UNSW.

His research achievements span several fields within Pure Mathematics and involve an impressive range of co-authors. Outside of his collaboration with his former supervisor, Prof. Fedor Sukochev, who is Chair of Pure Mathematics at UNSW and current Australian Laureate Fellow, Dr Zanin has established research collaborations and authored multiple publications with the foremost international experts in his research areas: in functional analysis Prof. Nigel Kalton (Banach Medal), noncommutative probability Prof. Ken Dykema (co-author of the monograph founding free probability theory), and noncommutative geometry Prof. Alain Connes (Fields Medal and Crafoord Prize Winner). Dr Zanin’s PhD research resulted in a considerable extension of the Birkhoff theorem on doubly stochastic matrices and Khinchine-type and Johnson-Schechtman inequalities on norms of sums of independent random variables in noncommutative probability theory. He has solved outstanding open questions from A. Pietsch, N. Kalton and K. Dykema, leaders in functional analysis, on spectrality and existence of traces on trace ideals that are used extensively in perturbation and scattering theory. With K. Dykema he developed a generalisation to type II von Neumann operator algebras of the Schur decomposition of matrices which is used and taught daily by mathematicians in linear algebra courses. With M. Caspers and D. Potapov he developed a reformulation and solution of a 50-year old problem of the famous Russian mathematician M. Krien on Lipschitz continuity of Lipschitz functions of trace class operators. Dr Zanin’s research output is prolific, a testament to his dedication and work ethic. His ability to master and contribute to the forefront of multiple areas of mathematics is very rare and a talent recognised by other mathematicians of the highest calibre. His growing international profile is a testament to his mathematical insight and his ability to overcome technical challenges that have defeated others.

UNSW, one of Australia's leading research intensive universities, fully supports the application by Dr Zanin for a Future Fellowship Level 1. UNSW’s Strategy 2025 goal of Research Excellence aims to foster researchers of the growing impact and calibre of Dr Zanin in Fundamental and Enabling Sciences. His research in Mathematics, and the topic of this Fellowship, is directly aligned with the School of Mathematics and Statistics’ international strength and world-class profile in noncommutative analysis; a strength Dr Zanin has helped to build. By developing noncommutative versions of actions of symmetries on noncommutative differential manifolds, and noncommutative versions of the Minakshisundaram and Plejel asymptotic expansion of the heat kernel partition function, one of the most central tools in differential geometry and mathematical physics, Dr Zanin’s technical work in his Future Fellowship will have direct applications to new models of the action principles that unify gravitation and the standard model of particle physics, continuing his collaboration with Prof. Connes, one of the most outstanding mathematicians of the last fifty years and winner of the Fields Medal and the Crafoord Prize, both considered equivalents of the Nobel Prize for Mathematics.

The School of Mathematics and Statistics in the Faculty of Science at UNSW has been ranked number one in Mathematics in Australia for each of the past six years in the Academic Ranking of World Universities, and it has received the most ARC Discovery Project funding in Mathematics and Statistics codes totalled over the past five years. The School has the highest ERA rank of 5 in Pure Mathematics. It has two current Laureate Fellows, including Prof. Sukochev in noncommutative analysis. Recognising the importance of the contribution of Prof. Sukochev and Dr Zanin to the School's success, the area of this Fellowship (operator algebras and noncommutative analysis) has been named as one of the core strengths of the School.

The UNSW School of Mathematics and Statistics has a Distinguished Researcher Support Program that will provide $10K support (return air-fare, accommodation allowance and living allowance) for one international visitor for a visit of up to four weeks in each year of the Fellowship. The international visits will bring expertise to the project and help to build enduring international research links that will last beyond the term of the project.

The School of Mathematics and Statistics at UNSW recognises the high value and likely impact of this Fellowship, and will use salary savings to employ a fixed term Lecturer in the area of the Fellowship (i.e. functional analysis). Strong preference will be given to an appointment that can work with the Future Fellow on research directly related to the project. The Fellow will sit on the search committee to ensure that an appropriate voice is given to this selection criterion.

At the conclusion of the Fellowship, the Fellow will return to a continuing appointment in the School of Mathematics and Statistics at UNSW. Dr Zanin’s current 4 year Scientia Fellowship at UNSW, which will be paused for the period of the ARC Fellowship, will be available for Dr Zanin to resume after the completion of the ARC Future Fellowship. This will afford him additional opportunity to focus on research and additional resources to continue his international research collaboration after the Future Fellowship; and is further evidence of UNSW’s investment in Dr Zanin and belief in the quality and potential of his research. He will have a key role in the growth and further development of the School’s research group and world-leading profile in noncommutative analysis.

UNSW assists its researchers in developing and maintaining pathways for their ongoing development. As such, UNSW has several initiatives that provide research staff and students with professional support in planning and developing their careers. These will be available to Dr Zanin. Formal performance appraisals are conducted in all faculties, and our top researchers are proactively mentored through an innovative Research Development Framework program.

In closing, I reiterate UNSW Australia’s strongest support for the application by Dr Zanin for a Future Fellowship in 2019 and welcome the opportunity provided by the Australian Research Council to promote and support research both for the benefit of Australia and the University.

Yours sincerely

Professor Nicholas Fisk  
Deputy Vice-Chancellor (Research)

UNSW Sydney