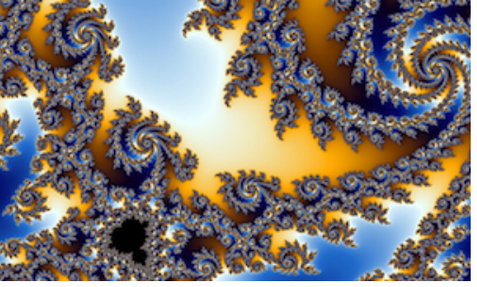

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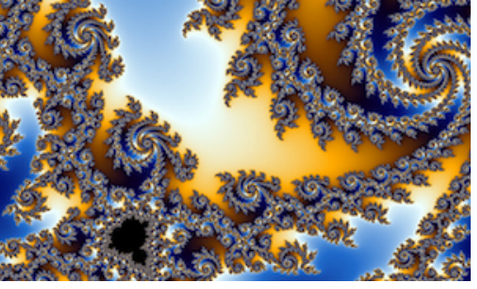
Department of Mathematical Sciences

Research Excellence Framework - REF for Actuarial Sciences?

ACTUARIAL TEACHERS' & RESEARCHERS' CONFERENCE 2019

Professor Kurt Langfeld
Head of Department



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What is REF?

- Research assessment by UK HEI funding bodies:
  - Research England,
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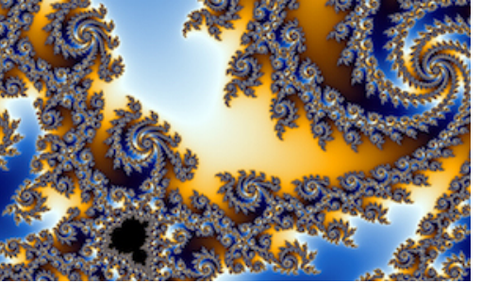

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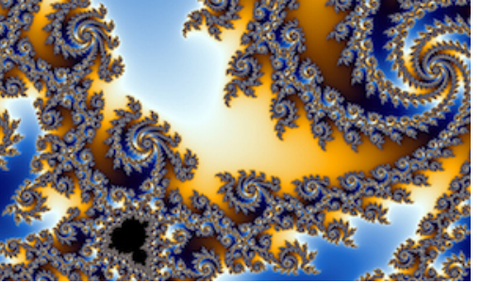

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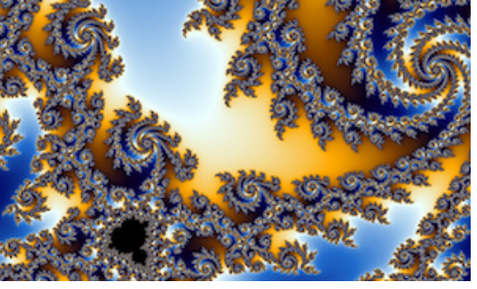
- Purpose?
  - Accountability for public investment in research
  - To provide benchmarking information and establish reputational yardsticks
  - To inform the selective allocation of funding for research



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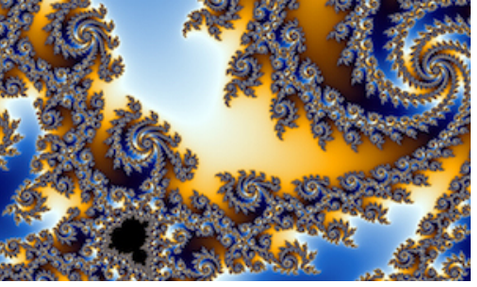

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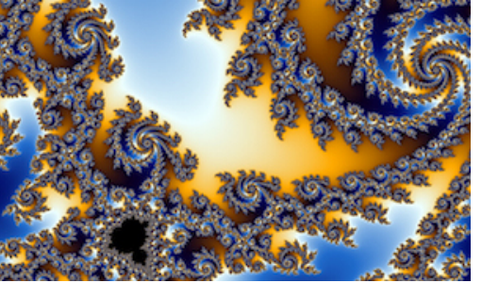
- Impact?

✓ Funding for research: Quality of Research (QR) funding

✓ **Reputational**



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THE COMPLETE UNIVERSITY GUIDE
INDEPENDENT • TRUSTED

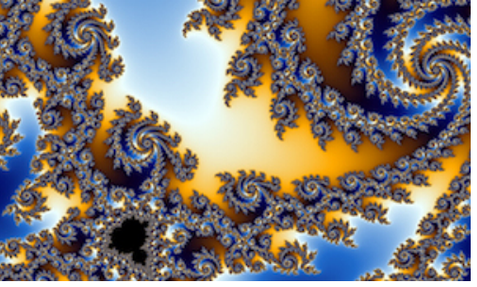
Mathematics League Table 2020

	Rank		University Name	Entry Standards	Student Satisfaction	Research Quality	Graduate Prospects	Overall Score
⌄	1st	▲ 1	Oxford	235	4.18	3.55	91	100.0
⌄	2nd	▼ 1	Cambridge	236	4.26	3.36	89	99.5
⌄	3rd	▶ 0	St Andrews	235	4.12	3.16	88	98.4
⌄	4th	▲ 2	Durham	213	4.08	3.06	86	96.9
⌄	5th	▼ 1	Imperial College London	198	4.12	3.34	84	96.7

➡ Attract the best staff world wide

➡Make the University interesting for students

Fee income!



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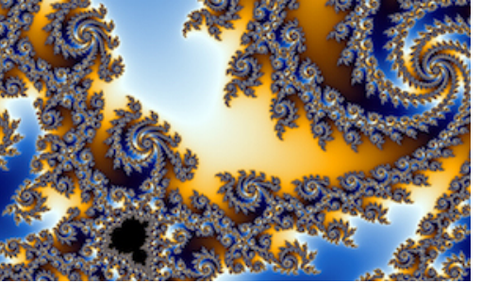
- What is assessed?

✓ **Outputs** (e.g. publications, performances, and exhibitions), **60%**

✓ **Environment** that supports research. **25%**

✓ **Impact** beyond academia **15%**



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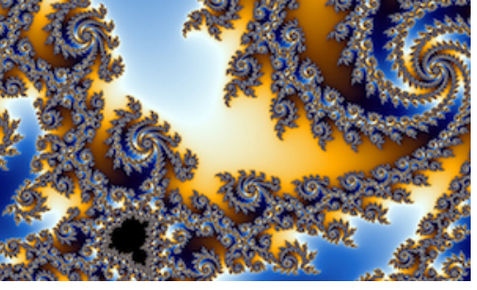

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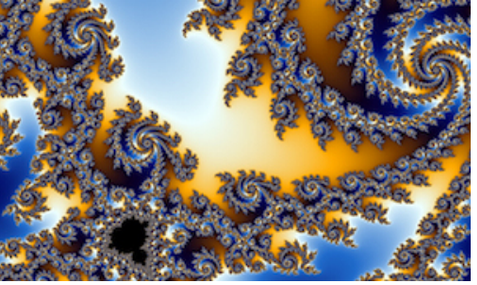
You need to have a certain number of Impact cases to return your FTEs!

For us: 5 Impact cases to return up to 65 FTEs



- How is assessed? Each category has its own definition…

The criteria for assessing the quality of outputs are 'originality, significance and rigour'	
Four star	Quality that is world-leading in terms of originality, significance and rigour.
Three star	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.
Two star	Quality that is recognised internationally in terms of originality, significance and rigour.
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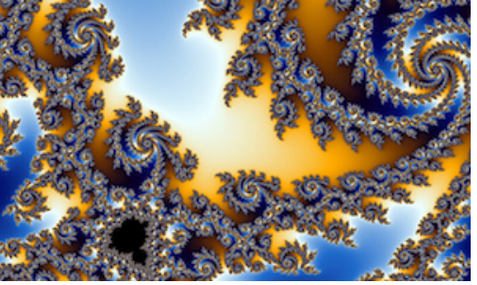

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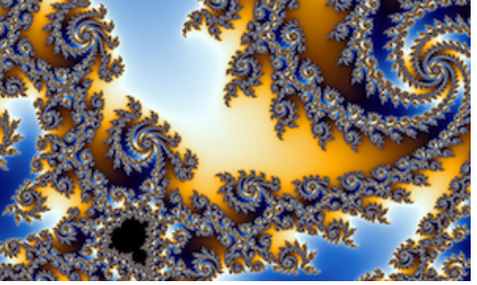

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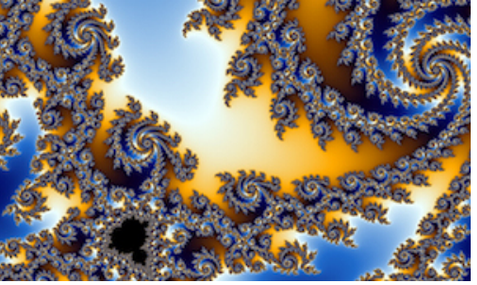

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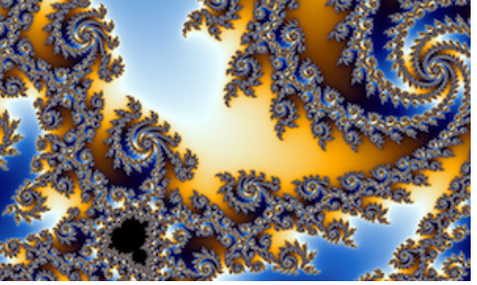

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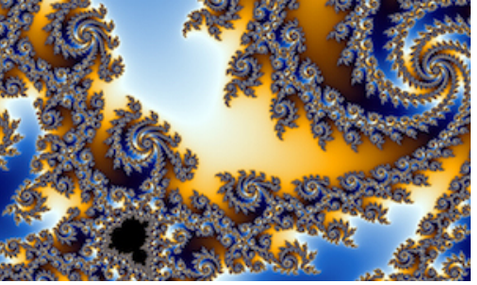

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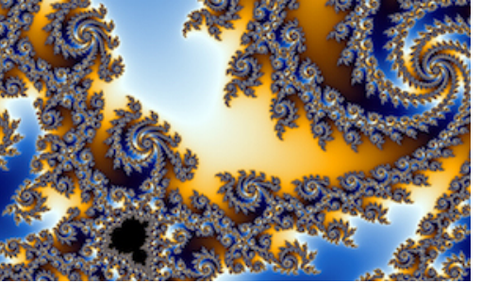

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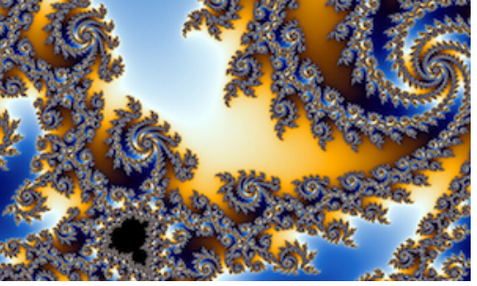
Comments:

1. A four-star (4*) paper in medicine is probably "unclassified" (0*) in Mathematics
2. Universities might use this to assess their research standards



UNIVERSITY OF LIVERPOOL

Department of Mathematical Sciences

- How is assessed?

Overall Quality Profile					
Quality Level	4*	3*	2*	1*	u/c
% of research	15	35	39	11	0

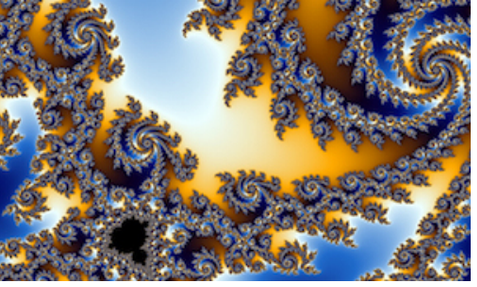
Outputs				
4*	3*	2*	1*	u/c
14.7	31.4	40.3	13.6	0
60%				

Environment				
4*	3*	2*	1*	u/c
10	40	40	10	0
15%				

Impact				
4*	3*	2*	1*	u/c
20	40	35	5	0
25%				

Average star-rating = GPA

Research Power = GPA x FTE



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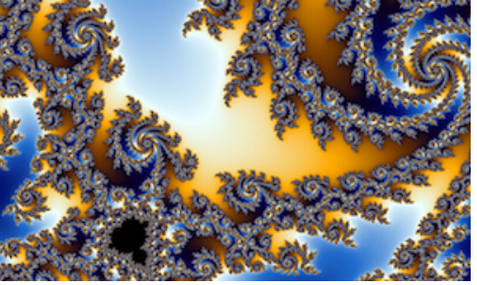
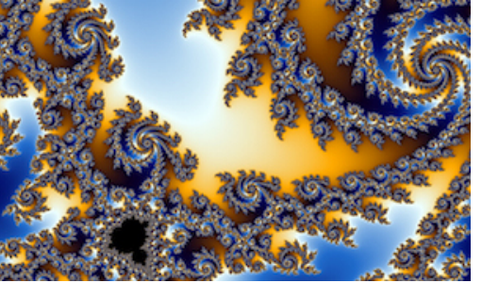
Why am I telling you this at ATRC 2019?



- What is assessed?

Main panel	Unit of assessment	
A	1	Clinical Medicine
	2	Public Health, Health Services and Primary Care
	3	Allied Health Professions, Dentistry, Nursing and Pharmacy
	4	Psychology, Psychiatry and Neuroscience
	5	Biological Sciences
	6	Agriculture, Food and Veterinary Sciences
B	7	Earth Systems and Environmental Sciences
	8	Chemistry
	9	Physics
	10	Mathematical Sciences
	11	Computer Science and Informatics
	12	Engineering

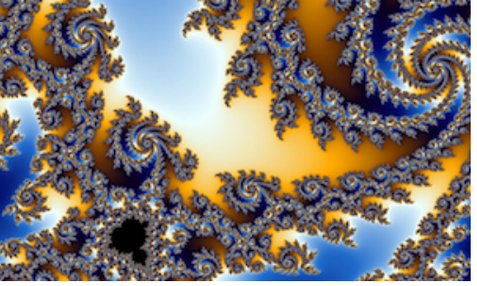


What is assessed?

C	13	Architecture, Built Environment and Planning
	14	Geography and Environmental Studies
	15	Archaeology
	16	Economics and Econometrics
	17	Business and Management Studies
	18	Law
	19	Politics and International Studies
	20	Social Work and Social Policy
	21	Sociology
	22	Anthropology and Development Studies
	23	Education
	24	Sport and Exercise Sciences, Leisure and Tourism

There are at least 7 UoAs to which Actuarial Science can contribute!

D	25	Area Studies
	26	Modern Languages and Linguistics
	27	English Language and Literature
	28	History
	29	Classics
	30	Philosophy
	31	Theology and Religious Studies
	32	Art and Design: History, Practice and Theory
	33	Music, Drama, Dance, Performing Arts, Film and Screen Studies
	34	Communication, Cultural and Media Studies, Library and Information Management

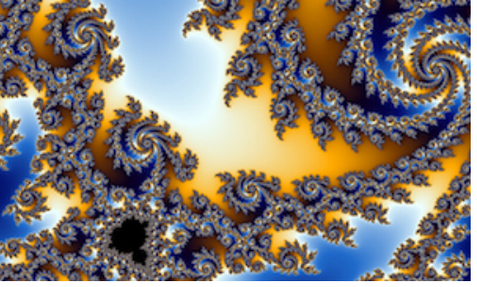


- Subject areas score high if their research is core to a UoA!

REF2014

10 - Mathematical Sciences

- Includes pure mathematics and the development and application of mathematical and statistical techniques. Algebra; analysis; category theory; combinatorics; computational complexity; dynamical systems; geometry; mathematical logic; number theory; ordinary differential equations; operator theory and operator algebras; partial differential equations; probability; stochastic analysis; topology; development, analysis and solution (or approximate solution) of problems arising from mathematical models in areas outside mathematical including associated experimental and computational studies, and the development and application of mathematical theories and techniques that further these; methodological, applied and theoretical research in statistics, probability and mathematical aspects of operational research, including statistical methods, mathematical statistics, applied probability, probability theory, actuarial science, biostatistics, social statistics as well as applications in biology, finance, government, health and social sciences, industry and commerce, medicine and other sciences and fields.
- Applied statistics research whose focus is business or management would not normally be submitted to this panel.
- Physics submissions with a primary mathematical focus may be submitted.



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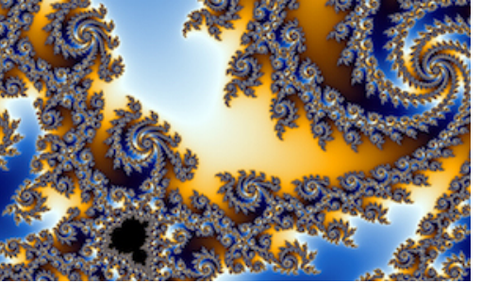
REF2021 - panel criteria and working methods

43. An underpinning principle of the REF is that for each discipline all types of research and all forms of research output shall be assessed on a fair and equal basis. Panels have been instructed to define criteria and adopt assessment processes that enable them to recognise, and treat on an equal footing, excellence in research across the spectrum of



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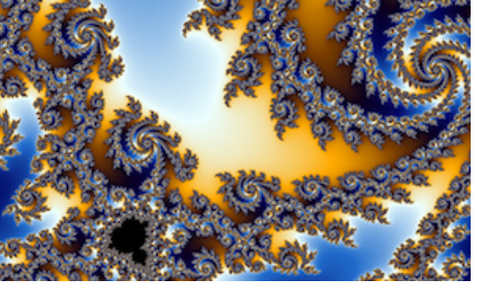
Main Panel

Chair	
Professor Alison Etheridge	University of Oxford
Deputy Chair	
Professor John Greenlees	University of Sheffield
Members	
Professor Tara Brendle	University of Glasgow
Dr Philip Jonathan	Shell
Professor John King*	University of Nottingham
Professor Adam Letchford	Lancaster University
Professor Guy Nason	University of Bristol
Professor William Spence	Queen Mary University London



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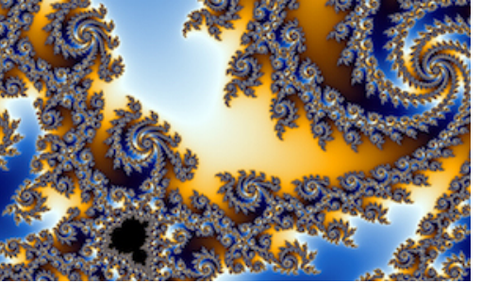
Additional assessment phase members

Professor Simon Blackburn	Royal Holloway, University of London
Professor Richard Craster	Imperial College London
Professor Paul Fearnhead	Lancaster University
Professor Martin Hairer	Imperial College London
Professor Paul Harper	Cardiff University
Professor Mark Haskins	University of Bath
Professor Desmond Higham	University of Strathclyde
Professor Jeanine Houwing-Duistermaat	University of Leeds
Professor Aleksandar Mijatovic	King's College London
Professor Beatrice Pelloni	Heriot-Watt University
Professor Jonathan Pila	University of Oxford
Professor Eugene Shagorodsky	King's College London
Professor Fiona Steele	London School of Economics and Political Science
Professor Michael Wemyss	University of Glasgow
Professor Andrew Wood	University of Nottingham
Professor Grae Worster	University of Cambridge
Professor Sarah Zerbes	University College London



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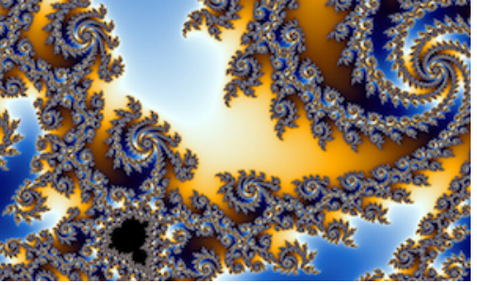
ATRC 2019 offers to opportunity:

- To exchange experience & good practice of Actuarial Sciences units with past REF/RAEs



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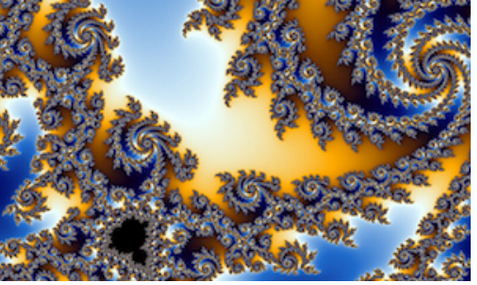
- To exchange views on the representation of Actuarial Sciences research in REF



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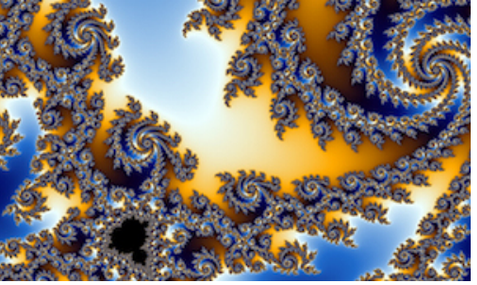
- To discuss ways to perhaps further engage with the REF process



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…now in Q&A or over the Coffee break.

Thank you!