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# Funding creative and transformative research. Comparison of four programmes.

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# Purpose of analysis

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1. Display variety of funding approaches
2. Compare programmes across institutional variables
3. Build programme typology
4. Detect gaps in current research funding

# Four funding programmes

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1. "Showcase Awards" (Wellcome Trust, UK)
2. "Off the beaten track" (Volkswagen Foundation, DE)
3. "21st Century Science Initiative" (McDonnell Foundation, US)
4. "Investigator Programme" (Hughes Institute, US)

# Programme overview

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	Showcase Award	Off the beaten track	21st Century Science Initiative	Investigator Programme
Start year	1996	2001	2000	1985
End year	2003	running	running	running
Target groups	Not specified	Young researcher, top scientists	Junior faculty	Top 10-15 % faculty
Target areas	Biomedical sciences	All fields of science	-Bridging brain, mind, behaviour -Complex systems -Brain cancer	Biomedical sciences

# Selection process

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	Showcase Award	Off the beaten track	21st Century Science Initiative	Investigator Programme
Submission by applicant	X	X		
Submission by institution			X	X
Open, international call		X	X	
Select, national call	X			X
Internal review by funding body	X	X	X	X
External peer review	X	X	X	X
1-step process			X	
2-step process	X	X		X

# Selection criteria

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	Showcase Award	Off the beaten track	21st Century Science Initiative	Investigator Programme
Originality of proposal/candidate	++	++	++	++
Speculative nature/riskiness of project	++	+	+	
Feasibility of proposal			++	
Track record of proposer	+	+	+	++
Potential payback to society	++	-	++	+
Addressing perceived need of society	+	-	+	+
Ability of proposer to communicate to broad audiences	+	+	++	++
Collaboration with other institutions	-	+	-	-

++ "indispensable", + "important", - "not important"

# Duration – Selectivity – Size

	Showcase Award	Off the beaten track	21st Century Science Initiative	Investigator Programme
Average duration of funding	1,5 years	3,1 years	3,7 years	5 years
Average success rate of applications	< 30%	< 50%	< 50%	< 20%
Amount spent per project/person	£ 78.000	€ 400.000	\$ 380.000	\$ 7,5 mio
Amount spent per project/person p.a.	£ 52.000	€ 129.000	\$ 103.000	\$ 1,5 mio
Annual programme spend	£ 2,1 mio	€ 2 mio	\$ 6,8 mio	\$ 450 mio
Share of annual spend/total grants	0,62%	n.a.	n.a.	67%
Share of annual spend/endorowment	0,02%	0,08%	n.a.	3,5%

# Hughes Institute in comparison

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2005 numbers	Hughes Foundation	Princeton University	Yale University	Harvard University
Net endowment/assets (\$ bio)	14,8	10,8	15,2	25,9
Total spend of endowment/ investment earnings (\$ mio)	717	336	567	868
Total number of investigators/ tenured professorial faculty	314	544	890	925

# Programme typology

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	Showcase Award	Off the beaten track	21st Century Science Initiative	Investigator Programme
Clear focus on scientists/groups			X	X
Full cost coverage				X
Filling a funding gap	X	X	X	
High similarity to standard grants	X	X		

# Possible funding gaps: Fields

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1. Biomedical sciences well represented in sample
  - Showcase, Investigator Programme, 21st Century Initiative
  - Study of research breakthroughs (Hollingsworth 2000, Hage 2006)
2. Conspicuous absence of physical sciences
  - Basic research labs in industry (Bell, IBM, GE, Siemens)
  - Restructuring of corporate R&D since early 1990s
  - New regimes: "financial capitalism" and "globalisation"

# Possible funding gaps: Young scientists and new institutions

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1. Programmes tend to focus on established faculty
  - Investigator Programme, Showcase, Off the beaten track
  - CREA study suggests that junior staff is highly important in scientific progress
2. Programmes tend to support established institutions
  - Organizational restructuring and new institutions (Hollingsworth 2000, Hage 2006)
  - Relative continuity in institutional landscape of science in the past 30 years