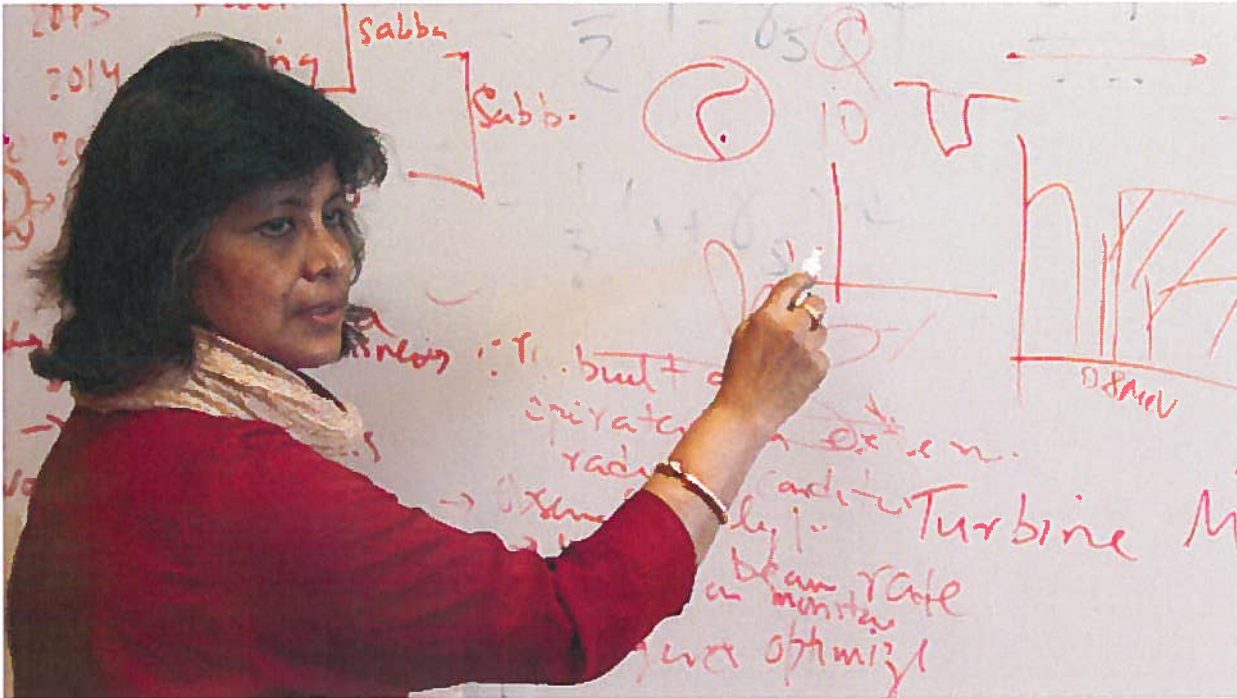# THE GLOBE AND MAIL

York University Professor Sampa Bhadra in her office in the Petrie Science and Engineering Building at York University, March 21, 2012.

Fernando Morales/The Globe and Mail

Who are Canada's research stars?

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With intense competition for research funding and status, universities need an objective way to rank their departments' research performance, say the creators of a new tool designed to do just that.

"Currently there is no reliable, accessible way for universities to get data on how their individual departments are performing in terms of research citations," says Alex Usher, president of Higher Education Strategy Associates (HESA). "We have created a bibliometric product, HiBAR,

that offers them the opportunity to do so."

Highlights of the first Canadian version of HiBAR – or Hirsch-Index Benchmarking of Academic Research – are published here today, providing a broad measurement of which researchers wield the most influence in their fields. It uses a large database created by HESA of every Canadian university faculty member, then creates an H-index score for each using raw data from Google Scholar.

Once such rankings are available, says Mr. Usher, universities may want to use them, especially in the face of increasing outcome measurement pressures and competition for research funding and academic prestige.

The H-index is a bibliometric index developed in 2005 by Professor Jorge Hirsch, a University of California physicist. A researcher's H-index score is the maximum number of publications for which each publication is cited at least that many times. "Our goal is to create benchmarks our clients [universities] can use to assess academic performance in a way that's appropriate for their peer group and discipline," says HESA research associate Paul Jarvey.

The client identifies what constitutes a peer group so that the ranking comparisons are apple-to-apple. "That would mean you don't measure a large research-intensive graduate school against a smaller liberal arts school focusing on undergraduate teaching," Mr. Jarvey says.

The H-index is not foolproof, nor is Google Scholar's raw data. But Mr. Usher says it has advantages over other bibliometric calculations: it considers both productivity and impact, is not influenced by a small number of very successful articles, discounts the value of papers that are not influential and uses publicly available data.

Neither of the federal funding bodies, Social Sciences and Humanities

Research Council (SSHRC) nor Natural Sciences and Engineering Research Council (NSERC) ask research grant applicants for an H-index score. "We are looking to determine the qualitative merits of a proposal," says Gisele Yasmeen, SSHRC Vice President of Research. Review of an applicant's peer-reviewed publications is part of that, she says.

On behalf of NSERC Professor Yves Gingras, scientific director at the Observatoire des Sciences et des Technologies (OST) at the Université du Quebec à Montréal, said: "We at OST would never recommend it and even less so if the intended purpose is the evaluation of individual researchers or academic units."

The flaws of the H-index evaluation cited by detractors include: unreliable author searches; older researchers have a clear advantage; and citation practices differ between sub-fields within a discipline.

But HESA says many of the flaws attributed to the H-index have been accounted for. It says it has improved the reliability of the author searches and is considering a way to control for researcher age. Mr. Usher and Mr. Jarvey say one of their main goals with HiBar is to move international research rankings away from surveys, toward more objective bibliometric measurements.

Special to The Globe and Mail

	NAME	UNIVERSITY	H-INDEX SCORE		NAME	UNIVERSITY	H-INDEX SCORE
Agricultural sciences	Fikret Berkes	Manitoba	42	Gender Studies	Geraldine Pratt	British Columbia	25
	George Foxcroft	Alberta	38		Sneja Gunew	Queen's	19
	Randall Peterman	Simon Fraser	38		Margaret Little	Queen's	19
Anthropology	Colin Chapman	McGill	23	Geography	David Ley	British Colombia	36
	Bernard Chapais	Montréal	21		Meric S. Gertler	Toronto – St. George	28
	Michael Lambek	Toronto – Scarborough	19		Jamie Peck	British Colombia	28
Biology & Biological Science	Robert E. W. Hancock	British Colombia	81	Geology and Earth Sciences	Jan Veizer	Ottawa	43
	Paul Hebert	Guelph	60		Rob Kerrich	Saskatchewan	41
	Spencer C Barrett	Toronto – St. George	58		Ingrid Pickering	Saskatchewan	41
Business	Henry Mintzberg	McGill	58	History	Natalie Z. Davis	Toronto – St. George	20
	Izak Benbaset	British Columbia	56		Peter Ward	British Colombia	19
	Gilbert Laporte	HEC Montréal	44		Edward Shorter	Toronto – St. George	18
Chemistry and Biochemistry	Stephen G Withers	British Columbia	68	Language and Translation	Lynne Bowker	Ottawa	25
	Lewis Kay	Toronto – St. George	66		Sylvie Lambert	Ottawa	15
	Jeff R. Dahn	Dalhousie	63		Rehner, K	Toronto – Mississauga	15
Computer Science	Geoffrey E. Hinton	Toronto – St. George	67	Law	Rebecca Cook	Toronto – St. George	26
	John Mylopoulos	Toronto – St. George	61		Ernest Weinrib	Toronto – St. George	22
	Michel Gendreau	Montréal	57		James Tully	Victoria	20
Criminology	Paul J. Brantingham	Simon Fraser	19	Linguistics	Fred Genesee	McGill	44
	Robert M. Gordon	Simon Fraser	18		Lydia White	McGill	38
	Jean Proulx	Montréal	17		Joseph Paul Stemberger	British Columbia	29
Design, Urban design, and Urban Planning	Cormack Gates	Calgary	21	Mathematics and Statistics	Ivan Stojmenovic	British Columbia	37
	Andrejs Skaburskis	Queen's	20		Radford M. Neal	Toronto	33
	Ahmed El-Geneidy	McGill	14		Hari M. Srivastava	Victoria	33
International Development	Jonathan Crush	Queen's	20	Nutritional Sciences	Errol B. Marliss	McGill	51
	Huw Lloyd-Ellis	Queen's	14		Peter J.H. Jones	Manitoba	48
	David A. McDonald	Queen's	14		David Kitts	British Columbia	39
Economics	John Whalley	Western Ontario	42	Political Science	Will Kymlicka	Queen's	40
	W. Erwin Diewert	British Columbia	42		André Blais	Montréal	37
	Christian Gourieroux	Toronto – St. George	39		Colin Campbell	British Columbia	34
Engineering (Biological)	Kullervo Hynynen	Toronto – St. George	53	Philosophy	Mario Bunge	McGill	34
	John R. Grace	British Columbia	42		Charles Taylor	McGill	32
	Molly S. Shoichet	Toronto – St. George	40		Colin Macleod	Victoria	28
Engineering (Chemical)	S. Zhu	McMaster	40	Physics, astrophysics, and astronomy	Ray Carlberg	Toronto – St. George	66
	A E. Hamielec	McMaster	39		Sampa Bhadra	York	66
	J.L. Brash	McMaster	38		William Trischuk	Toronto – St. George	65
Engineering (Civil)	Peter Rasmussen	Manitoba	38	Psychology	Patrick McGrath	Dalhousie	61
	R. Kerry Rowe	Queen's	26		Morris Moscovitch	Toronto – St. George	59
	Kevin Kennedy	Ottawa	24		Brian Cox	Manitoba	55
Engineering (Computer and Electrical)	Witold Pedrycz	Alberta	55	Public Health Policy	Ghali W.A.	Calgary	41
	Geoffrey E. Hinton	Toronto – St. George	53		Morris L. Barer	British Columbia	38
	Ching Y. Suen	Concordia	49		Michel Rossignol	Montréal	38
Engineering (Mechanical)	Ravin Balakrishnan	Toronto – St. George	45	Religious Studies	Michael Lambek	Toronto – St. George	21
	Yusuf Altintas	British Columbia	43		Simon Coleman	Toronto – St. George	16
	Mark S. Fox	Toronto – St. George	41		Arvind Sharma	McGill	14
English and Cultural Studies	Henry A. Giroux	McMaster	51	Social Work	Jane Aronson	McMaster	19
	Linda Hutcheon	Toronto – St. George	25		Michael Ungar	Dalhousie	19
	David Miall	Alberta	20		Kevin M. Gorey	Windsor	16
Environmental Studies	John P. Geisy	Saskatchewan	66	Sociology	Barry Wellman	Toronto – St. George	59
	Timothy Moore	McGill	39		Robert A. Stebbins	Calgary	31
	Andrew Hendry	British Columbia	38		Monica Heller	Toronto	25
Forestry	Kermit Ritland	British Columbia	41				
	Jack Saddler	British Columbia	40				
	Ellen MacDonald	Alberta	35				

Note: Researchers at University of Toronto's main campus (St. George) are ranked separately from its satellite campuses (e.g. Scarborough).

SOURCE: HIGHER EDUCATION STRATEGY ASSOCIATES