GBAnalytic #14: Return on Investment of Researchers

GBAnalytic #14 was developed by the Group on Business Affairs (GBA) Data and Benchmarking Committee and collected information on what schools consider when assessing the return on investment (ROI) of a researcher and the overall ROI the institution has made in research through its hires. The data collected was intended to help peer institutions consider their own policies, methodologies, and incentives and what metrics to include in these analyses; to determine whether schools need to collect or analyze additional data around research ROIs; and to identify key factors to consider and present in a dashboard when assessing their ROI. The data collected is both at the department and institution-level.

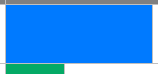
The survey was distributed in October 2022 to all GBA members and responses were due November 2022. Fifty-six responses were collected to the survey, which represented forty-six schools. Five schools did not provide their institution's name. Participants had the option to indicate whether they were submitting data that represented institutional policies or department policies. A third option was departmental policies were the same as the institutional policies.

Survey data is reported based on two cohorts: institutional and same policies for both departments and the institution; and departmental policies.

Please indicate the area that you are responding for:

Response	20%40%60%80%100%	Frequency	Count
Department Level.		14.3%	8
Institutional Level		66.1%	37
Both - we have the same policies for our institution and across our departments		19.6%	11
Valid Responses			56

For the eight departments that responded their policies were set at the department level, seven provided data on the composition of their researchers and the name of the department.

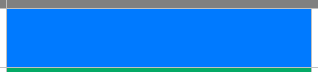
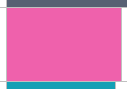
Response	20%40%60%80%100%	Frequency	Count
My department has only basic science researchers		42.9%	3
My department has only clinical science researchers		14.3%	1
My department has a mix of both basic science and clinical science researchers		42.9%	3
Valid Responses			7

Departments: Physiology; Emergency Medicine; Internal Medicine; The Department of Family and Preventive Medicine; Cellular Biology & Pharmacology, Human & molecular Genetics, Immunology & Nano-Medicine and Translational Medicine; Clinical Research Institute

Institutional Policies

The following responses represent schools that indicated they either have an institutional policy, or they have the same policies for their institution and across their departments.

We consider the following metrics when assessing the ROI of a new researcher – Assistant Professor with 3-5 years of experience. Respondents were allowed to select their top 5 choices.

Response	20% 40% 60% 80% 100%	Frequency	Count
Amount of NIH dollars		**70.8%**	**34**
Sponsored salary support as a percent total salary		**70.8%**	**34**
Indirect cost recovery per square foot of lab space		47.9%	23
Publications		43.8%	21
Overall Research Revenues per PI		39.6%	19
Dollar Amount of grants funded/number of grants of grants submitted (percentage)		27.1%	13
Journal impact factor of publications		25.0%	12
Number of NIH grants		22.9%	11
Whether the researcher meets their targets at the end of their start-up term (only new)		22.9%	11
Number of successful submissions/number of submissions (percentage)		20.8%	10
Overall Submissions per PI		18.8%	9
Whether your researcher is a PI versus co-PI		18.8%	9
Modified direct total costs of lab space - trending		14.6%	7
Reputational Impact (qualitative)		14.6%	7
Complexity factor of grant submissions (what kinds of grants are you going for?)		8.3%	4

Training grants which benefit the institution		8.3%	4
Modified direct total costs of lab space in real time		4.2%	2
Technology/Commercialization Licensing & Patent royalties		4.2%	2
Other		4.2%	2
Philanthropy funded research		2.1%	1
		Valid Responses	**48**

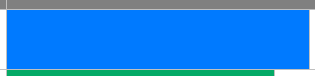
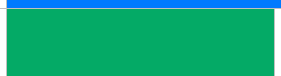
Other: Mentoring and service; Two specific measures not listed above: Number of publications as first or last author and being a mentor or participating faculty member (instead of PI) on a T, F, or K training award

Per your published policies, what is your average time frame for start-up packages for your new researchers?

Response	20% 40% 60% 80% 100%	Frequency	Count
One year		0.0%	0
Two years		0.0%	0
Three years		63.0%	29
Four years		10.9%	5
Five or more years		26.1%	12
Valid Responses			46

Two schools did not respond to the above question.

We consider the following metrics when assessing the ROI of an Associate/Full Professor with more than five years of experience. Respondents were allowed to select their top 5 responses.

Response	**20% 40% 60% 80% 100%**	**Frequency**	**Count**
Amount of NIH dollars		**70.8%**	**34**
Sponsored salary support as a percent total salary		62.5%	30
Indirect cost recovery per square foot of lab space		56.3%	27
Overall Research Revenues per PI		43.8%	21
Publications		41.7%	20

Journal impact factor of publications		31.3%	15
Number of NIH grants		27.1%	13
Dollar Amount of grants funded/number of grants of grants submitted (percentage)		18.8%	9
Whether the researcher meets their targets at the end of their start-up term (only new)		18.8%	9
Reputational Impact (qualitative)		16.7%	8
Mentorship/career development of junior faculty		14.6%	7
Modified direct total costs of lab space - trending		14.6%	7
Training grants which benefit the institution		14.6%	7
Overall Submissions per PI		12.5%	6
Number of successful submissions/number of submissions (percentage)		10.4%	5
Technology/Commercialization Licensing & Patent royalties		8.3%	4
Whether the researcher is a PI versus co-PI		8.3%	4
Complexity factor of grant submissions (what kinds of grants are you going for?)		6.3%	3
Modified direct total costs of lab space in real time		6.3%	3
Philanthropy funded research		4.2%	2
Other		2.1%	1
		Valid Responses	**48**

Other: Two other measures: First or last author publications and intra or extra-institutional leadership activities.

Per your published policies, what is your average time frame for start-up packages for Associate/Full Professors?

Response	20% 40% 60% 80% 100%	Frequency	Count
One year		0.0%	0
Two years		0.0%	0
Three years		60.9%	28
Four years		13.0%	6
Five or more years		26.1%	12
We do not offer start-up packages for researchers at this level		0.0%	0
Valid Responses			46

Two schools did not respond

Per your published policies, on average, what is the length of time that you offer bridge funding to your Associate/Full Professors?

Response	20% 40% 60% 80% 100%	Frequency	Count
One year		61.9%	26
One and a half years		11.9%	5
Two years		21.4%	9
Two and a half years		0.0%	0
Three years		4.8%	2
Three and a half years		0.0%	0
Four years		0.0%	0
More than four years		0.0%	0
Valid Responses			42

Six schools did not respond to this question.

Please share any additional information that would be helpful in better understanding how your school determines the return on investment of your researchers. If you have links to any policies, please share them here.

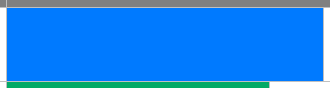
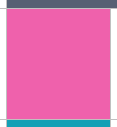
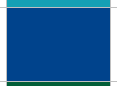
- This is primarily looked at during annual evaluations. The metrics followed are a little heterogenous amongst departments. We are in the midst of attempting to look at cross departmental metrics.
- Grant salary recovery vs total salary;
- Indirect cost recovery

- We do not currently look at ROI of researchers but I answered the questions based on what I think we should look at. I am very interested in the results of this survey to help us develop an ROI model for our researchers. Thank you.
- I checked "no" for the willing to share on a future call only because we really don't have formal guidelines, it is more of an ad hoc process and we are developing dashboards and KPIs but that is a work in progress so not much to share.
- We do not have data for an average duration of bridge funding as we have not provided central support for unfunded faculty in recent years. We have mechanisms that allow faculty and departments to accumulate reserve funds, which we expect them to use as the first lines of defense against any funding shortfalls. Faculty are expected to drawn on their reserves if they experience a funding shortfall. If they do not have sufficient reserves, their department's reserves are the next line of backstop. When departmental or other reserve funds are not sufficient to make up the shortfall without imposing substantive negative outcomes on other commitments deemed critical by the Chair(s) and the Dean, and/or when the Chair(s) and the Dean's Office agree that it is in the best interest of the institution to share in the shortfall, support may be provided.
- Eventually moving to people density in wet lab space, in addition to dollars/nest. We also look at scientific integrity training and lab culture surveys.
- There is some variation from dept to dept.
- Don't believe we have a published policy for length of bridge funding or Assoc/Full Professor start-up packages. Number provided is a guesstimate based on my observations over the 18 months since I joined the institution.
- While it is expected that faculty are able to obtain grant funding to support their operational costs and roughly 50% of their salary, we judge our research faculty primarily by the degree to which their work represents an impactful contribution that opens up a new field or represents highly significant advance in an established field. We try to use the "subtraction test" - if this person were not active in the field, would it matter?
- We don't have formal policies. We have responded based on our practices.
- We tend to provide department level dashboards, that can be drilled down on to the faculty level, with the expectation that department chairs will monitor and provide guidance at the per faculty level. Departmental dashboards are provided for review along with annual budgets
- As a newer school the line to success is not as clear. This is due to the balance of providing UME activity with the balance of developing researchers.
- Grant dollars and indirect cost return are important considerations, though not the sole measures of Return on Investment. We also consider quality of publications, national and international service, grant and journal review participation, and leadership among peers and organizations.
- Startup policy: https://research.chm.msu.edu/images/Documents/CHM_StartupPolicyRev1.pdf
- Bridge funding: https://msu.smapply.io/prog/discretionary_funding_initiative_dfi/
- Stewardship of Expendable and Endowed Awards: https://research.chm.msu.edu/images/Documents/Policy_for_Awards_and_Endowments_web.pdf
- Grant Administration Support: https://hcrs.msu.edu/index.php

- Our researchers are faculty who also must teach. The average faculty member who has grants covers 50% of their salaries.
- Start-up packages in our offer letters are for 3 years, but the PI is allowed to carry funds over several years after that. We don't have written policies about this or the metrics used for ROI - these analyses are prepared on an ad-hoc basis.
- We do not have published policies related to time periods related to start-ups but the practice is in general 3 to 5 years depending on rank. Currently there are not published bridge policies but we do review ad hoc as we work on this.

Departmental Policies

We consider the following metrics when assessing the ROI of a new researcher – Assistant Professor with 3-5 years of experience. Respondents could select their top five choices.

Response	20% 40% 60% 80% 100%	Frequency	Count
Sponsored salary support as a percent total salary		**75.0%**	**6**
Amount of NIH dollars		62.5%	5
Publications		62.5%	5
Number of NIH grants		37.5%	3
Number of successful submissions/number of submissions (percentage)		37.5%	3
Whether the researcher meets their targets at the end of their start-up term (only new)		37.5%	3
Complexity factor of grant submissions (what kinds of grants are you going for?)		25.0%	2
Dollar Amount of grants funded/number of grants of grants submitted (percentage)		25.0%	2
Journal impact factor of publications		25.0%	2
Training grants which benefit the institution		25.0%	2
Whether your researcher is a PI versus co-PI		25.0%	2
Indirect cost recovery per square foot of lab space		12.5%	1
Modified direct total costs of lab space - trending		12.5%	1
Overall Research Revenues per PI		12.5%	1
Overall Submissions per PI		12.5%	1
Philanthropy funded research		12.5%	1
Modified direct total costs of lab space in real time		0.0%	0
Reputational Impact (qualitative)		0.0%	0

Technology/Commercialization Licensing & Patent royalties		0.0%	0
Other		0.0%	0
		Valid Responses	**8**

Per your published policies, what is your average time frame for start-up packages for your new researchers?

Response	20% 40% 60% 80% 100%	Frequency	Count
One year		0.0%	0
Two years		25.0%	2
Three years		75.0%	6
Four years		0.0%	0
Five or more years		0.0%	0
Valid Responses			8

We consider the following metrics when assessing the ROI of an Associate/Full Professor with more than five years of experience. Respondents could select their top 5 choices.

Response	**20% 40% 60% 80% 100%**	**Frequency**	**Count**
Amount of NIH dollars		**85.7%**	**6**
Sponsored salary support as a percent total salary		71.4%	5
Dollar Amount of grants funded/number of grants of grants submitted (percentage)		42.9%	3
Mentorship/career development of junior faculty		42.9%	3
Number of NIH grants		42.9%	3
Overall Research Revenues per PI		42.9%	3
Publications		42.9%	3
Complexity factor of grant submissions (what kinds of grants are you going for?)		28.6%	2
Journal impact factor of publications		28.6%	2

Indirect cost recovery per square foot of lab space		14.3%	1
Number of successful submissions/number of submissions (percentage)		14.3%	1
Philanthropy funded research		14.3%	1
Reputational Impact (qualitative)		14.3%	1
Modified direct total costs of lab space in real time		0.0%	0
Modified direct total costs of lab space - trending		0.0%	0
Overall Submissions per PI		0.0%	0
Technology/Commercialization Licensing & Patent royalties		0.0%	0
Training grants which benefit the institution		0.0%	0
Whether the researcher is a PI versus co-PI		0.0%	0
Whether the researcher meets their targets at the end of their start-up term (only new)		0.0%	0
Other		0.0%	0
		Valid Responses	**7**

Per your published policies, what is your average time frame for start-up packages for Associate/Full Professors?

Response	20% 40% 60% 80% 100%	Frequency	Count
One year		0.0%	0
Two years		12.5%	1
Three years		75.0%	6
Four years		12.5%	1
Five or more years		0.0%	0
We do not offer start-up packages for researchers at this level		0.0%	0
Valid Responses			8

Per your published policies, on average, what is the length of time that you offer bridge funding to your Associate/Full Professors?

Response	20% 40% 60% 80% 100%	Frequency	Count
One year		42.9%	3
One and a half years		0.0%	0
Two years		14.3%	1
Two and a half years		0.0%	0
Three years		42.9%	3
Three and a half years		0.0%	0
Four years		0.0%	0
More than four years		0.0%	0
Valid Responses			7

One school did not answer

Please share any additional information that would be helpful in better understanding how your school determines the return on investment of your researchers. If you have links to any policies, please share them here.

- Bridge funding is actually only for 6 months...not one year.
- We follow school and campus guidelines regarding startup package duration, as well as requirements for promotion to associate and full professor from both the school and the campus. The department has internal policies that provide general guidelines for promotion from assistant to association professor, which reflect those at the campus and school levels.

Participating Schools

Albert Einstein College of Medicine
Case Western Reserve University School of Medicine
Creighton University School of Medicine
Duke University
Duke University, DCRI
Emory University
Florida International university- Herbert Wertheim College of Medicine
Geisel School of Medicine at Dartmouth
George Washington University
Harvard Medical School
Harvard Medical School
Indiana University School of Medicine

Johns Hopkins University
Loyola University Chicago
Medical College of Wisconsin
Medical University of South Carolina
Mercer University School of Medicine
Michigan State University
New York Medical College
Oregon Health & Science University
Pittsburgh
Ponce Health Sciences University
Rush University Medical Center
Rutgers New Jersey Medical School
The Ohio State University
Tufts University School of Medicine
UC Davis Health
UNC-Chapel Hill
Uniformed Services University
University of Arizona - Phoenix College of Medicine
University of Buffalo Jacobs School
University of Colorado
University of Colorado SOM
University of Florida College of Medicine
University of Hawaii John A Burns School of Medicine
University of Illinois College of Medicine
University of Iowa Carver College of Medicine
University of Kentucky College of Medicine
University of Miami
University of Minnesota
University of North Dakota School of Medicine and Health Sciences
University of Utah
University of Washington
University of Wisconsin Madison - School of Medicine and Public Health
University of Wisconsin Madison - Department of Biostatistics and Medical Informatics
UT Health San Antonio
UT Health San Antonio
UT Southwestern
Vanderbilt University - Basic Sciences
VCU School of Medicine
Wayne State University school of medicine

5 schools did not provide their school name. Schools may show up on this list more than once, as there were options to respond for the institution, a department or both

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For questions, please contact gba@aamc.org