

Survey of Bioscience Research Practices in Asia: Questionnaire and Responses

Jennifer Gaudioso¹ and Tamara Zemlo²

International Biological Threat Reduction Program

¹Sandia National Laboratories*, Albuquerque, New Mexico

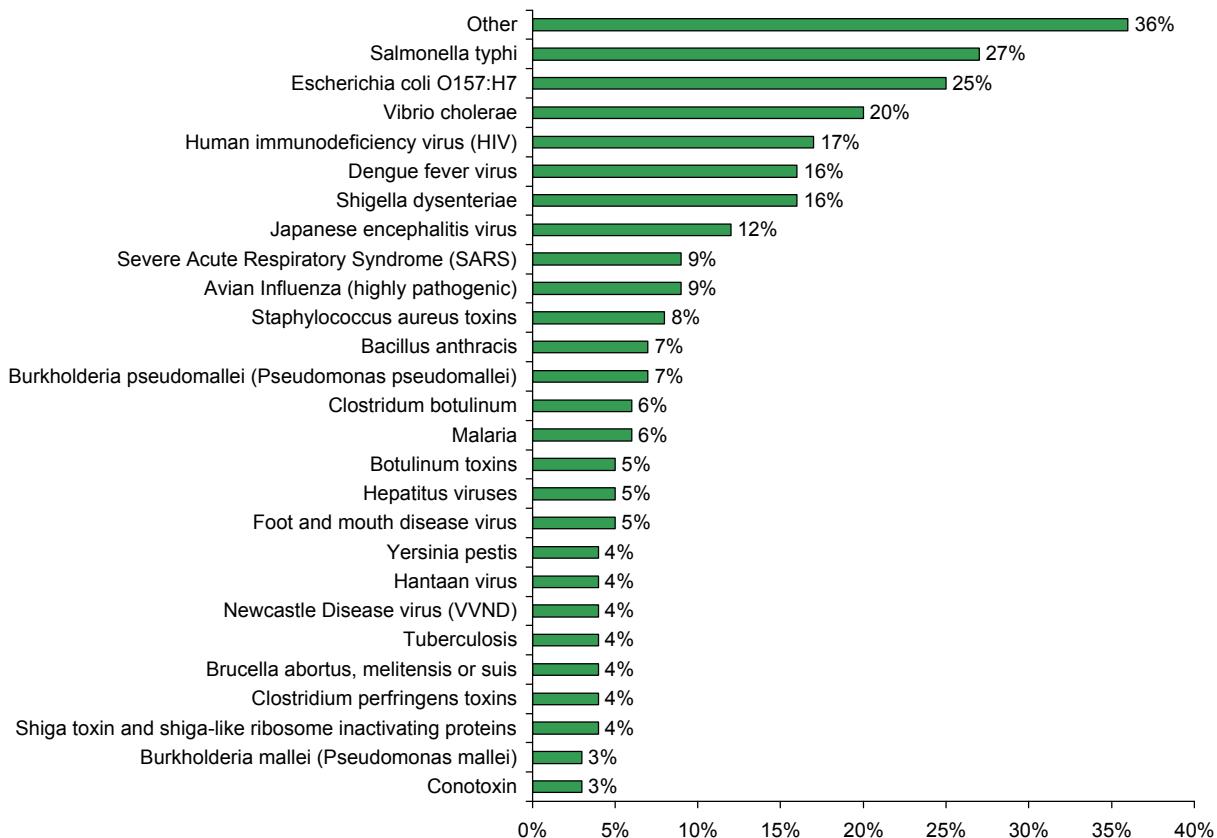
And

²BioInformatics, LLC, Arlington, Virginia

Infectious Agents and Toxins

Question 1

Which infectious agent(s) and/or toxin(s) are studied in your laboratory? (Check all that apply)

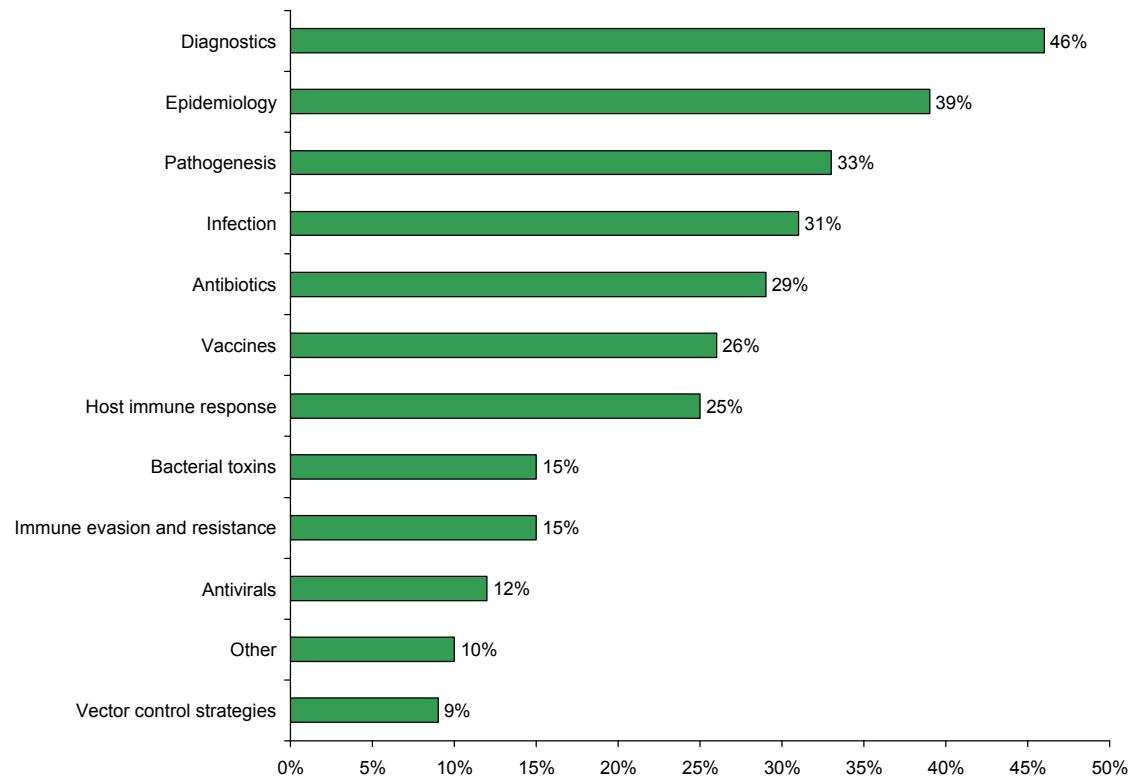


* SAND No. 2008-XXXX

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

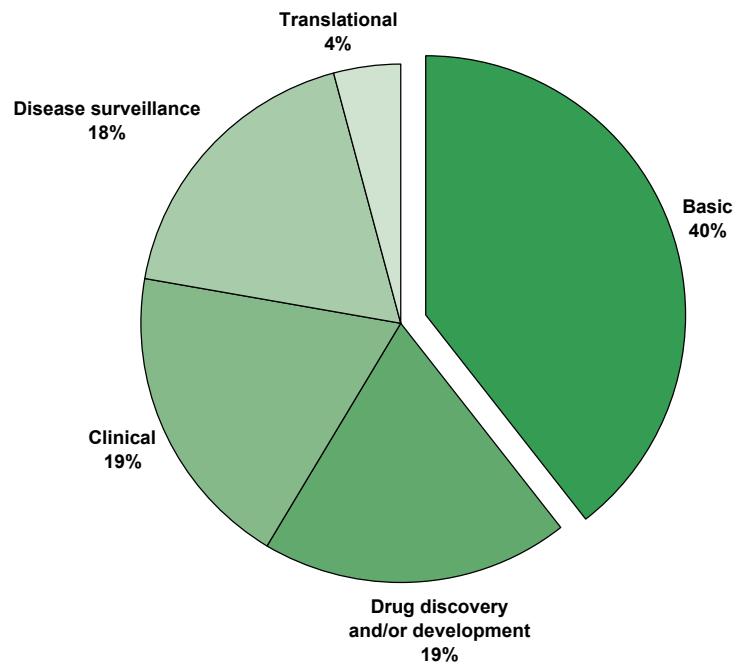
Question 2

What is the specific focus of your laboratory's research with these infectious agents and/or toxins? (Check all that apply)



Question 3

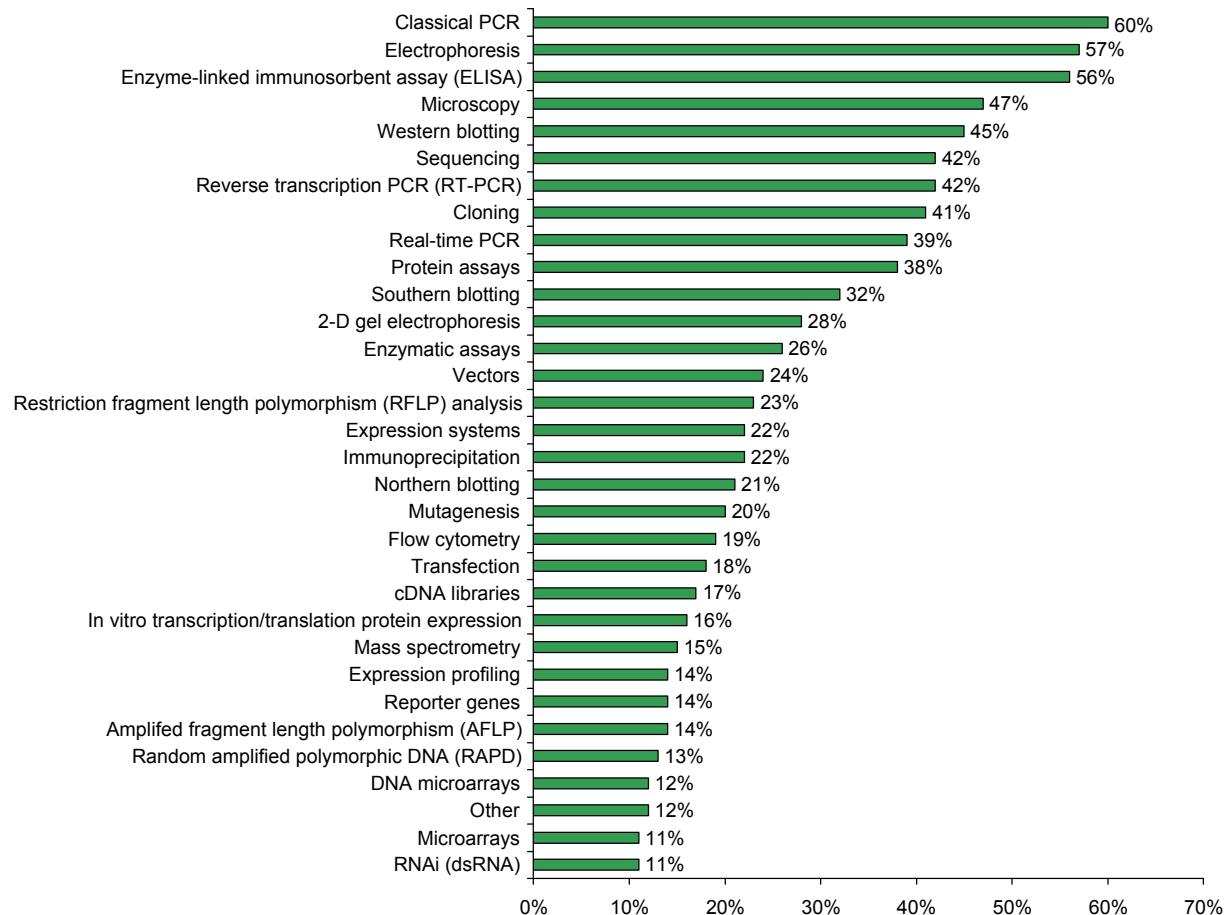
Which of the following BEST characterizes the stage of your laboratory's research with these infectious agents and/or toxins? (Choose only one)



Tools and Techniques

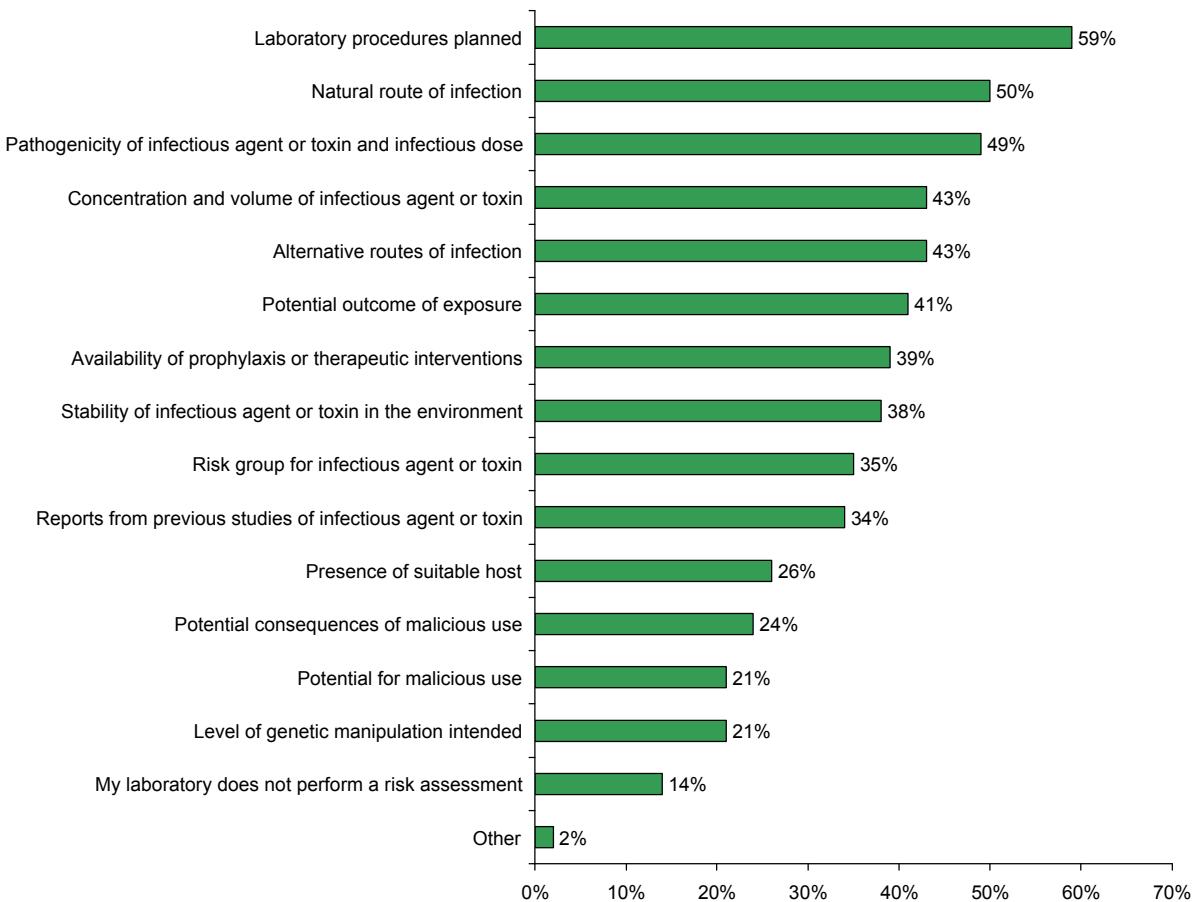
Question 4

What techniques does your laboratory use on these infectious agents and/or toxins?
(Check all that apply)



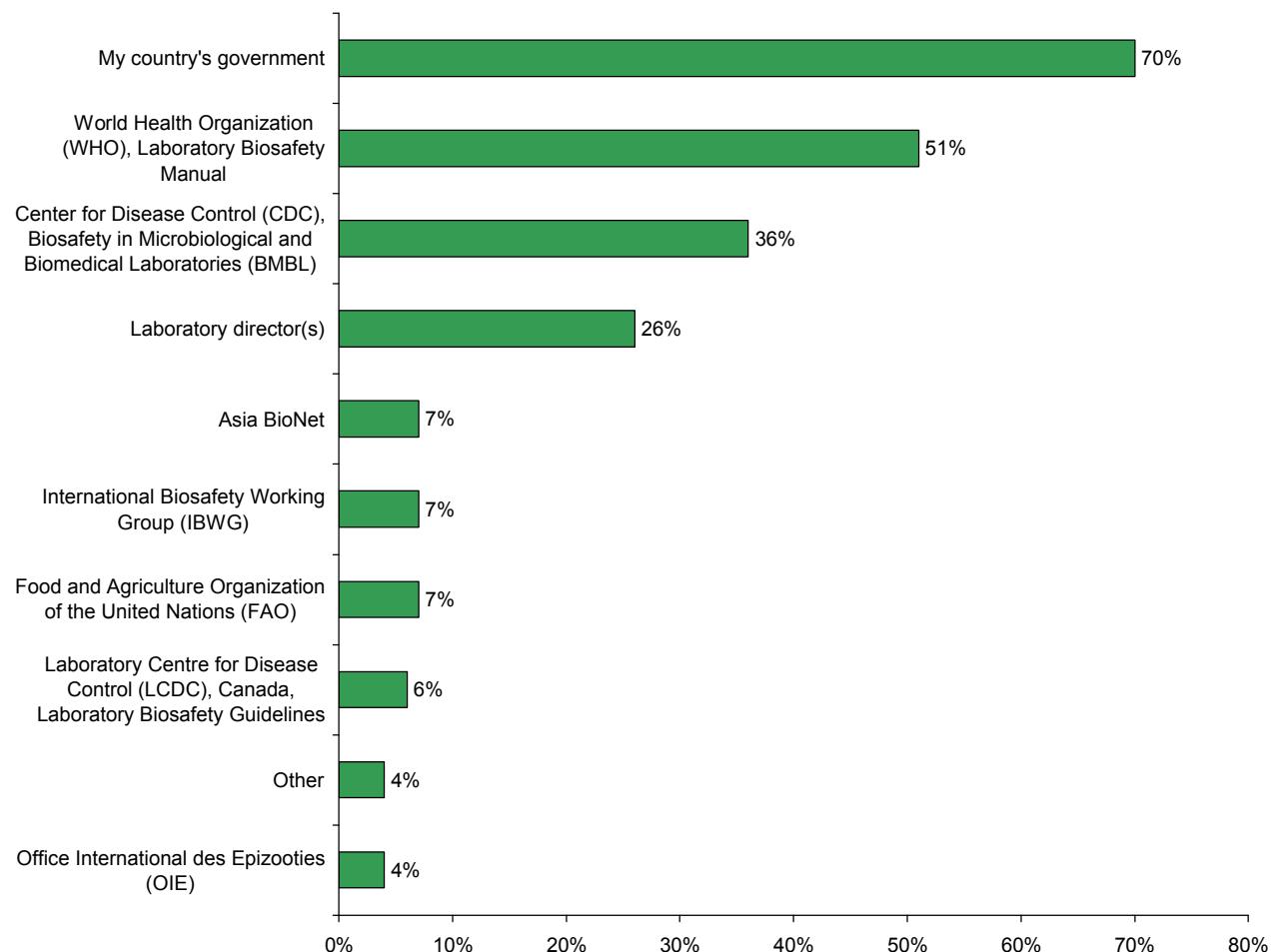
Question 5

Which factors does your laboratory consider when performing a biosafety or biosecurity risk assessment for the infectious agent(s) and/or toxins it studies? (Check all that apply)



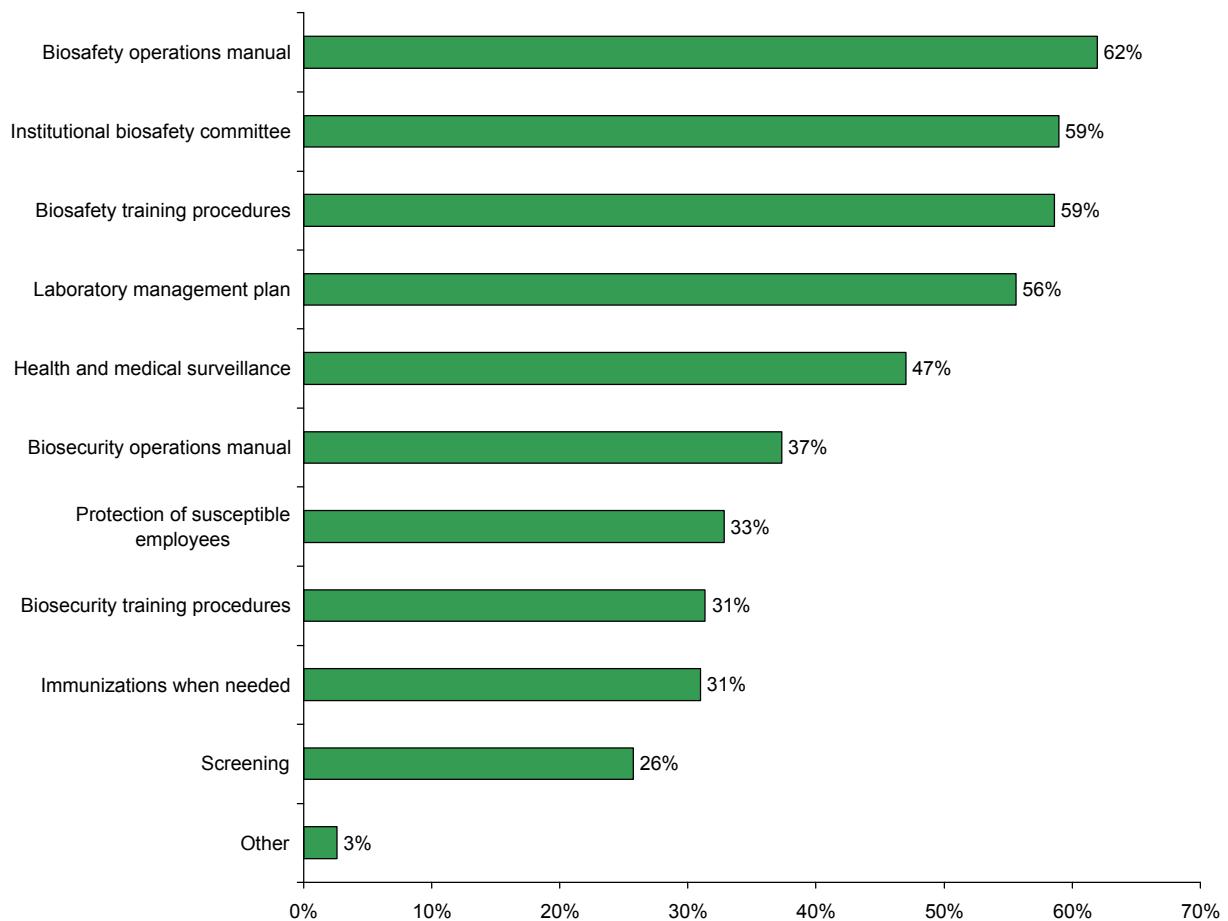
Question 6

From where does your laboratory obtain policies or regulations for ensuring laboratory biosafety and biosecurity? (Check all that apply)



Question 7

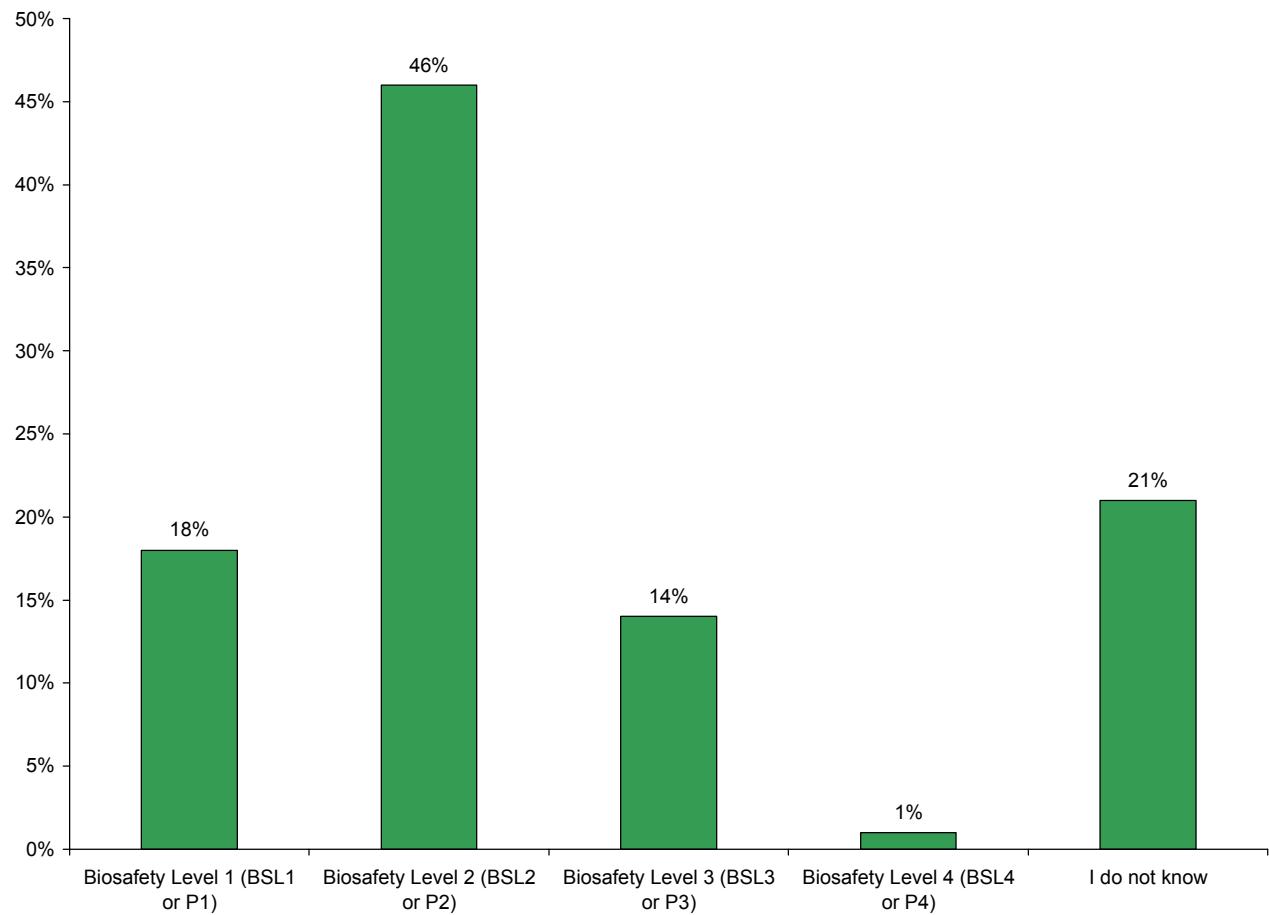
How does your organization manage its biosafety and biosecurity programs? (Check all that apply)



Biosafety Practices

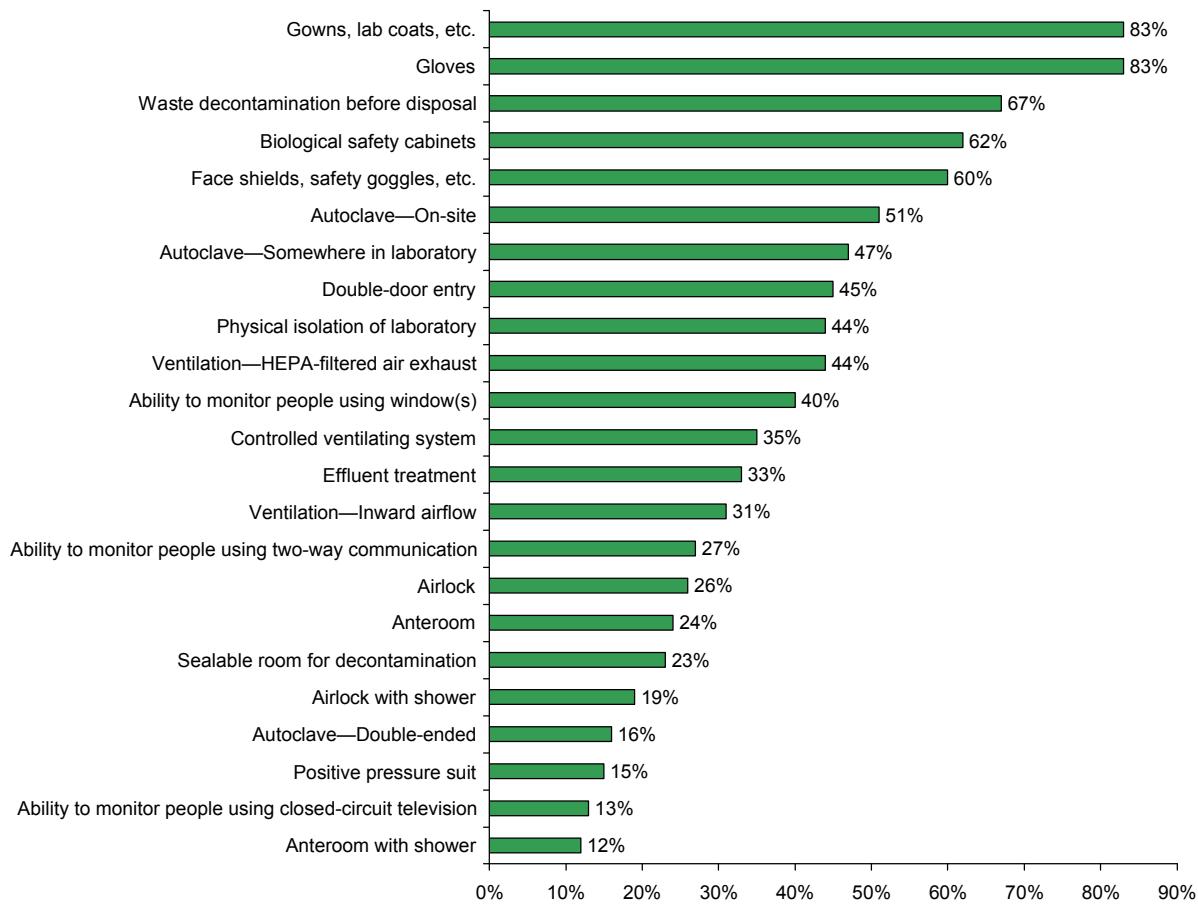
Question 8

At what biosafety level does your laboratory practice when working with these infectious agents and/or toxins? (Choose only one)



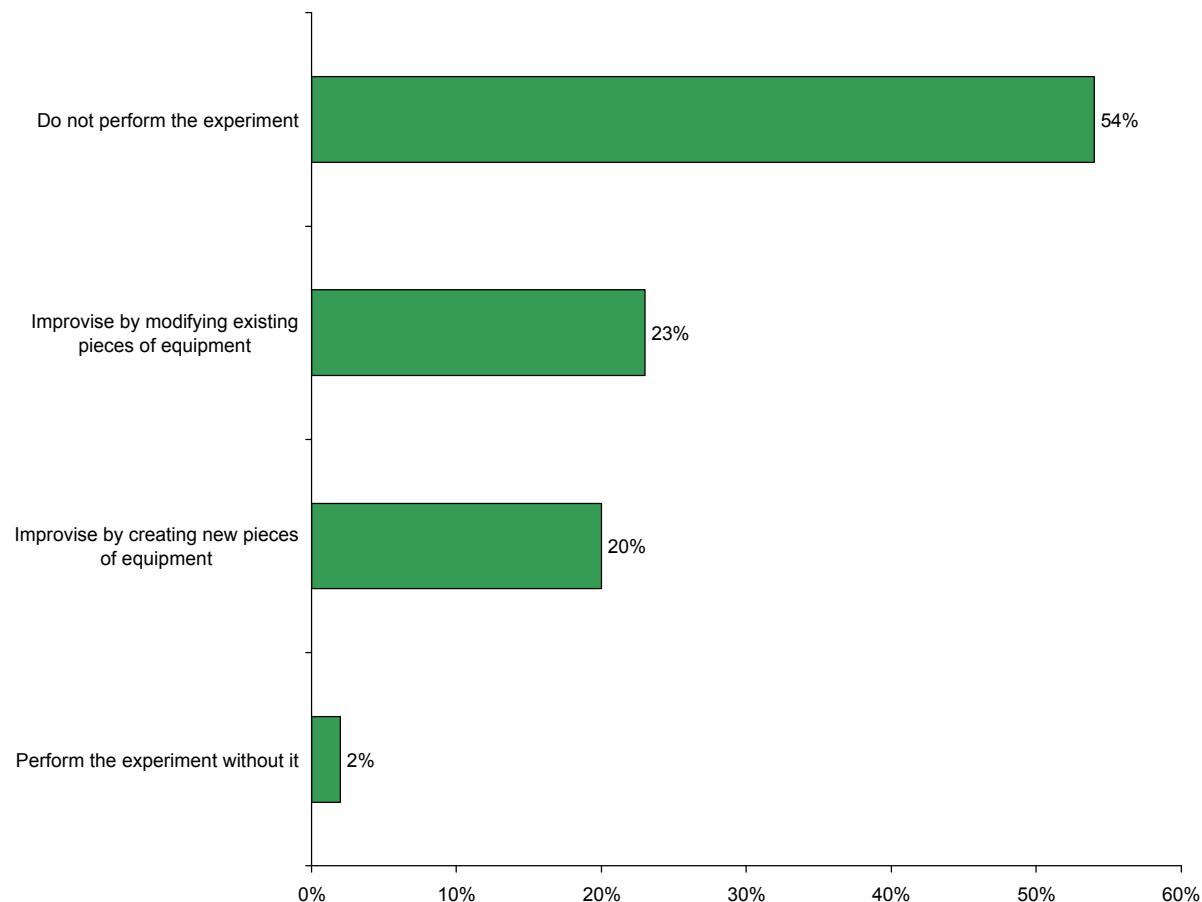
Question 9

Please indicate which types of biosafety practices your laboratory engages in when working with these infectious agents and/or toxins?



Question 10

If your laboratory does not have a particular piece of safety equipment necessary to conduct an experiment, what is TYPICALLY done? (Choose only one)



Biosecurity Practices

Question 11

Please indicate what proportion of the time your lab uses or performs the following physical security measures? (Choose only one for each category)

		All of the time	Most of the time	Some of the time	Little of the time	None of the time	Total Respondents
Please indicate what proportion of the time your lab uses or performs the following physical security measures. (choose only one for each category)	Guard at building entrance(s)	54%	15%	7%	7%	17%	100%
	Locked doors to laboratory room(s)	53%	23%	15%	2%	6%	100%
	Lighted building at night	51%	18%	11%	6%	14%	100%
	Locked cabinets	50%	24%	10%	4%	13%	100%
	Unobstructed views of entrance(s)	45%	16%	11%	6%	22%	100%
	Locked doors to building	44%	28%	14%	5%	10%	100%
	Self-closing doors	41%	17%	8%	3%	31%	100%
	Access control devices	36%	25%	17%	5%	17%	100%
	Locked refrigerators	34%	23%	17%	8%	19%	100%
	Security patrols	33%	22%	19%	7%	19%	100%
	Intrusion sensors and alarms	32%	12%	10%	5%	41%	100%
	Video monitors	25%	10%	4%	4%	57%	100%

Question 12

Please indicate what proportion of the time your lab uses or performs the following personnel security measures? (Choose only one for each category)

		All of the time	Most of the time	Some of the time	Little of the time	None of the time	Total Respondents
Please indicate what proportion of the time your lab uses or performs the following personnel security measures. (choose only one for each category)	Restricted access to laboratory areas	51%	23%	12%	7%	8%	100%
	List of employees who have access to restricted areas	48%	21%	7%	9%	15%	100%
	Photo identification badges	46%	18%	9%	4%	24%	100%
	Records of keycard/key assignments	45%	14%	12%	6%	23%	100%
	Biosecurity training for new employees	44%	21%	17%	10%	8%	100%
	Background screening for potential employees	34%	24%	16%	10%	16%	100%
	Building escorts for non-employees	28%	22%	18%	9%	23%	100%

Question 13

Please indicate what proportion of the time your lab uses or performs the following information security measures? (Choose only one for each category)

		All of the time	Most of the time	Some of the time	Little of the time	None of the time	Total Respondents
Please indicate what proportion of the time your lab uses or performs the following information security measures. (choose only one for each category)	Computers and/or computer files are password protected	54%	22%	11%	5%	8%	100%
	Computer/network security maintained	51%	20%	9%	4%	15%	100%
	Sensitive documentation is destroyed before putting in trash	51%	21%	12%	4%	12%	100%
	Off-site storage of data and/or information is secure	43%	24%	16%	4%	14%	100%
	Storage of paper, tapes, and videos in secure container(s)	38%	28%	14%	5%	14%	100%

Question 14

Please indicate what proportion of the time your lab uses or performs the following material control measures? (Choose only one for each category)

		All of the time	Most of the time	Some of the time	Little of the time	None of the time	Total Respondents
Please indicate what proportion of the time your lab uses or performs the following material control measures. (choose only one for each category)	Laboratory head is aware of all infectious agents and/or toxins studied in lab	76%	18%	3%	1%	1%	100%
	Direct supervisor is aware of all infectious agents and/or toxins studied in lab	69%	21%	5%	3%	3%	100%
	Shipment of infectious agents and/or toxins using International Air Transport Association IATA Dangerous Goods Regulations	64%	16%	8%	3%	9%	100%
	Appropriate permission(s) obtained to share infectious agents and/or toxins with other investigators/labs	59%	22%	10%	5%	5%	100%
	Organization director is aware of all infectious agents and/or toxins studied in all labs	58%	21%	11%	7%	3%	100%
	Infectious agents and/or toxins not in use are destroyed	56%	21%	11%	7%	5%	100%
	Current inventory of infectious agents and/or toxins	54%	23%	9%	6%	7%	100%

Risk Perceptions and Preparedness

Question 15

Please indicate your degree of concern for the following scenarios involving the infectious agent(s) and/or toxins that your laboratory studies? (Choose only one for each category)

		7. Very worried	6	5	4	3	2	1. Very unconcerned	Total Respondents	Mean
Please indicate your degree of concern for the following scenarios involving the infectious agent and/or toxin that your laboratory studies. (choose only one for each category)	Accidentally infecting people or animals or contaminating the environment outside laboratory	50%	13%	10%	9%	5%	7%	6%	100%	5.5
	Laboratory-acquired infection	46%	12%	12%	10%	6%	6%	8%	100%	5.3
	Agent or toxin could be used to cause harm	44%	10%	11%	11%	6%	5%	13%	100%	5.1
	Becoming more virulent	40%	14%	10%	12%	8%	4%	13%	100%	5.0
	Acquiring ability to infect new species	39%	12%	16%	10%	7%	5%	13%	100%	5.0

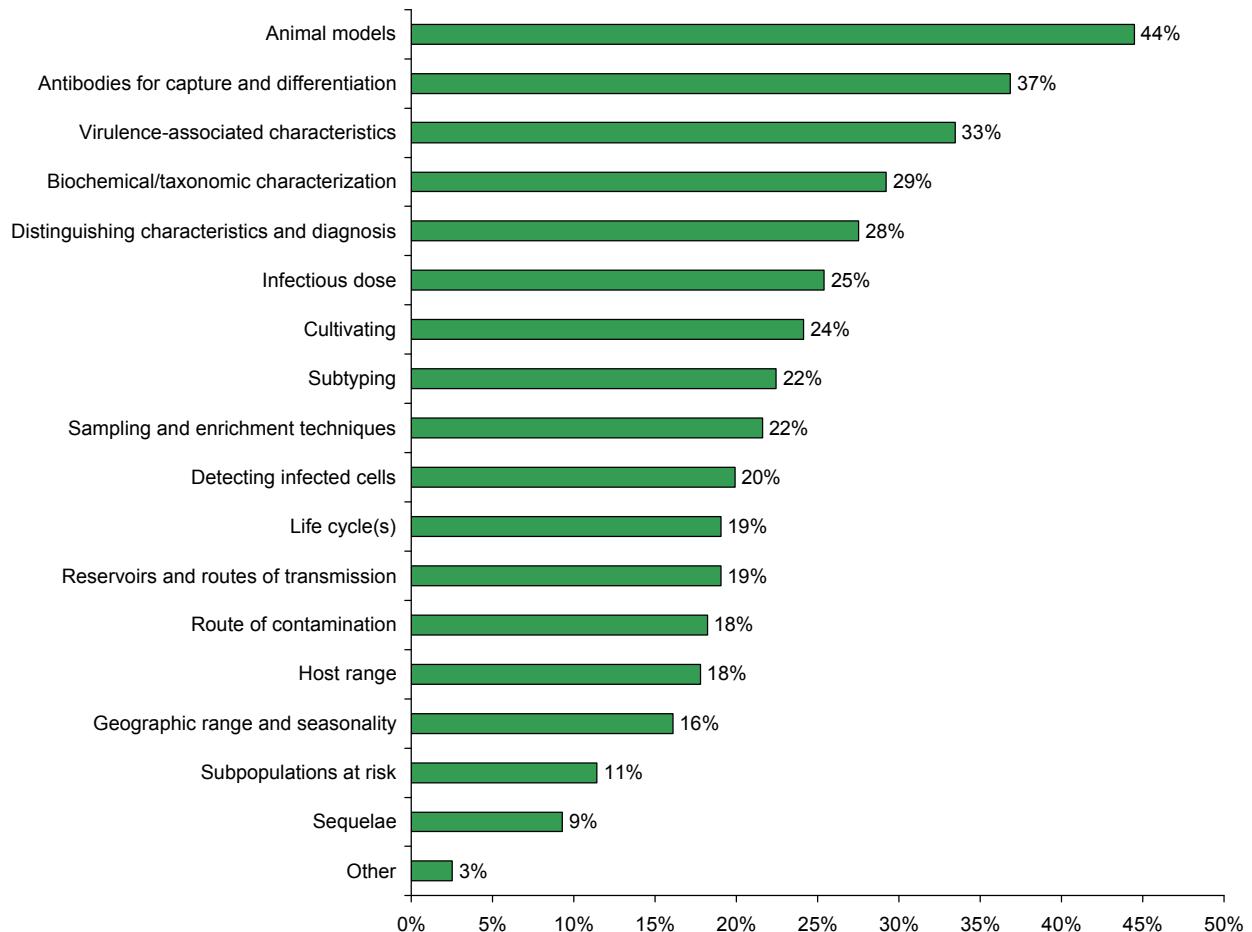
Question 16

Please indicate the likelihood that your laboratory would be involved in or affected by one of the following scenarios? (Choose only one for each category)

		7. Very likely	6	5	4	3	2	1. Very unlikely	Total Respondents	Mean
Please indicate the likelihood that your laboratory would be involved in or affected by one of the following scenarios. (choose only one for each category)	Repurposed by government to serve as public health lab during epidemic	25%	15%	12%	10%	5%	9%	23%	100%	4.3
	Discovering emerging infectious disease	20%	12%	13%	10%	6%	10%	29%	100%	3.8
	Theft of samples by laboratory employee with intent to cause harm	6%	5%	5%	6%	5%	16%	58%	100%	2.2
	Theft of samples by non-employee with intent to cause harm	5%	4%	5%	5%	7%	13%	61%	100%	2.1

Question 17

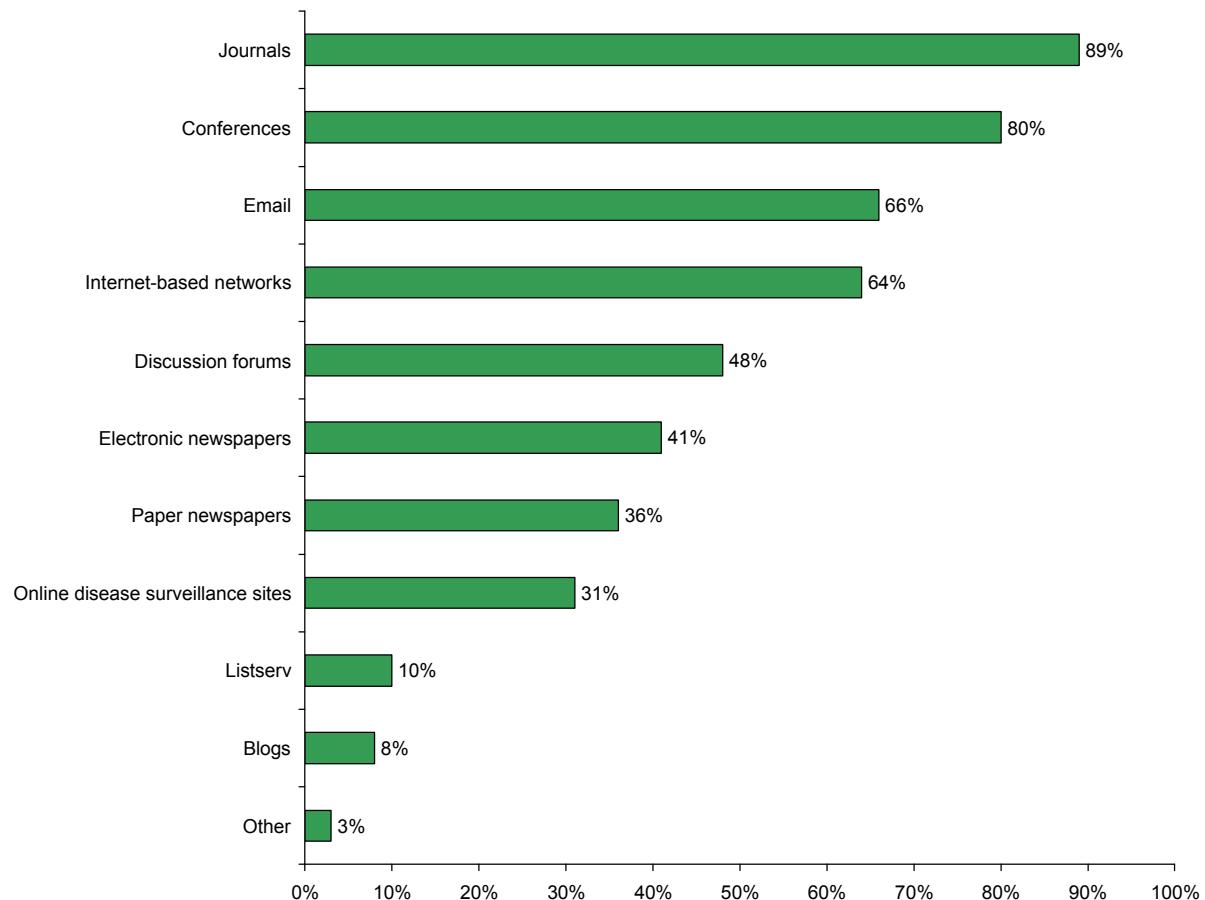
For what types of techniques or avenues of exploration on these infectious agents and/or toxins does your laboratory require assistance from outside experts? (Check all that apply)



Communication and Networking

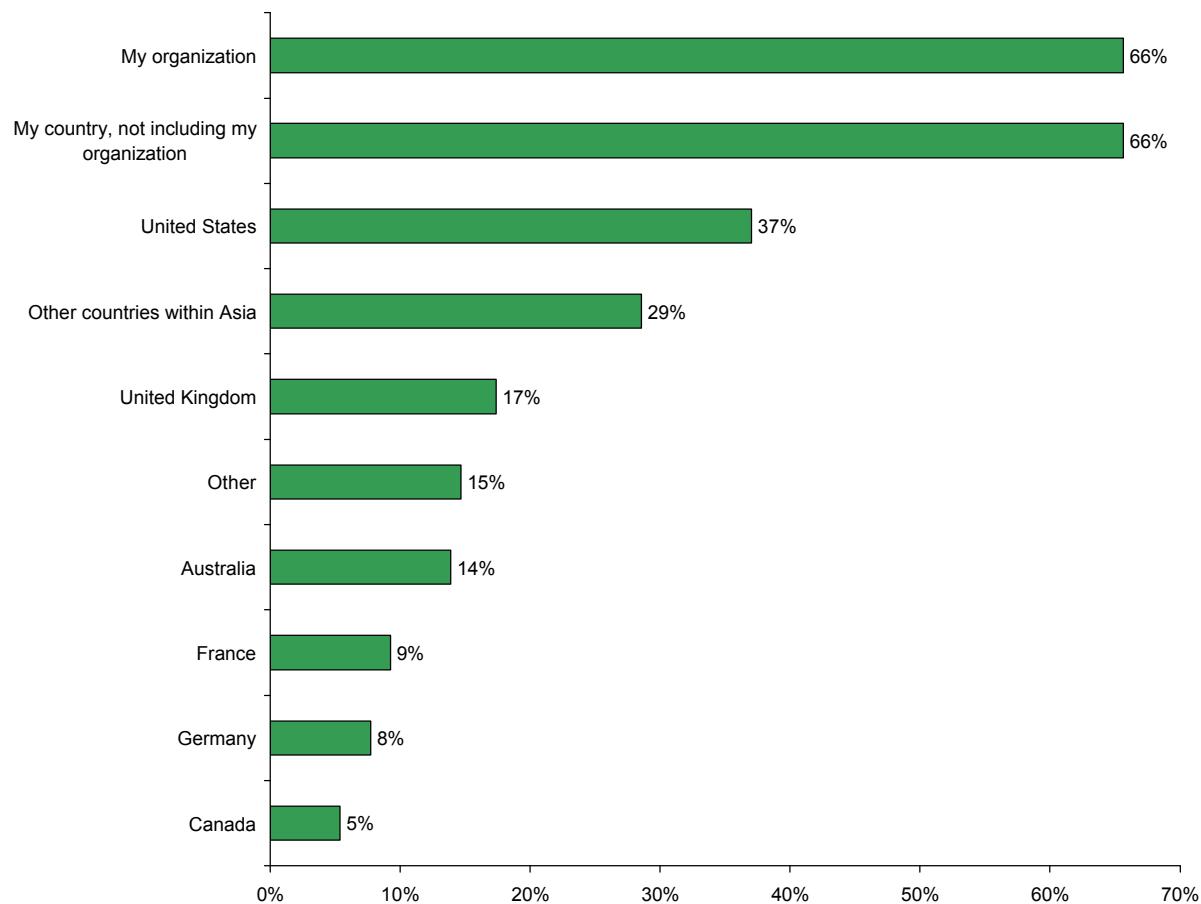
Question 18

How do you stay abreast of developments in your field? (Check all that apply)



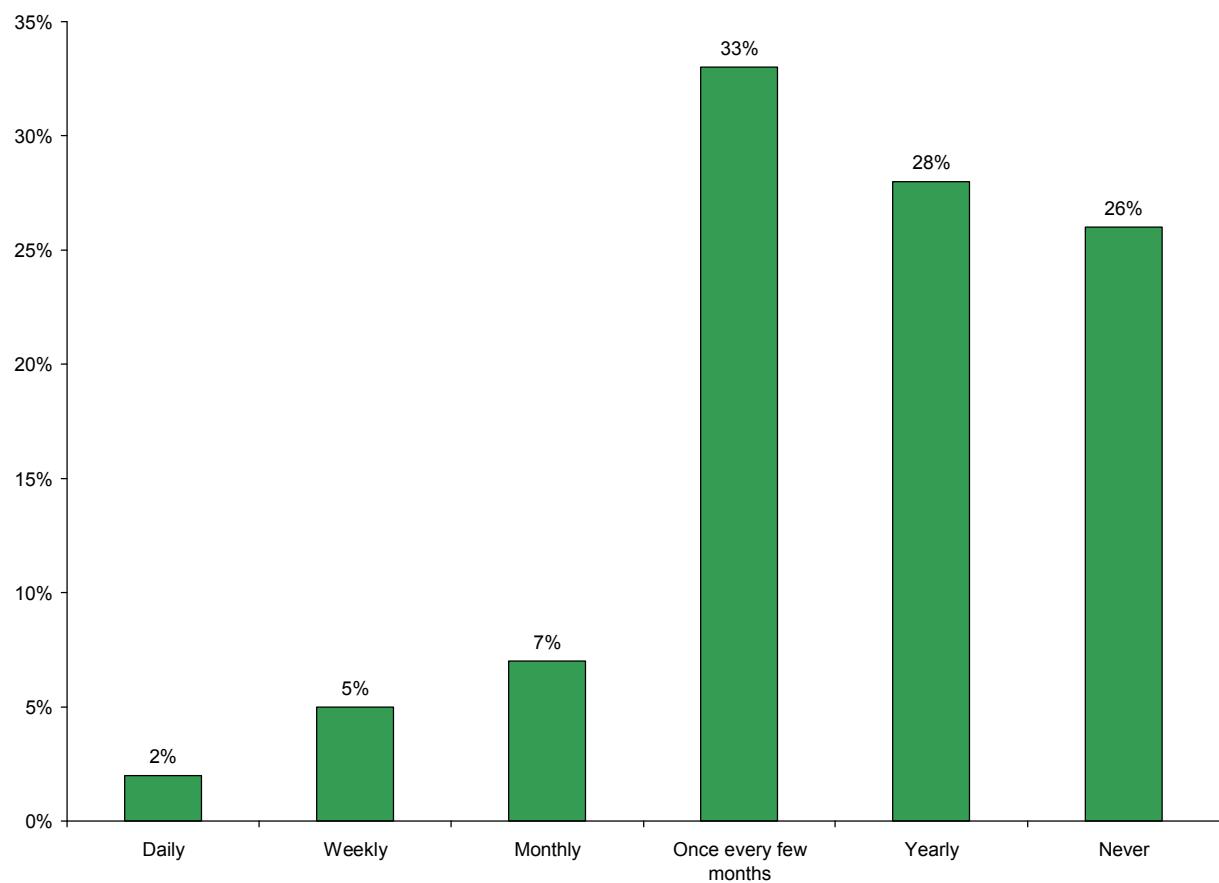
Question 19

Where are the laboratories located with which your laboratory has partnerships or collaborations? (Check all that apply)



Question 20

How often does your laboratory share samples of infectious agents and/or toxins with your collaborators or partners? (Choose only one)



About Your Laboratory

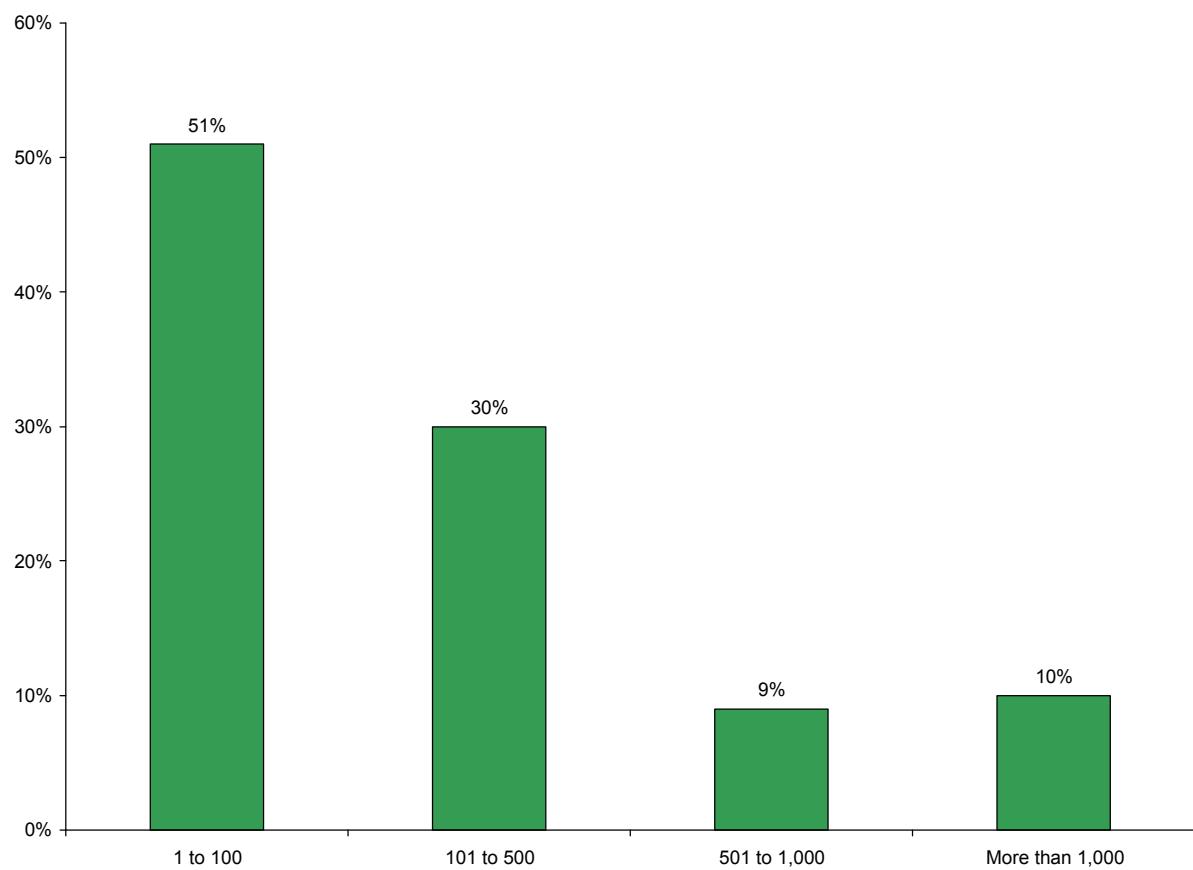
Question 21

What is the name of your organization? (please specify)

Responses withheld from public dissemination

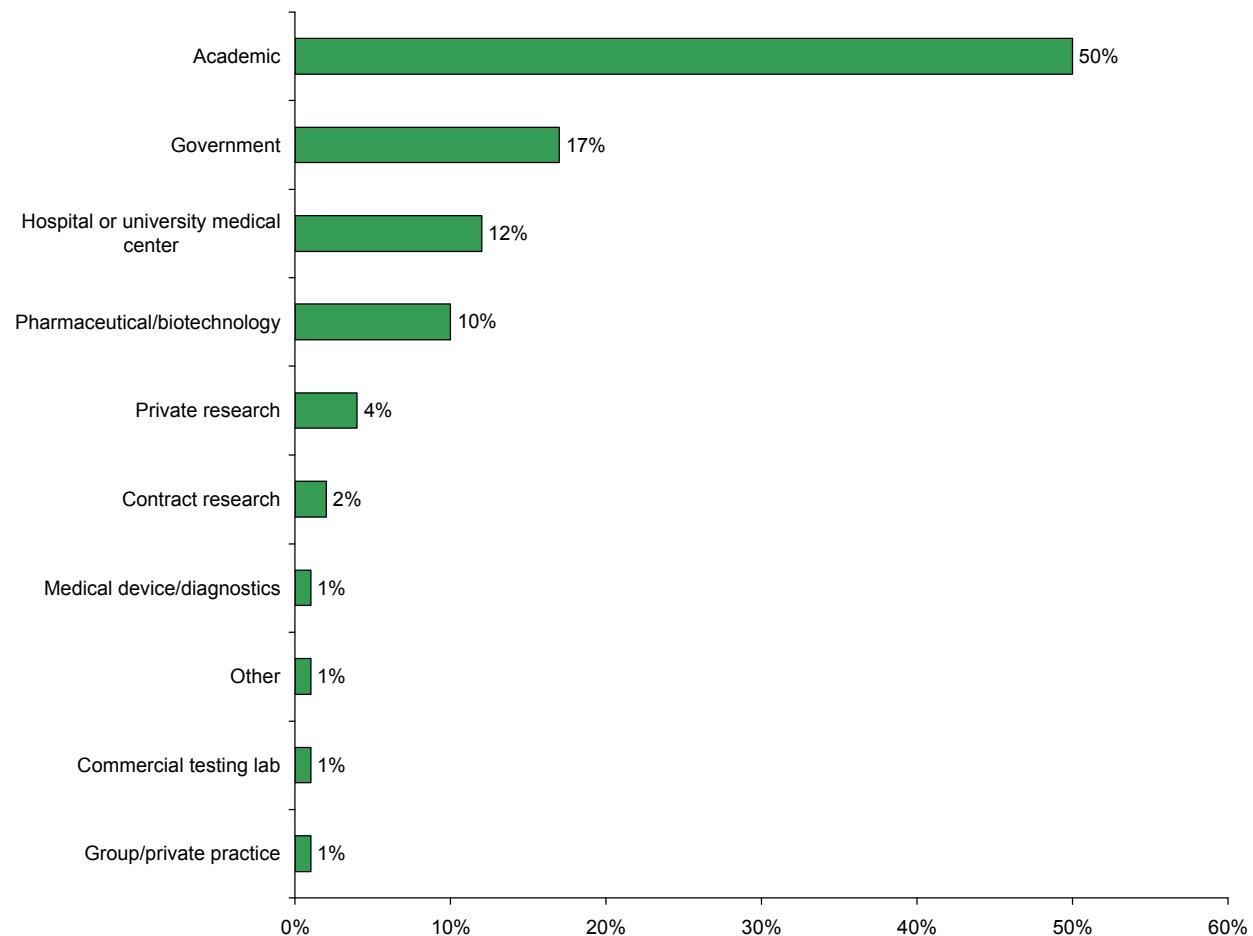
Question 22

Please estimate how many total researchers (including graduate students/postdocs/technicians) are in your ORGANIZATION? (Choose only one)



Question 23

Which BEST describes your organization? (Choose only one)



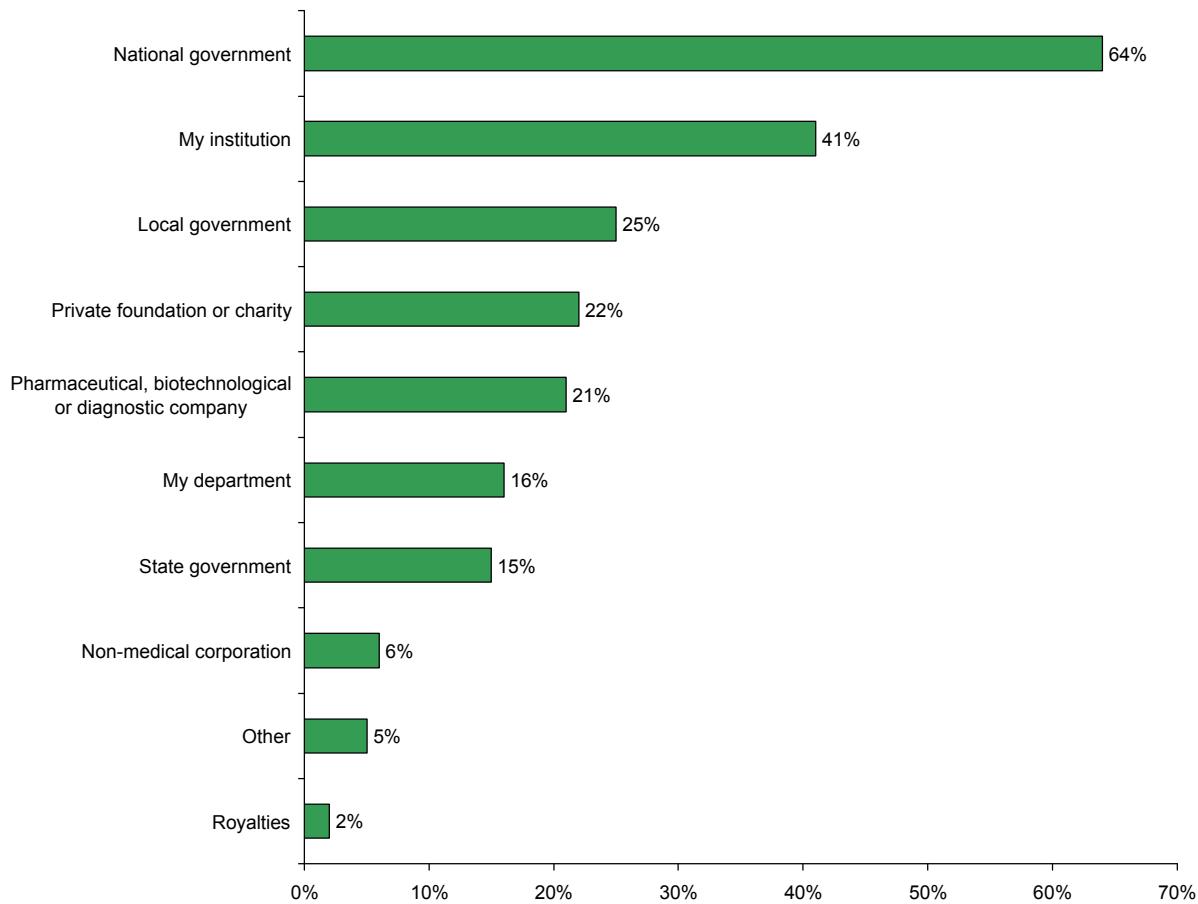
Question 24

Please indicate the country where your organization is located? (Choose only one)

<u>Total Respondents</u>	300
India	102
Taiwan	34
Thailand	31
Singapore	22
Japan	16
Malaysia	15
Philippines	15
China	14
Indonesia	12
Vietnam	12
Pakistan	11
Hong Kong	6
Sri Lanka	4
Bangladesh	3
Korea	2
Cambodia	1

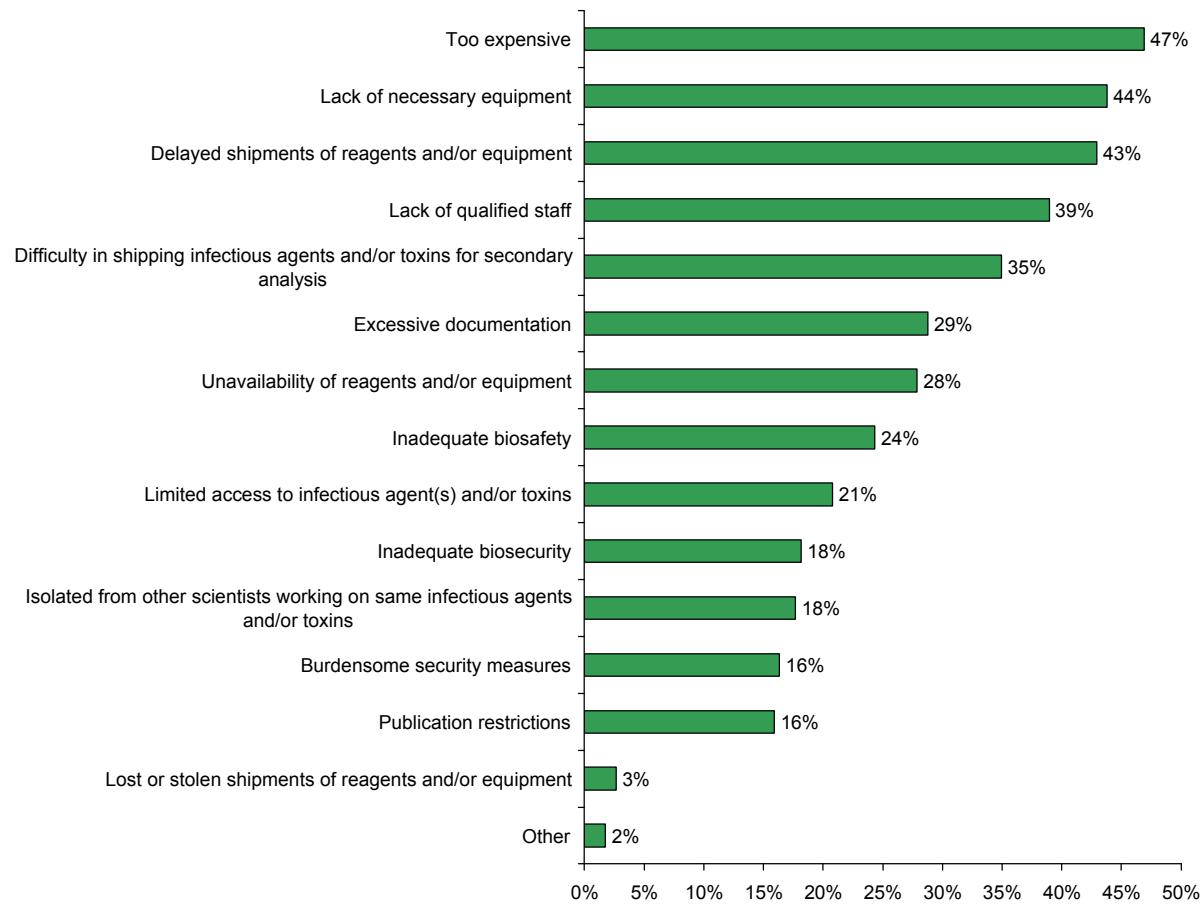
Question 25

From where does your laboratory receive funding to conduct your bioscience research?
(Check all that apply)



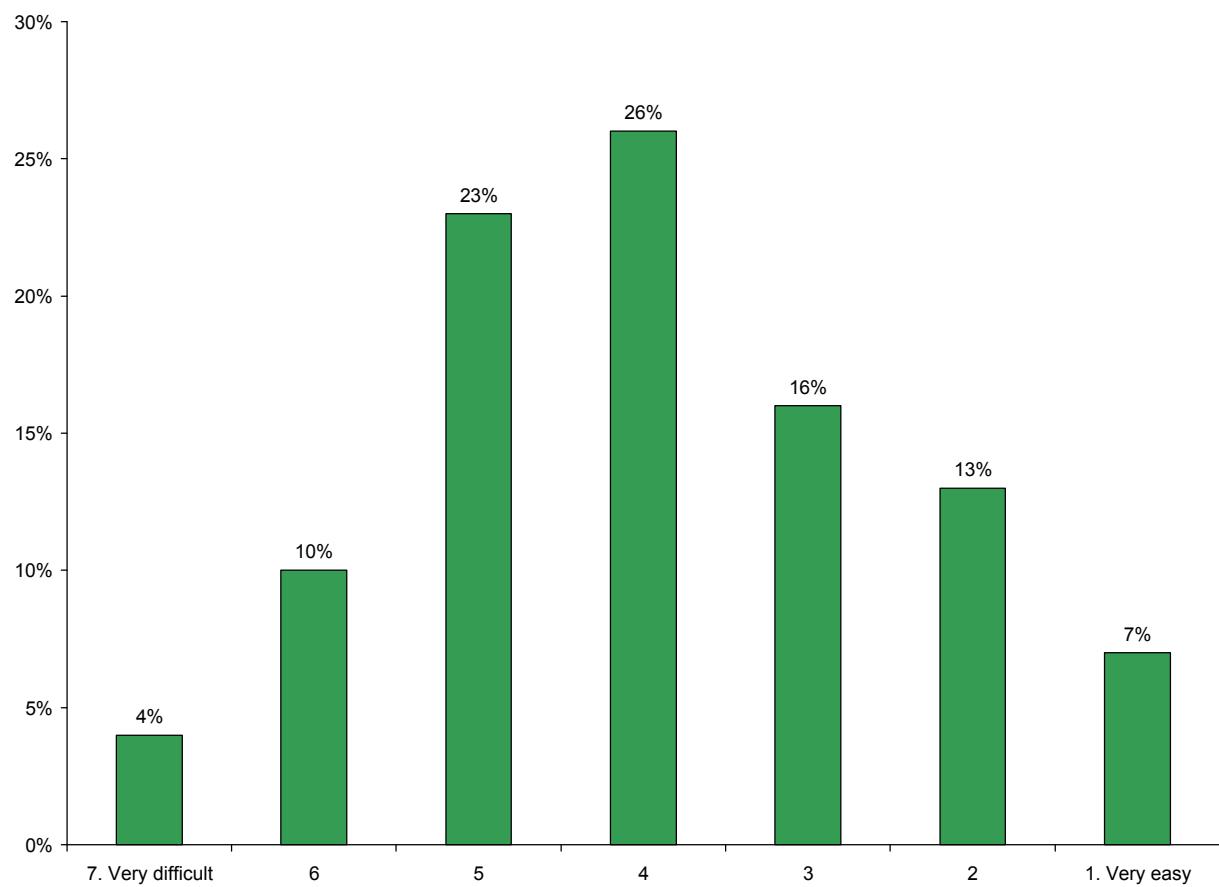
Question 26

What types of problems does your laboratory TYPICALLY experience in conducting research on these infectious agents and/or toxins? (Check all that apply)



Question 27

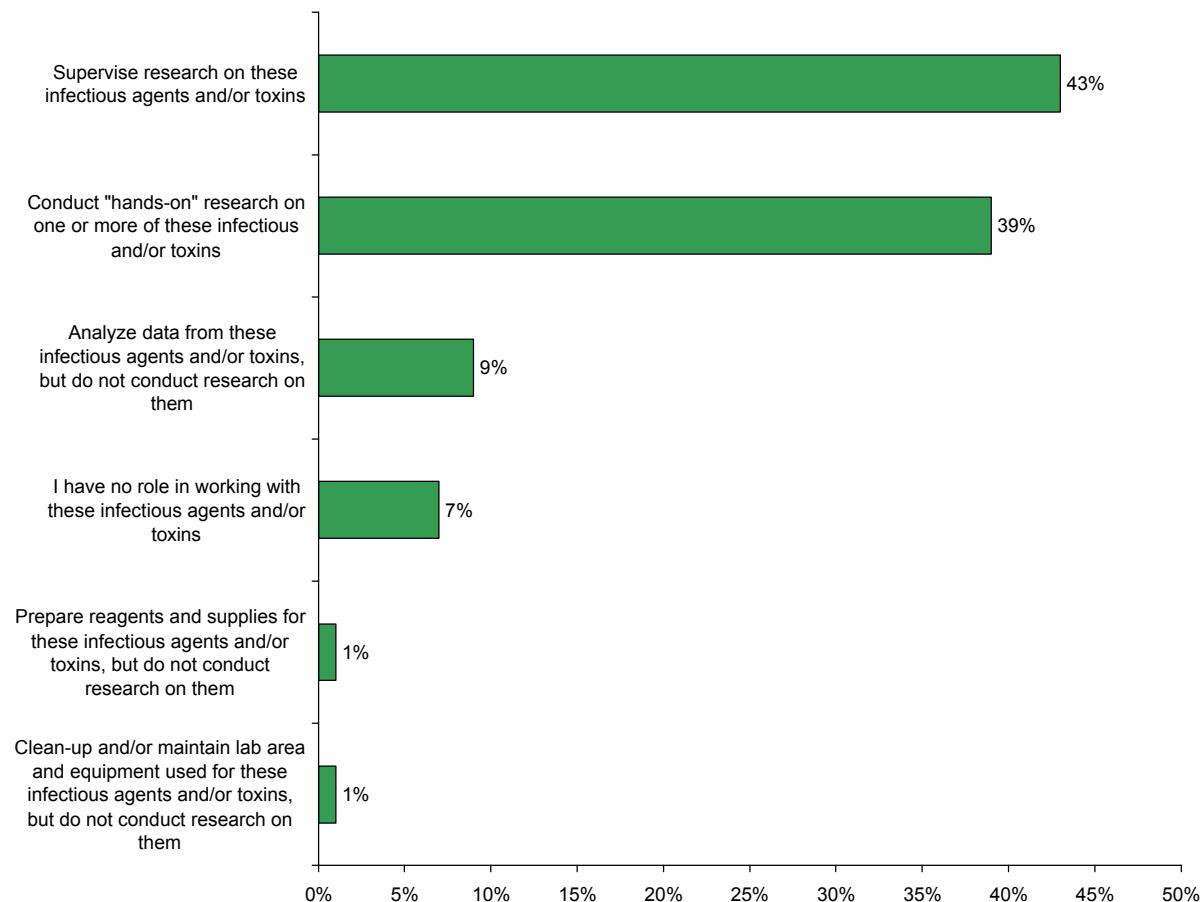
How difficult is it for your laboratory to conduct research on these infectious agents and/or toxins? (Choose only one)



About You

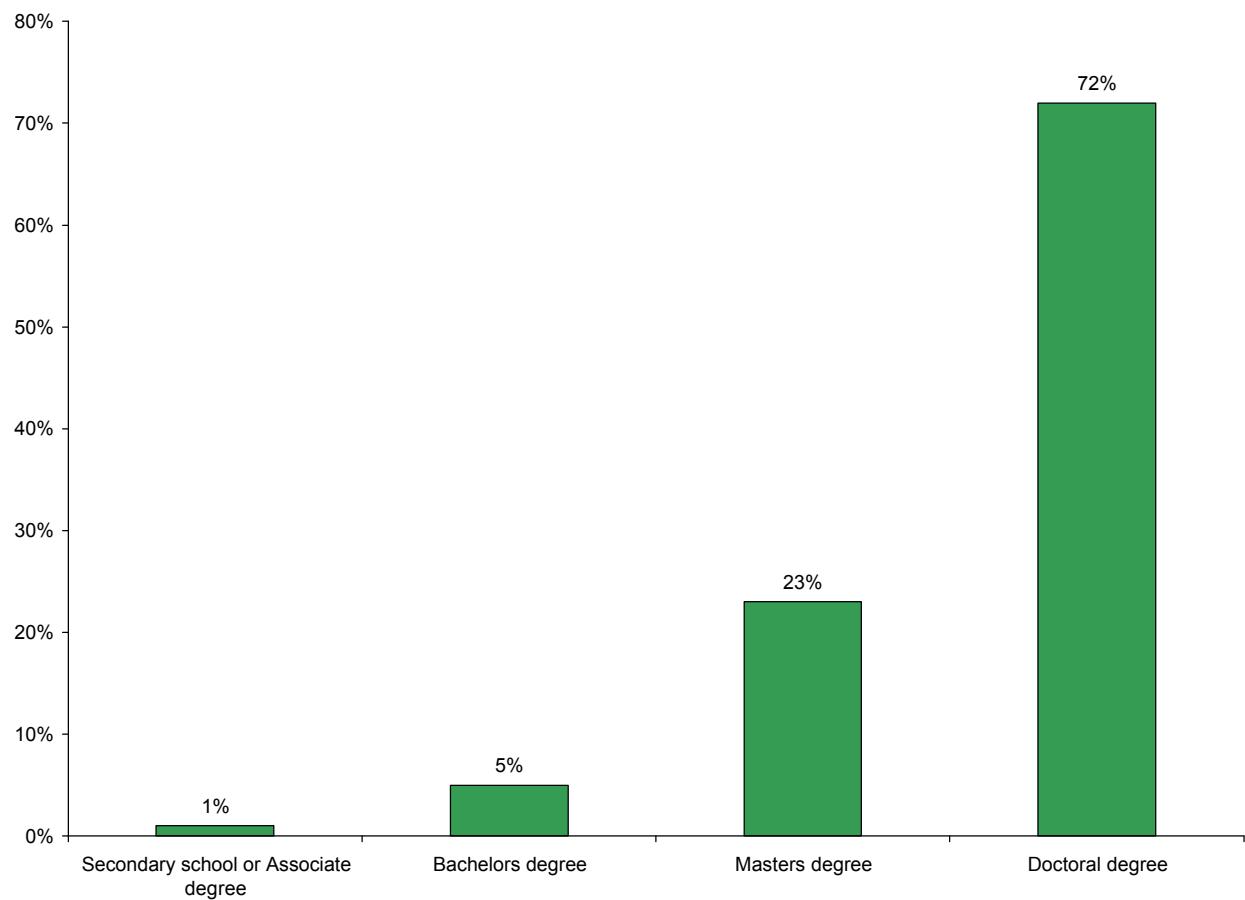
Question 28

Which BEST describes your role in working with these infectious agents and/or toxins
(Choose only one)



Question 29

Please select your highest level of education. (Choose only one)



Question 30

What BEST describes your current job position. (Choose only one)

