
Agency 365 – Washington State University
2013-2015 Operating Budget Request

Innovating for a New Economic Future
Performance Level Decision Package – PL H5

Operating Support for the Paul G. Allen School for Global Animal Health

Agency Recommendation Summary

WSU requests \$7.2 million in state funding to hire new faculty and staff to capitalize on the millions in private investments received and to bolster the state's efforts to protect human health and food safety from infectious disease. Teams would be organized in four clusters to address issues related to (1) emerging disease surveillance, (2) the spread of antibiotic resistance, (3) zoonotic disease transmission and (4) vaccine development.

Fiscal Details

	2013-14		2014-15		2013-15
	FTE	Dollars	FTE	Dollars	Biennium
General Fund State	30.7	3,596,000	30.7	3,596,000	7,192,000
Total	30.7	\$ 3,596,000	30.7	\$ 3,596,000	\$ 7,192,000

Package Description

This year, Washington State University formally opens the Paul G. Allen School for Global Animal Health. The Allen School is at the forefront of the university's strategic plan to develop world-renowned research centers that solve modern societal problems while creating new drivers to bolster the state economy. The Allen School, in particular, is poised to become a resource of global significance as it is the first school of its kind anywhere in the world. Additionally, the Allen School contributes to our state's expertise in global health as part of Washington State's world-renowned cluster of leading global health organizations, such as PATH, the Gates Foundation and the Allen Foundation.

Global Animal Health is about the health of animals for the health and economic well-being of humans. Washington State University has embraced this mission, building on its core competency and excellence in public health at the animal-human interface. The Allen School has a multidisciplinary approach with expertise in control of infectious diseases at their source, before they spread into the human population. Infections transmitted from animals to humans account for more than 70 percent of human infectious diseases, including emerging diseases like Avian influenza and West Nile Virus, and those existing diseases which are poorly controlled and not easily prevented such as *Salmonella* and *E. coli*. The Allen School faculty are also at the forefront of keeping antibiotics effective for treating human infections; the current unregulated use of antibiotics in both humans and animals in low income, developing countries is a threat to human health everywhere. Finally, the work of the Allen School contributes to healthy livestock and healthy families and communities, which directly addresses poverty in the developing world and enriches all our lives.

The Washington State University College of Veterinary Medicine has developed extraordinary expertise in identifying, controlling, researching and preventing diseases that are transmitted between animals and humans. And as of July 2012, this expertise is being housed in a state-of-the-art facility constructed with the help of major gifts from the

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Bill and Melinda Gates Foundation and Paul G. Allen. Faculty recruitment is acute need that must be met to achieve the goals of the School and the University and to better serve the state of Washington and the world.

This \$7.2 million biennial operating request seeks to capitalize on millions of dollars in private investment to fund eight key scientific faculty positions and the necessary support staff in the four clusters that will build a university program second to none in the nation. Closely aligned with the Department of Global Health at the University of Washington, the Allen School will provide a unique and critical contribution making the state of Washington a worldwide leader in addressing global health issues at the animal-human interface. This will ensure that the state of Washington has maximum capability to deal with emerging disease threats. This request will provide funding for targeted recruitment of new faculty to strengthen existing expertise and to add new expertise not currently present within any private or public research institution in the state. These individuals are essential for fulfilling the mission of the school, for developing an internationally leading graduate program and for strengthening existing inter-institutional linkages. The specific areas of expertise targeted for faculty are detailed below.

- **Emerging Disease Surveillance** – provides unique new expertise in detection of emerging diseases at the global level that threaten human and/or animal health within the state. It focuses on the development of novel, more effective testing procedures and screening methodology. These positions are essential to the development of the Pathogen Discovery Program in the Allen School and for collaboration with field-based programs located in disease emergence hotspots in resource constrained countries.
- **Spread of Antibiotic Resistance** – provides new expertise in mapping routes of the spread of resistance to antibiotics among animals and humans. Similar to the spread of new viruses, antibiotic resistance rapidly moves from its origin and spreads worldwide. The WSU faculty cluster will uniquely track such resistance and its spread and spearhead new prevention strategies to ensure that antibiotics remain effective for treatment of human illness.
- **Zoonotic Disease Transmission** – provides new expertise in mapping routes of transmission of pathogens such as *E. coli*, Nipah virus and the plague from animals and their environment to humans, emphasizing new strategies for blocking transmission. This faculty cluster will complement the existing strengths in zoonotic disease control at Washington State University.
- **Vaccine Development** – provides new expertise in developing animal vaccines in order to curtail ongoing transmission to humans. This faculty cluster will work collaboratively with the executive members of the Washington Vaccine Alliance, which include the Fred Hutchison Cancer Research Center, the Infectious Diseases Research Institute, the Institute for Systems Biology, the Seattle Biomedical Research Institute, the University of Washington and Washington State University.

New faculty will be recruited as clusters composed of a senior scientist with an existing extramurally funded research program, a junior level faculty member, two research technologists, and two post-DVM Graduate Research Assistant positions. This cluster

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approach will provide both the depth and breadth of expertise within the four targeted areas and is a key element in attracting internationally recognized scientists, allowing them to recruit personnel or bring existing associates with them. These new faculty will join existing faculty with extramurally funded programs (NIH, NSF, USDA and the Wellcome Trust among others) in disease diagnosis and surveillance, epidemiology, economics and policy, and vaccine development. WSU scientists are internationally recognized for their work in food and water-borne diseases (e.g. *E. coli* and *Salmonella*), emerging disease surveillance (e.g. West Nile Virus and Influenza), vector-borne disease control (infections spread by insects) and vaccines.

Narrative Justification and Impact Statement

State investment is the third pillar in the development of the Paul G. Allen School for Global Animal Health as the leader in public health at the animal-human interface. Private funding in excess of \$50 million from the Bill and Melinda Gates Foundation and Paul G. Allen created the Center that provides the advanced biosafety laboratories required for solving problems in zoonotic diseases. Private funding from Paul G. Allen and over 300 individual donors have also provided seed funding that allows Allen School scientists to take risks and catalyze new multi-disciplinary approaches—approaches that in turn lead to enhanced competitiveness for federal and international agency research funding. The impact of this catalytic approach is illustrated by a new \$2.5 million National Science Foundation grant to WSU that was based on data from initial investigations supported by private funds. This approach brings new resources and new jobs to Washington. The acute need is for investment by the state in faculty positions that will leverage the Center and the private catalytic funding into new programs that elevate WSU, strengthen the economy, and better protect animal and human health.

The proposal will allow WSU to improve its expertise in both disease surveillance and protection of the food supply. This will bring direct economic benefit to the state by attracting new federal and private research funding in global health. Already, global health in Washington accounts for almost 14,000 direct jobs, each with an average annual wage of almost \$56,000. Multiplier effects bring the total economic impact to more than 43,000 total jobs, \$4 billion in annual business activity and \$141 million in annual tax revenue to the state. The total business activity generated by global health research and teaching at WSU and UW alone exceeds \$130 million, according to the Global Health Alliance.

Additional economic benefits will be generated through protecting and expanding national and international markets for Washington agricultural products. Animal agriculture is a \$1.5 billion industry in the state of Washington. Our agricultural markets, including aquaculture production, are dependent on maintaining and verifying disease-free status in animals. Early recognition of a disease which can shut off exports is vital to limiting the impact on agricultural markets and surveillance is the key. As we have experienced with BSE, commonly known as mad cow disease, these diseases can have a serious and prolonged impact on exports and subsequently, the economy. The need for rapid surveillance of emerging disease is clearly illustrated by the \$13 billion economic loss

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attributable to the 2001 hoof and mouth disease outbreak in the U.K. Models based on this outbreak predict that each hour of delay in diagnosis will result in an additional \$10 million economic loss in livestock-intensive areas, with a total loss estimated as high as \$30 billion. The new faculty at WSU will increase the university's capacity to identify, develop and implement innovative control solutions to both newly emergent pathogens and long-standing disease problems (e.g. *Salmonella* and *E. coli*), to meet the dual goals of protecting human health and our animal agriculture industry. Additional products such as vaccines for use in animals and novel diagnostic assays will provide a direct market return for the state's biotechnology industry.

A new graduate program designed to dynamically collaborate across institutional boundaries with the UW and other health institutions in the state of Washington has been initiated using private foundation support. This funding will help the graduate program in the Paul G. Allen School for Global Animal Health, which integrates laboratory and field studies with policy and is the first of its kind in the nation, to drive expansion of graduate education at WSU by attracting new competitive federal funding (NIH, NSF, and USDA) and by continuing to attract international students fully supported by their home countries. Based on our current programs, we expect an increase of four doctoral students per new faculty with a 4:1 multiplier of total graduate students per state-funded student. Importantly, these graduates will further enrich the human resource capabilities with the state through development of new methods to control diseases at the animal-human interface and by implementation of science-based policy.

This budget request addresses strategic priorities of the state including the health of Washingtonians and improving the economic vitality of businesses and individuals. It is expected that full funding will:

- Enhance global health partnerships among Washington's premier state, federal and private institutions.
- Solidify the leadership of the state of Washington in global health through development of interdisciplinary and inter-institutional research and graduate education.
- Transform current strengths at Washington State University into preeminence in the control of infectious diseases at the animal-human interface by catalyzing new federal and private investments.
- Mitigate the impacts of infectious diseases such as avian flu, foodborne diseases and foot and mouth disease on animal and human health, the food supply and agricultural markets through development of novel methods of intervention at the animal-human interface.
- Improve the global competitiveness of the state of Washington in the animal and human health sectors.
- Bolster an economic sector that already has generated thousands of direct and indirect jobs in Washington.

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Calculations

FISCAL DETAIL TABLES - OPERATING SUPPORT FOR THE PAUL G. ALLEN SCHOOL FOR GLOBAL ANIMAL HEALTH					
	2013-14		2014-15		2013-15
By Program	FTE	Dollars	FTE	Dollars	Biennium
Instruction	6.7	783,000	6.7	783,000	\$ 1,566,000
Research	20.0	2,347,000	20.0	2,347,000	4,694,000
Public Service	0.6	70,000	0.6	70,000	140,000
Primary Support	1.0	107,000	1.0	107,000	214,000
Libraries	0.4	39,000	0.4	39,000	78,000
Student Services	-	-	-	-	-
Institutional Support	0.9	100,000	0.9	100,000	200,000
Plant Operations & Maint.	1.1	150,000	1.1	150,000	300,000
Total	30.7	\$ 3,596,000	30.7	\$ 3,596,000	\$ 7,192,000
	2013-14		2014-15		2013-15
By Object	FTE	Dollars	FTE	Dollars	Biennium
Salaries	-	-	-	-	-
Faculty	8.0	1,264,000	8.0	1,264,000	2,528,000
A/P	11.0	710,000	11.0	710,000	1,420,000
TA/GA	8.0	340,000	8.0	340,000	680,000
Classified	3.7	159,000	3.7	159,000	318,000
Benefits	-	711,000	-	711,000	1,422,000
Goods/Services	-	192,000	-	192,000	384,000
Travel	-	69,000	-	69,000	138,000
Equipment	-	151,000	-	151,000	302,000
Total	30.7	\$ 3,596,000	30.7	\$ 3,596,000	\$ 7,192,000