

DRAFT* DRAFT * DRAFT: 8/26/2011

SPOKANE HEALTH SCIENCES RESEARCH 10–YEAR STRATEGIC INVESTMENT PLAN:

*Fostering Research, Collaboration, and Interdisciplinary Capacity Building
to Grow Spokane’s Health Sciences Community*

STRATEGIC OBJECTIVES

The Health Sciences and Services Authority of Spokane County (HSSA) and the Empire Health Foundation (EHF) have collaborated on this Strategic Investment Plan to increase the amount of health sciences research activity and funding in the Spokane area. Sustainable, ongoing health sciences research will contribute to economic development and job growth in the region, and has the potential to improve health outcomes among residents.

Together, HSSA and EHF plan to invest up to \$12.5 million over the next 10 years. EHF and HSSA also plan to help attract another \$5 million in health sciences research investments from collaborating funders, for a total of \$17.5 million in planned investments. In addition to the \$17.5 million, the objective is to leverage additional public and private investments made by other organizations, including Washington State University (WSU), the University of Washington (UW), and other funders and foundations.

The combination of these initial investments is expected to increase the level of health sciences research funding from the National Institutes of Health (NIH) and other federal and private funders from current levels (\$12 million in 2011) to \$70 million annually by 2030.¹

GUIDING PRINCIPLES

This Strategic Investment Plan is guided by several overarching principles:

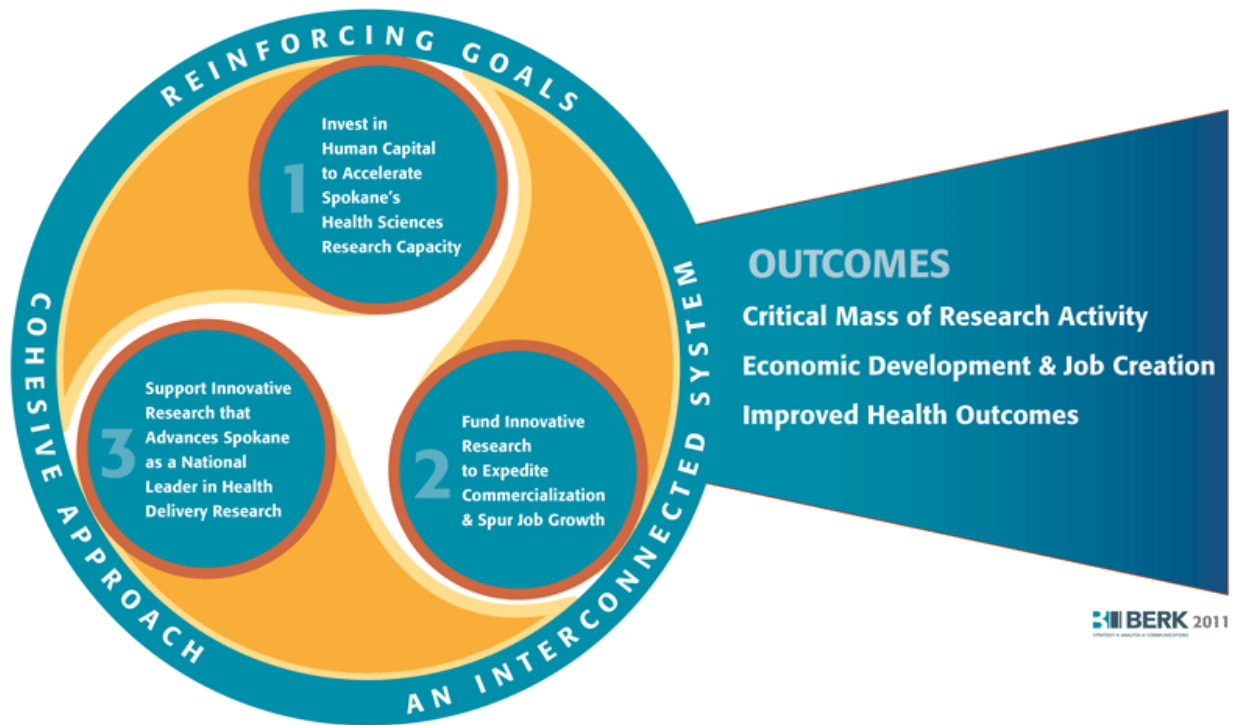
- A. Target Resources for Maximum Impact.** Focus on three Strategic Goals to ensure that the funds available will have an appreciable impact and will “move the needle” to make a difference in a highly competitive research funding environment.
- B. Build on the Region’s Research Strengths.** Make investments that support and will help grow and shape existing research capacities in basic science and translational research to maximize the likelihood of obtaining a significant increase in research funding over the next ten years.
- C. Leverage Community Expertise and Support.** Make strategic research investments that complement the investments and priorities of other organizations working in the region.
- D. Adopt a Flexible Investing Approach.** Be flexible and responsive to gain benefits from a broad range of proposals that align with the Plan’s strategic priorities. The recommended percentage for allocation of dollars is intended to be a guideline and not a directive.

¹ Estimates from *Regional Economic and Community Benefits of the Academic Health Science Center @ Riverpoint in Spokane, WA*, Tripp Umbach, June 2010, page 20.

- E. **Develop Opportunities to Attract and Leverage Private Fundraising.** Expand the impact of HSSA and EHF funding by supporting efforts to attract health sciences funding from private and community sources.
- F. **Measure Outcomes and Impacts of Funding.** Require grantees to report Return on Investment (ROI) performance data, including jobs data, to grantors to demonstrate the impact of investments and the value to the community.

STRATEGIC GOALS: RELATIONSHIPS AND IMPACTS

The three Strategic Goals in this Investment Plan constitute a powerful reinforcing system that together will yield much greater outcomes than the sum of the individual parts. Because they are connected systemically, success in one Goal will lead to success in others. As they are implemented, the Goals will work together to create a cohesive approach to the region’s health sciences research and planning, addressing the Plan’s Strategic Objectives. The graphic below depicts the relationships and impacts of the Strategic Goals.



RECOMMENDATIONS FOR STRATEGIC INVESTMENT

Strategic Goal #1: Invest in Human Capital to Accelerate Spokane's Health Sciences Research Capacity

Rationale: Establishing a critical mass of discipline-specific health science researchers in Spokane is essential to increase the amount of research activity in the area. The presence of a strong research community provides a foundation that is critical for discovery and clinical care, and for business attraction and expansion due to proximity and access to talent. Earlier studies of Spokane's health sciences strengths and opportunities have emphasized the importance of increasing research and partnerships "to create a seamlessly integrated health sector that can stimulate the local economy."²

"We need to capitalize on Washington's high-tech core to generate more family-wage jobs. One clear way to do that is to build upon our established base of high-tech biomedical and bioscience industries and public and private research centers."
- Governor Christine Gregoire

Because health science typically emanates from research-intensive institutions, funding in this Goal is directed towards the universities. Funding of this Strategic Goal is intended to:

- Attract and retain research scientists
- Spur additional job creation
- Be credible to funders and the community

HSSA Intent: The intent of this funding is to support scientific research faculty administered in the form(s) of: 1) direct funding recruitment package, or 2) (preferably) endowed chair positions. Funding is intended to stimulate the advancement of a bioscience research and infrastructure in Spokane, comprised of academic and industrial constituents. Funds awarded are for the sole purpose of growing research and development in Spokane and may not be used for institutional operating costs, including fixed and administrative costs.

Qualifiers and Funding Guidelines:

- **Research Faculty Eligibility.** To be eligible for this funding mechanism, research faculty must: 1) devote a minimum of ~~75~~65% of their time to basic science, clinical, or translational science research; 2) devote a maximum of ~~25~~35% of their time to teaching and administering coursework; and 3) transfer at least \$1.5 M in currently active research funding with their move from another institution.³
- **Faculty-specific Recruitments.** Recognizing that each recruitment is different and subject to its own challenges, these desired criteria that must necessarily be implemented with some flexibility, and therefore may be subject to change for a specific recruitment.
- **Faculty Funding.** Qualifying faculty will be entitled to 1) direct funding (in the form of a recruitment funding package), or 2) a chaired appointment in the form of an endowment. Faculty that are granted a direct funding package will have access to the funds for a 10 year period, during which the maximum annual draw down is capped at \$250,000 per year.
- The awarded funds shall ~~be administered~~flow directly to ~~each research recipient and may not be burdened by the university~~the direct cost side of the funded opportunity.

² American Association for the Advancement of Science Research Competitiveness Service, *Review and Guidance to the Institute of Systems Medicine Planning Authority*, May 2007, page 3.

³ \$1.5 million is derived from the average NIH R01 grant being \$500,000 per year for five years, with an indirect rate of approximately 50%. The target is to recruit principal investigators with a significant track record, bringing an average of two R01s or higher.

- **Types of Translational Research.** HSSA strongly encourages collaboration(s) between university faculty and local bioscience industry for the purposes of translating research ideas. Translation of research may take the form of: 1) the formation of newly-created (start-up) companies; 2) joint development agreements; 3) technology transfer/licensing arrangements; or 4) a combination of elements 1-3. Innovate Washington, with a presence in Spokane, has programs and methods designed to assist early stage companies to gain traction and can assist with the development of business planning and strategy.
- **Collaboration and Resource Sharing.** The development of university (local), industry, and medical community collaboration will be encouraged. Resource sharing, where appropriate (for example, with equipment) is also encouraged. [Research that promotes innovative access to care for local residents is also encouraged.](#)

Strategic Elements:

A. Support Research-Intensive Universities in Recruiting Health Science Researchers

- Prioritize research faculty hiring to support ~~the~~ WWAMI [Spokane](#)⁴ ~~four-year Medical School in Spokane.~~
- Prioritize recruitment of researchers with current federal grant funding and an established research program.
- Prioritize clinician-researchers to strengthen translational research capabilities.

B. Provide Matching Funds for Researcher Recruitment Packages

- Participate with the recruiting universities by providing financial support for recruitment packages.
- Reach out and engage private donors to augment funding available for recruitment.

C. Support Retention of Successful Researchers

- Make funding available as needed to provide grant support, including support for equipment purchases and lab staff.

Funding Phases:

2nd Year WWAMI-Spokane Faculty Phase 1: Academic Years 2013-2014 & 2014-2015 (“2nd Year Faculty Phase 1”): UWSOM/WSU have committed to hiring research faculty for the 2nd Year Faculty Phase 1, provided funding resources are available via the Strategic Investment Plan. However, it is acknowledged that in Phase 1, it will be challenging to recruit all required faculty who meet the criteria of \$1.5 M in total active NIH grant funding. As a result, in the first two academic years of Phase 1, the funding and criteria will be as follows:

- a) HSSA and EHF will each fund \$250,000 per year for two years to support the 2nd Year Faculty Phase 1 for a total of \$500,000 each towards this part of the strategy. HSSA funds may only be used to fund research faculty. There is also an expectation that UW and WSU will each contribute \$250,000 per year and an additional \$500,000 per year will be raised from the business/community. Thus \$3 million will be available to fund the 2nd Year Faculty Phase 1 over 2 years. In other words, the 2-year \$500,000 investment by HSSA will be matched and leveraged by \$2.5 million from other funders, thus producing a 5:1 leverage ratio.

⁴ WWAMI is an enduring partnership between the University of Washington School of Medicine and the states of [Washington](#), Wyoming, Alaska, Montana, and Idaho. The WWAMI name is derived from the first letter of each of the five cooperating states. ~~The WWAMI is a five-state regional medical education~~ program's purpose is to ~~which~~ provides access to publicly supported medical education across the five-state region; however, HSSA funds would only support the program in Spokane.

- b) This Phase 1 funding is subject to the following agreement by UWSOM/WSU/[relevant academic institutions](#) and criteria:
- 50% of the faculty may have zero active research funding, and are not eligible for the recruitment packages/endowed chairs. Given the HSSA investment requirements, it is anticipated that salary support for this category of faculty will be supported by EHF and other members of the funding consortium.
 - 50% of the faculty will meet the target criteria of \$1.5 M total active funding. Given HSSA's funding requirements, HSSA will take the lead role for support of this category of faculty in the Phase 1 Second Year. Faculty that meet this requirement will be eligible for salary support out of the Second Year Phase 1, and will also be eligible for the HSSA recruitment packages/endowed chairs. Please refer to the Annual Estimated Investment Plan.

[Per Guiding Principle D, there is room for flexibility in this Goal. For example, in the event that more senior faculty recruits are unavailable, recruitment efforts could focus on promising new Principal Investigators.](#)

2016-2022 Funding for Strategic Goal #1: After Phase 1, HSSA and EHF will fund according to the criteria set forth above (e.g. requiring \$1.5 M in total active funding).

Recommended Funding Allocation: HSSA to invest 45%-60% of the portfolio in Goal #1. EHF to invest 30%-80% in this Goal.

ROI Goal: Recruit well-funded Principal Investigators (PI), with at least \$1.5 M in total active grant dollars per PI. This effort, if continued annually, could be expected to increase research funding to \$70 million by 2030.⁵

[According to estimates prepared by Tripp Umbach \(2010\), total academic job growth is estimated to be approximately 932 jobs by 2017, 1,791 jobs by 2023, and 2,841 by 2030. These estimates encompass created and sustained employment within the eastern Washington region attributable to WWAMI Medicine Spokane, WSU Pharmacy, EWU Health Sciences, WSU Nursing, and Other Riverpoint Health Science Programs.](#)⁶

⁵ See footnote 3 for rationale of level of funding brought to Spokane region.

⁶ [Estimates from Regional Economic and Community Benefits of the Academic Health Science Center @ Riverpoint in Spokane, WA, Tripp Umbach, June 2010, page 26.](#)

Strategic Goal #2: Fund Innovative Research to Expedite Commercialization and Spur Job Growth

Rationale: Support for commercialization and innovation is critical to grow, attract, and retain companies. Commercialization grants could focus on research that validates the commercial potential of new health technologies or biomedical devices, including research on prototype development, proof of concept, and other translational efforts.

This Goal supports innovation and growth of companies as a key regional economic development initiative. By providing matching funds for Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants, HSSA's grant-making process will benefit from the rigorous federal peer review process. This leveraging effect will increase the grant-making organizations' likelihood of funding proposals that will result in tangible outcomes.

Funding of this Strategic Goal is intended to:

- Facilitate commercialization of research and technology
- Create jobs
- Attract and retain companies
- Be credible to funders and the community

Strategic Elements:

A. Provide Matching Funds for SBIR and STTR Phase 1 and Phase 2 Grants, or Other Competitive Grants, such as those from the Gates Foundation and Other Funders.

- These funds are to be used to recruit and retain biosciences companies in Spokane County. As a recruiting tool, Greater Spokane Inc. (GSI), Spokane County and the City of Spokane will be encouraged to market this benefit on the national stage in order to help entice companies to the greater Spokane area. This marketing effort will be evaluated for effectiveness in three years.

B. Provide Matching Funds for Grants from Established Proof of Concept Funders, such as Innovate Washington, or Externally or Peer-Reviewed Funding.

Funds allocated for Goal #2 that have not been distributed (disbursed) within a period of three years from initiation of the program will be returned to HSSA for reallocation.

Recommended Funding Allocation: HSSA to invest 30%-45% of the portfolio in Goal #2.

ROI Goal-Setting Process: Grantees will report annually on revenue and jobs created. With two years of data, an effective baseline will be established, against which to estimate targeted ROI for new grants awarded.

According to estimates prepared by Tripp Umbach (2010), total job growth is estimated to be approximately 351 jobs by 2017, 1,224 jobs by 2023, and 3,472 by 2030. These estimates encompass created and sustained employment within the eastern Washington region attributable to commercial applications, start-up companies, attraction of new companies to the region, and growth within existing eastern Washington-based companies.⁷

⁷ Estimates from *Regional Economic and Community Benefits of the Academic Health Science Center @ Riverpoint in Spokane, WA*, Tripp Umbach, June 2010, page 46.

Strategic Goal #3: Support Innovative Research that Advances Spokane as a National Leader in Health Delivery Research

Rationale: Spokane has a unique and time-sensitive opportunity to become a national leader in health delivery research. Strategic investments by EHF and other funders will focus on translational research across disciplines and between institutions, including programmatic research examining the effectiveness of: 1) interprofessional education initiatives; 2) academic-practice partnerships; 3) academic-industry initiatives; and 4) novel clinical practice initiatives.

These investments will accelerate the development and recognition of Spokane as a leader in the development and testing of academic health science innovations. They reflect a contemporary, non-siloed operational model that will put Spokane at the forefront of health sciences research and planning. It will also allow Spokane's health sciences community to respond to the multifaceted health needs on our streets and in our clinics [and help expand access to care opportunities for the local population](#). Funding of this Strategic Goal is intended to:

- Facilitate translational/implementation research
- Decrease cost of healthcare delivery
- Increase quality of healthcare in the region

HSSA Intent: These grants must demonstrate economic benefit for the region, by reducing the cost of health care, reducing patient use of emergency care or hospital visits, or other community economic development benefits. In addition, the research described below must have evidence of a federal-level (or equivalent) peer scientific peer review by at least one reviewing authority (outside of HSSA, and the Inland Northwest) subject to HSSA approval.

Strategic Elements:

A. Support Innovative Research Aimed at Analyzing the Effectiveness, Economic Benefit, and/or Public Health Benefit of Health Delivery Research. Such research may address:

- Innovative approaches to clinical education and/or clinical service provision
- Helping to implement health science innovations into community-based clinical practices
- Potential links between clinical innovations and public health indicators

B. Provide Funding for Efficacy and Effectiveness Research Addressing the Adoption of Evidence-based Practice by Medical and Health Providers. Such studies may address:

- Urban vs. rural differences
- Determining the efficacy of various combinations of healthcare providers that deliver the optimal balance of quality and cost-effectiveness of care
- Differences in student and/or provider characteristics

C. Provide Support for Pilot Studies, Methodology Studies, Healthcare Workforce, and/or Feasibility Studies Examining the Potential of Healthcare Innovations. Examples include:

- Reliability/validity testing of instruments addressing care outcomes (e.g., patient satisfaction, prevention of adverse events)
- Secondary analyses of public health or healthcare utilization data
- The creation of merged datasets from two or more sources (e.g., CDC, healthcare utilization, prevention services)

Recommended Funding Allocation: HSSA to invest 10%-15% of the portfolio in Goal #3. EHF to invest 20%-50% in this Goal.

ROI Goal-Setting Process: Engage with grantees to collaboratively develop an evidence-based process for data collection and outcome-based metrics. This data collection will establish a baseline for measuring outcomes and subsequent stretch targets.

IMPLEMENTATION TASKS

HSSA and EHF will address the following implementation tasks and questions to successfully launch the Strategic Investment Plan:

- **Public Relations and Communications Program:** Establish the strategy to communicate this Plan to the various audiences. Draft talking points to address questions about the funding parameters and strategies.
- **Results Reporting:** In addition to the HSSA and EHF Boards, to whom and in what format will grantees report financial, health outcomes, and economic/jobs impacts or results?
- **Grant Award Process:** How will funding opportunities be promoted? How will funding decisions be made?
- **Philanthropic Fundraising Component:** While efforts are underway, more planning will occur to leverage other funding.
- **Memorandums of Understanding:** Develop a Memorandum of Understanding (MOU) between HSSA and EHF relative to this Plan, and between the University of Washington, Washington State University and HSSA/EHF around recruitment funding.

STRATEGIC INVESTMENT PLAN AT A GLANCE

Investment Portfolio Allocations

Per Guiding Principle D, HSSA and EHF will take a flexible and responsive approach. The recommended allocations are intended to be a guideline rather than a directive. Allocations will be reviewed on an annual basis, and updated by the respective Boards as deemed necessary.

EHF intends to invest \$2.5 million in a combination of health education and medical research over the ten-year investment period, keeping in mind EHF's ability to play a flexible role in creating a critical mass of academic health sciences research.

Investment Strategy	Total Targeted Investment (2013-22)	HSSA Allocation (\$10 M)	EHF Allocation (\$2.5 M)
Goal #1: Invest in Human Capital to Accelerate Spokane's Health Sciences Research Capacity	\$5.25 M - \$8 M (42-64%)	\$4.5 M - \$6 M (45-60%)	\$750,000 - \$2 M (30-80%)
Goal #2: Fund Innovative Research to Expedite Commercialization and Spur Job Growth	\$3 M - \$4.5 M (24-36%)	\$3 M - \$4.5 M (30-45%)	
Goal #3: Support Innovative Research that Advances Spokane as a National Leader in Health Delivery Research	\$1.5 M - \$2.75 M (12-22%)	\$1 M - \$1.5 M (10-15%)	\$500,000 - \$1.25 M (20-50%)

PUBLIC INPUT INTO THIS PLAN

This Strategic Investment Plan builds on and was informed by the significant groundwork that has been laid over the last decade in previous health sciences studies and collaborations in the Spokane region. The Plan aligns with current efforts by Greater Spokane Incorporated, Washington State University, and other business and community leaders to leverage health sciences as a key economic development realm for the region.

The recently released *Business Plan: America's Next Great Academic Health Science Center* by Tripp Umbach along with their 2002 *Assessment of Opportunities for Biomedical Economic Development* and the 2010 *Regional Economic and Community Benefits of the Academic Health Science Center @ Riverpoint*, were reviewed and considered during the development of this Investment Plan. Other key documents reviewed include: Huron Consulting's *University of Washington School of Medicine Graduate Medical Education Expansion Committee Final Report*, 2011, The Spokane Collaboration, *Designing the Future of Health Informatics Education and Discovery*, 2008, American Association for the Advancement of Science Research Competitiveness Service, *Review and Guidance to the Institute of Systems Medicine Planning Authority*, 2007.

Stakeholder Interviews. Important background and perspectives were obtained from stakeholder interviews conducted with 36 representatives from the region's universities, hospitals, businesses, and economic development associations. All of these organizations and individuals interviewed have an interest in economic development in Spokane and growing the health sciences sector. Attachment A contains a list of individuals interviewed and their organizations.

Public Meeting. A public hearing on the Draft Strategic Investment Plan was held on August 17, 2011.

GOVERNING BOARD ADOPTION

HSSA and EHF Board Adoptions. This Plan was adopted by the HSSA Board on _____, and by the EHF Board on _____.

ATTACHMENT A

EHF and HSSA identified a list of stakeholders to interview and sent an introductory email explaining the objectives of the interview. The following stakeholders were interviewed by telephone between March and July 2011.

- Dr. Andy Agwunobi, Providence Health Care
- Dr. Suzanne Allen, [WWAMI](#) and UW School of Medicine
- Dr. Tony Bonanzino, Institute for Systems Medicine
- Dr. Patricia Butterfield, WSU School of Nursing and HSSA Board Member
- Dr. Judd Case, Eastern Washington University
- Tom Fritz, Inland Northwest Health Services (INHS)
- Dr. Rex Fuller, Eastern Washington University
- William Gilbert, Deaconess Medical Center
- Dr. Howard Glass, Gonzaga University
- Dr. Howard Grimes, WSU Graduate School
- Dr. Michael Griswold, WSU School of Molecular Biosciences
- Rich Hadley, Greater Spokane Incorporated
- Dr. Jeffrey Hartman, Deaconess Medical Center
- Amy Johnson, Institute for Systems Medicine
- Dr. Christine Johnson, Community Colleges of Spokane
- Colleen Kerr, WSU
- Marcelo Morales, Jubilant HollisterStier
- Scott Morris, Avista
- Dr. Lin Murphy, Gonzaga University
- Steve Neff, Revita Rehab
- Dr. John Nilson, WSU School of Molecular Biosciences
- Dr. Kevin Oldenburg, MatriCal Bioscience and HSSA Board Member
- Dr. Guy Palmer, WSU School of Global Animal Health
- Erlene Pickett, Spokane Community College
- Dr. Brian Pitcher, WSU Spokane Campus
- Dr. Paul Ramsey, UW School of Medicine
- Dr. Carol Riesenber, Spokane Community College
- Dr. Ken Roberts, WSU School of Molecular Biosciences
- Dr. John Roll, WSU School of Nursing
- Dr. Lisa Shaffer, Signature Genomics
- Dr. Bryan Slinker, WSU College of Veterinary Medicine
- Dr. Richard Smith, PNNL
- Dr. Patrick Tennican, Hyprotek
- Dr. Katherine Tuttle, Providence Medical Research Center at Sacred Heart
- Mike Wilson, Interim CEO of Sacred Heart Medical Center, Children's Hospital and Holy Family Hospital and HSSA Board Member
- Dr. Dave Vachon, Iasis Molecular Sciences and HSSA Board Member

ATTACHMENT B

WSU GRANTS BY TOP 25 FUNDERS BASED ON AWARDS RECEIVED

(07/01/09-06/30/10)

The following Exhibit shows Washington State University grant funding received in the last year, by funder. This information helps present a picture of the region's grant funding strengths.

Agency	Quantity	Amount
US Department of Agriculture	214	\$36,188,293
National Science Foundation	120	\$25,305,731
Health & Human Services (NIH/CDC/HRSA)	99	\$21,365,052
WA Department of Commerce	11	\$17,597,265
Department of Energy	43	\$14,144,367
WA Department of Social and Health Services	17	\$8,275,165
Department of Education	14	\$7,088,262
Non-federal via WSU Foundation	18	\$5,980,969
Department of Defense	32	\$5,412,997
Life Sciences Discovery Fund	2	\$5,148,615
Energy Enterprise Solutions	10	\$4,759,095
WI/Western Interstate Commission for Higher Education	12	\$3,619,435
UW	45	\$3,081,341
Battelle - PNNL	42	\$2,530,105
US Small Business Administration	6	\$2,130,740
WA Grain Commission	34	\$2,004,320
WA Department of Ecology	11	\$2,001,565
WA Department of Agriculture	31	\$1,757,928
WA Attorney General	5	\$1,277,023
Kellogg Foundation	4	\$1,265,637
Department of the Interior	25	\$1,214,009
Corporation for Public Broadcasting	3	\$1,206,173
WA Higher Education Coordinating Board	15	\$1,192,200
WA Tree & Fruit Research Commission	35	\$1,175,229
WA Potato Commission	35	\$934,285
Total (top 25)	883	\$176,655,801

Source: WSU, Office of Grant and Research Development, *Proposal and Award Summary, FY10*