WASHINGTON STATE
UNIVERSITY

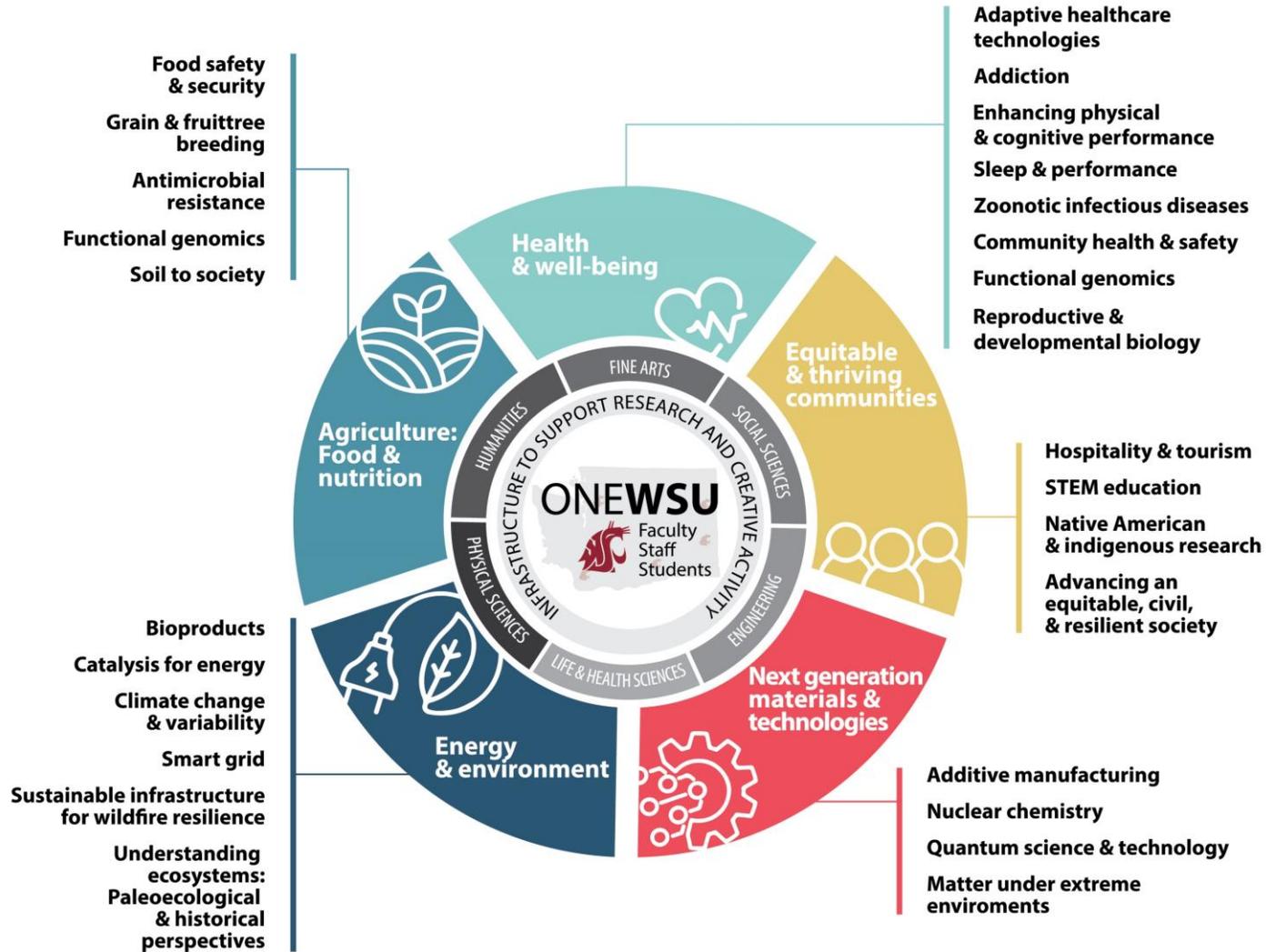# Office of Research Update

February 3, 2021

Presented to: WSU Faculty Senate

Presented by:
Christopher J. Keane, Vice President for Research, WSU
Vice Chancellor for Research, WSU Pullman
with

Geeta Dutta, Assistant Vice President for Research
Dan Nordquist, Associate Vice President for Research and Deputy VPR for Operations

WSU faculty, staff, students, and partners are rising to the challenge- conducting world class research, scholarship, and creative activity that benefits WA State, the US, and the world
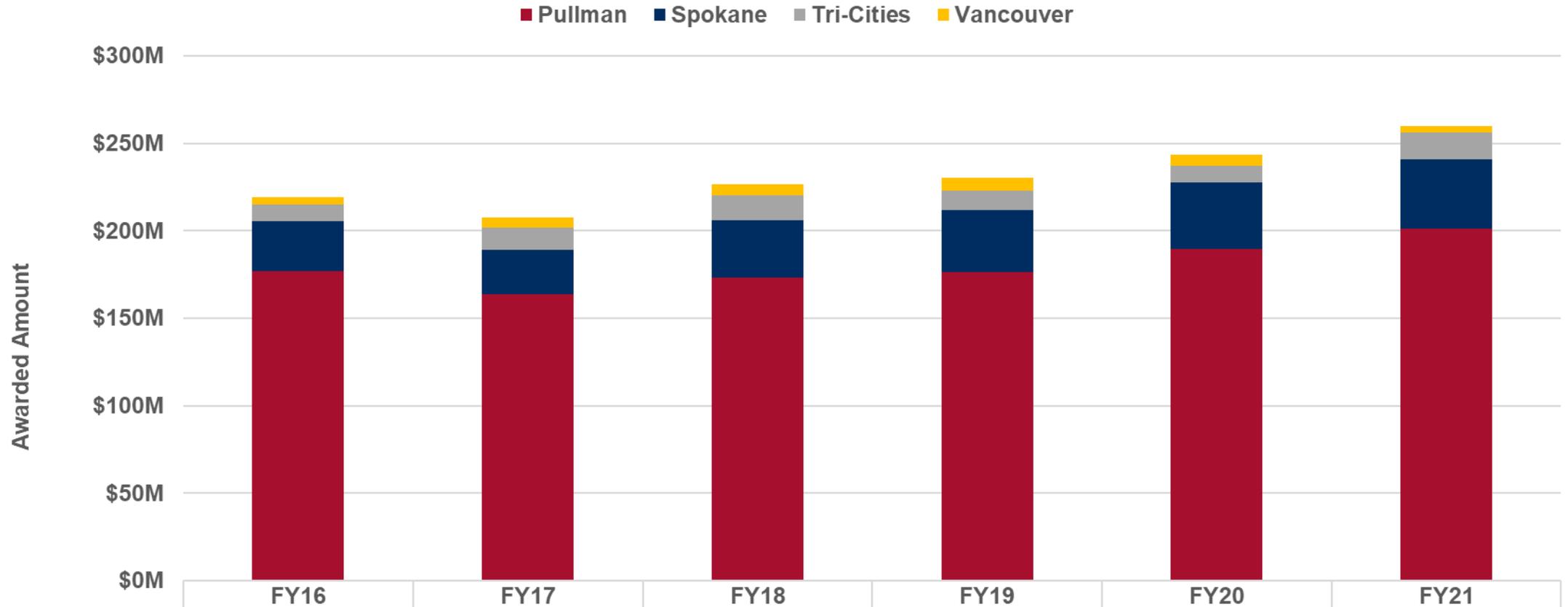

It takes a team!

(Figure in progress)

Highlights- WSU research performance

- Record activity: ~2,500 proposals submitted, total value ~$1.3B (FY2021)

- Individual excellence recognized: WSAS membership, AAAS Fellowships,….

- Record 2021 awards, including the largest grant ($125M) in WSU history

- Center for Arts and Humanities (funded by OR, CAS, others), now entering its fifth year, has generated a distinguished history of scholarship

- PNNL collaboration has made outstanding progress

  - Three Institutes (BIOIN, Advanced Grid, Nuclear) now fully formed- over $20M in new awards

  - WSU-PNNL Distinguished Graduate Research Program: 5 years, 24 students, 14 alumni

  - 42 WSU/PNNL joint appointments- the largest of any PNNL university partner

- Research computing (Kamiak) highly successful: 150 nodes, over 1000 users

- Record licensing revenue ($9.5M); over 65 new industrial partnerships
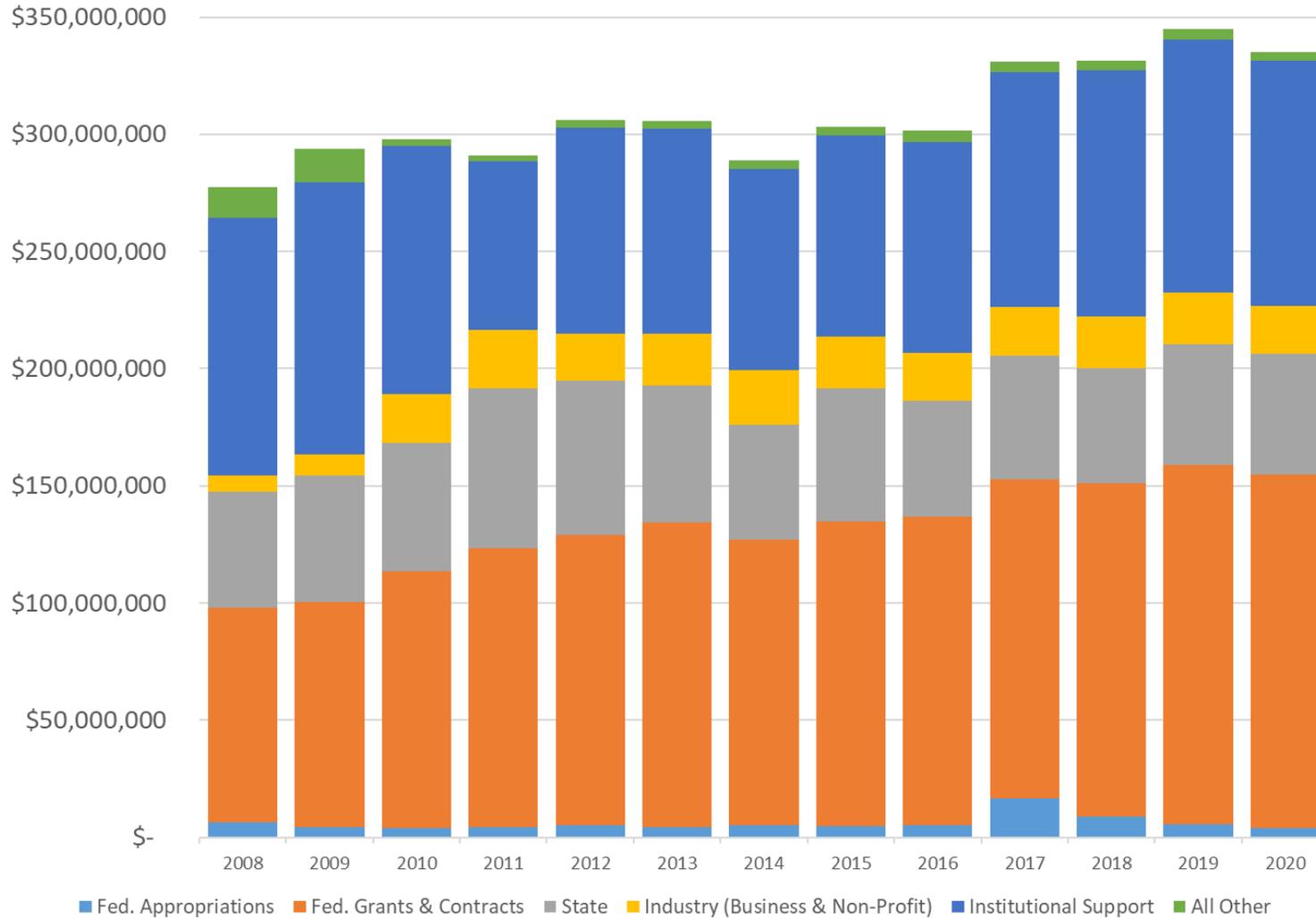
- 3 Keck Foundation finalists (all awarded) since 2017

WSU had a record year for sponsored awards in 2021

Legend: ■ Pullman ■ Spokane ■ Tri-Cities ■ Vancouver

Y-axis: Awarded Amount ($0M, $50M, $100M, $150M, $200M, $250M, $300M)

X-axis: FY16, FY17, FY18, FY19, FY20, FY21

- **Total FY21 awarded amounts increased by almost $17M compared to FY20**

- **Large Awards:** Awarded amounts >$1M grew in number (+4) and in value (+$18M)

- **Federal Awards:** Increased in FY21 by $37M total (HHS funding +10M; USDA funding +24M)

- **COVID-Related Research:** Awarded projects that focused on COVID-related research totaled $1.1M in FY20, and $12.0M in FY21

WASHINGTON STATE UNIVERSITY

Updated WSU NSF HERD R&D expenditures for FY2008-FY2020 (reflects corrections to philanthropic-related expenditures)

FY2019 corrections:

	Corr.	Uncorr.
Expend.	$345M	$369M
Total rank	76	70
Public rank	49	46

Data corrected for 2010-2020

Legend: Fed. Appropriations, Fed. Grants & Contracts, State, Industry (Business & Non-Profit), Institutional Support, All Other

WSU is having increasing success garnering large research awards

Preparing the world to fight infectious diseases

$125M (USAID)

Felix Lankester

Discovery & Exploration of Emerging Pathogens - Viral Zoonoses

Making food more nutritious, flavorful, and affordable

$10M (USDA)

Kevin Murphy

Optimizing Human Health & Nutrition: From Soil to Society

Developing AI solutions to tackle agricultural challenges

$20M (NSF-USDA)

Ananth Kalyanaraman

AI Institute: Agricultural AI for Transforming Workforce & Decision Support (AgAID)

Implementing a new approach to rivers and watersheds research training and community engagement

$3M (NSF)

Jan Boll

NRT: Rivers, Watersheds, Communities: Training an Innovative, Cross-Sector Workforce for Equitable, Multi-Scale Decision-Making Towards Human & Ecosystem Health

It takes a team!

WASHINGTON STATE UNIVERSITY

Outstanding new faculty have been hired via the Grand Challenges Program (FY2016-FY2021)

Notable Accomplishments

HERC

Established a practice-based research network linking hospitals and clinics, which will allow for electronic record sharing for research purposes.

Nutritional Genomics

Led to the Soil to Society initiative and a $10M grant.

Functional Genomics

FGI Research Service Cores have increased competitiveness of over 20 research groups

HERC

Pablo Monsivais
Nutritional Epidemiology *(2/17)*

Anna Zamora-Kapoor
Race, Ethnicity, & Social Determinants of Health *(4/17)*

Robert Danielson
Pedagogical Practices & Learning Technologies *(7/17)*

Justin Denney
Health & Mortality Disparities; Family; Community *(8/16/17)*

Mina Park
Health Communication *(8/17)*

Nutritional Genomics

Ofer Amram
Spatial Epidemiology *(8/17)*

Franck Carbonero
Gut Microbiome *(7/19)*

Patrick Solverson,
Nutrition & Exercise Physiology *(8/20)*

FGI

Ryan Driskell,
Tissue Regeneration/Wound Repair, *(3/17)*

Samantha Noll
Bioethics, *(8/17)*

Michael Phelps,
Growth & Development *(8/19)*

James MacLean
Reproductive Genetics *(7/20)*

Nathan Law
Reproductive Physiology *(7/20)*

Kanako Hayashi
Stem Cell Biology *(7/20)*

Stormwater

Jenifer McIntyre
Aquatic Toxicology *(5/16)*

Joe Cook
Water Economics *(8/17)*

Courtney Gardner
Microbiology, Civil & Environmental Engineering *(8/18)*

The Grand Challenges strategic research initiatives have been very successful

Grants* & Publications Summary (FY16-21)

	Total Investment	Faculty	Awards			ROI	Publications	
	$M	n	n	n >$1M	$M	X	Collaborative	Unique
HERC	2.7	33	258	26	108	40	88	458
Nutritional Genomics	2.1	17	214	13	57	27	61	473
Functional Genomics	3.95	26	105	12	43	11	27	538
Stormwater	2.1	14	185	9	47	23	12	328
Total	**10.9**		**762**	**60**	**256**	**24**	**188**	**1797**

*_Unique_ awards as either PI or collaborator

WASHINGTON STATE UNIVERSITY

The Animal Welfare Program and Institutional Animal Care and Use Committee (IACUC) have improved their support of WSU faculty and staff

Protocol Type	2019	2020	2021
New Research/Teaching	64	50	64
3 Year Protocol Resubmission	79	56	89
Total	143	106	153
Total Active Protocols	~500*	457	400
Avg. Review Time (days)	23	22	22
Exempt/Tissue Use	*	10	14

Highlights:

- New online protocol system launched late 2017, fully operational 2020.

- Created and staffed the Animal Welfare Program Office with an Assistant Director, 2 program specialists and 1 Post Approval Reviewer (moved from OCV).

- AWP Office took on the compliance and administrative duties from OCV (e.g. annual reporting and noncompliance reviews and reporting).

- Standardized IACUC processes and policies and publish/maintain on improved website.

- Maintained an average review time for new protocols under 30 days.

- Office of the Campus Veterinarian cares for over 24,000 animals, with major vivariums now centralized

The Human Research and Protection Program (HRPP) and Institutional Review Board (IRB) have improved their support of WSU faculty and staff

Improved Review Times vs. National Average (2020) reported in business days:

	AAHRP	WSU
Average "pre-review" time to reviewer assignment	7.5	5 (was 10-15)
Complete submission to approval (expedited)	20	~20 (IQR = ~15-30)
Complete submission to initial review at convened board	14	<10
Complete submission to approval @ FB	45	~50 (range 30-90+)
Complete submission to approval (exempt)	11	~10 (IQR = 7-15)

Highlights:

- Launched improved IRB website including updated policies to comply with the revised common rule and; streamlined forms/application materials

- Streamlined review processes: metrics developed for ongoing evaluation of program performance; improved review times in all categories; review times are now competitive with (or better than) the national average.

- Increased permanent HRPP/IRB Office staffing to include: Assistant Director, 2 compliance specialists, 2 IRB Review Coordinators and .5 FTE faculty reviewer.

- Substantially increased continuing education and training opportunities for IRB members, staff and researchers.

- Online protocol system developed and in testing stage

The Research Safety Program is dedicated to ensuring safe conduct of research at WSU

- **Institutional Biosafety Committee (IBC) & Biosafety Program:** Oversees use of potentially biohazardous materials, as used by over 200 research groups in labs and field trials statewide

- **Select Agent Program** provides oversight for WSU & USDA research and WADDL diagnostic activities for the most regulated pathogens, with a successful program renewal audit in winter 2021

- **Radiation Safety:** Oversees all use of radioactive materials and x-ray producing machines statewide

- **Hazardous Materials Shipping:** Supports regulated hazmat shipments, averaging 850 packages each year

- **Export Controls:** Reviews technology control plans and restricted party screenings for the statewide university

- **Responsible Conduct of Research:** All personnel involved in research are trained

"Hot topics" and questions

- **Award processing**

- **Contract processing**

- **Staff positions- AP vs. Civil Service**

- **Recruitment and retention**

- **Other**

Thank you for your attention!