Office of Research Update

February 16, 2023
Presented by:
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Vice Chancellor for Research, WSU Pullman
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!
The Revised WSU System Strategic Plan Was Issued in Fall 2022

- **Goal 1: Research, Innovation, and Creativity**
  - Objective: Increase research expenditures 5%/yr.

- **Goal 2: Student Experience**
  - Objective: First to second year retention: Reduce the retention gap between our overall group and our first-generation, Pell-eligible, and people of color by 1% per year.

- **Goal 3: Outreach, Extension, Service, and Engagement**
  - Objective: Consensus on a shared definition of community engagement, metrics to be used, and a system-wide tool for data collection.

- **Goal 4: Institutional Effectiveness and Infrastructure**
  - Objective: Faculty and staff demographics: Reduce reporting unknowns for race and ethnicity data: Faculty from 32.7% to 10%; Staff from 23.3% to 10%.
<table>
<thead>
<tr>
<th>Strategies</th>
<th>CY 2023 metric</th>
<th>Next steps</th>
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</thead>
<tbody>
<tr>
<td>1. Increase the number, quality, and success rate of large multidisciplinary proposals for research and scholarly activity.</td>
<td>CY 2023 Metric: Number of OR supported proposals with value greater than $1M ≥ 8.</td>
<td>Address ORAP effort/staffing shortfall so as to accommodate faculty requests for proposal support.</td>
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<td>2. Expand PNNL collaboration to develop a new Institute or similar level focused activity in the life or environmental sciences, or related areas.</td>
<td>CY2023 Metric: Develop a proposal for this activity that includes a funding goal.</td>
<td>Office of National Laboratory Partnerships and involved WSU leadership/faculty to meet w/ PNNL leadership and develop options and a plan.</td>
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<td>3. Develop a systemwide plan for climate-related research, including a symposium to identify new research opportunities.</td>
<td>CY 2023 Metric: Deliver plan at the end of CY2023, including a path to enhance associated sponsored research activity.</td>
<td>Extend current climate group research efforts to full spectrum of activities; coordinate with campus sustainability and other initiatives.</td>
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<td>4. Develop a systemwide plan for enhancing WSU research, scholarship, and creative activity in the full range of scholarly disciplines, including the arts and humanities. The plan should include prioritized areas for internal investment.</td>
<td>CY 2023 Metric: Deliver plan at the end of the year, including a path to enhance associated sponsored research activity.</td>
<td>Request all colleges to provide 3 major areas of current interest, 3 major areas of emerging interest, and funding targets. Also request input on infrastructure. Based on this input develop a plan to enhance systemwide research expenditures.</td>
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ORSO submits ~$1B/yr. in proposals and provides essential faculty/staff services

- 2214 proposals w/ value $963M submitted in FY22 (record: FY21- $1.23B)
- Working with WSU IR, corrected WSU expenditure data and submitted revised figures to NSF.
- Recently completed the MyResearch Award and Budget Set-Up Tabs in collaboration with SPS to improve Award set-up time. This has had a big impact on account set-ups!
- Created a new resource website and presented a Zoom webinar providing information and guidance on the new NIH Data Management and Sharing policies and processes.
- ORSO and DARPA hosted the 9/22 “DARPA FORWARD” meeting at WSU- ~500 attendees!
- Massive data clean-up project underway to crosswalk MyResearch data with Workday. Quality award data is now available, with more improvements coming!
- Research Security guideline developed- remember to “disclose, disclose, disclose!”
WSU NSF HERD R&D expenditures for FY2008-FY2022 (WSU expenditures per T/TT faculty are close to highest in our peer set)
Total Value of WSU Research Awards has Steadily Increased
(Excludes Stimulus Funding)

Federal
Washington State Agency
Local Government
Industry
Foreign
State Government
University
Commission
Large awards (over $3M) have increased ~3x since 2016
(Excludes Stimulus Funding)

- FY16: $24,802,174
- FY17: $11,264,909
- FY18: $30,707,290
- FY19: $28,754,902
- FY20: $25,478,110
- FY21: $39,966,144
- FY22: $60,991,702

Large award amounts (over $3M) → Large award counts (over $3M)
The Number of Involved Proposers/PIs is Decreasing
(Excludes Stimulus Funding)

# of unique proposed Lead PIs
# of unique awarded Lead PIs
T/TT Faculty Headcounts per IR (2014/2020)
Established in FY2016; led by Dr. G. Dutta, now AVC/AVP Prof. Kim Christen

Oversight of key investments in research:

- Proposal support- and leadership training for large proposals
- “Grand Challenge” research investment program (FY2016-FY2021; ~17x ROI)
- New Faculty Seed Grants (Provost/OR collaboration)
  - Funding $200K/yr, split by OR/Provost ($305K in FY2016)
  - Since 2000: 963 proposals; 279 awards; $4.75M invested
  - PIs have submitted 734 external proposals, garnered $49.4M in awards (~10x ROI)
- Climate Hackathon (May 2022; 2 $55K seed grants; 3 $20K/RA awards)
Through FY2022, ORAP has supported over 400 proposals (including numerous honorifics (e.g. NSF Career)) yielding over $250M in awards.

<table>
<thead>
<tr>
<th>SFY 2022</th>
<th>&gt; $5M</th>
<th>$1M &lt; $5M</th>
<th>$500K &lt; $1M</th>
<th>&lt; $500K</th>
<th>Total</th>
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<tr>
<td>Submitted</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>14</td>
<td>34</td>
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<tr>
<td>Funded</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Pending</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>19</td>
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<tr>
<td>Denied</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>13</td>
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<tr>
<td>% funded so far</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>17%</td>
<td>13%</td>
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<table>
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<tr>
<th>Running 6+ Year Total</th>
<th>&gt; $5M</th>
<th>$1M &lt; $5M</th>
<th>$500K &lt; $1M</th>
<th>&lt; $500K</th>
<th>Total</th>
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<tr>
<td>Submitted</td>
<td>34</td>
<td>95</td>
<td>104</td>
<td>178</td>
<td>411</td>
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<tr>
<td>Funded</td>
<td>6</td>
<td>19</td>
<td>19</td>
<td>46</td>
<td>90</td>
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<tr>
<td>Pend/ Wit/ Pre</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>21</td>
<td>39</td>
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<tr>
<td>Denied</td>
<td>21</td>
<td>69</td>
<td>81</td>
<td>111</td>
<td>282</td>
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<tr>
<td>% funded so far</td>
<td>22%</td>
<td>22%</td>
<td>19%</td>
<td>29%</td>
<td>24%</td>
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Total $ Funded: $253,425,713
Outstanding new faculty have been hired via the Grand Challenges Program (FY2016-FY2021)

**HERC**
- Pablo Monsivais, Nutritional Epidemiology (2/17)
- Anna Zamora-Kapoor, Race, Ethnicity, & Social Determinants of Health (4/17)
- 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)

**Functional Genomics**
- 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)

**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.
The “Grand Challenge” strategic research investments very successful

Grants* & Publications Summary (FY16-21)

<table>
<thead>
<tr>
<th></th>
<th>Total Investment</th>
<th>Faculty</th>
<th>Awards</th>
<th>ROI</th>
<th>Publications</th>
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<tr>
<td></td>
<td>$M</td>
<td>n</td>
<td>n</td>
<td>n &gt;$1M</td>
<td>$M</td>
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<tr>
<td>HERC</td>
<td>2.7</td>
<td>33</td>
<td>258</td>
<td>26</td>
<td>108</td>
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<tr>
<td>Nutritional Genomics</td>
<td>2.1</td>
<td>17</td>
<td>214</td>
<td>13</td>
<td>57</td>
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<tr>
<td>Functional Genomics</td>
<td>3.95</td>
<td>26</td>
<td>105</td>
<td>12</td>
<td>43</td>
</tr>
<tr>
<td>Stormwater</td>
<td>2.1</td>
<td>14</td>
<td>185</td>
<td>9</td>
<td>47</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10.9</strong></td>
<td>762</td>
<td><strong>60</strong></td>
<td><strong>256</strong></td>
<td><strong>24</strong></td>
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*Unique* awards as either PI or collaborator
ORA and OCV are “getting the job done” - handling enhanced workload arising from increased protocol complexity

• ORA and OCV leadership team and staff provide outstanding service
  • ORA: (M. Kluzik (Director); J. Crossno (Human Research Protection Program), A. Ekstrand (Animal Welfare Program); L. O’Loughlin (Bio- and radiation safety); M. Court (IACUC Chair); A. Lazarus/C. Barry (IRB Chairs); K. Sanguinet (IBC Chair); T. Wilkinson (Radiation Safety Chair)
  • OCV: N. Woodford (Director); G. Clyde (Veterinary Services); G. Gorence (Vivarium services); G. Anderson (Administrative Services); J. DenHerder (Training)

• Near term IRB goals: Electronic IRB implementation; HRPP accreditation
• OCV: Oversight of 73,000 animals; record 3rd consecutive AAALAC accreditation (2022)

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<thead>
<tr>
<th></th>
<th>Total active protocols (12/31/2022)</th>
<th>New protocols approved (2022)</th>
<th>Average review time (new)</th>
</tr>
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<tbody>
<tr>
<td>IACUC/Animal Welfare Program</td>
<td>423</td>
<td>70</td>
<td>28 days</td>
</tr>
<tr>
<td>IRB/Human Research Protection Program</td>
<td>1758</td>
<td>409</td>
<td>32 days</td>
</tr>
<tr>
<td>IBC/Biosafety Program</td>
<td>202</td>
<td>95</td>
<td>30 days</td>
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Office of National Laboratory Partnerships: Building PNNL and other collaborations, and advancing STEM research

Joint Institutes (Grid, Bioproducts, Nuclear)

- $130M in funding since 4/18

Distinguished Graduate Research Program

- 42 students/alumni to date

Joint appointments

- 50 total (WSU is PNNL's largest collaborator)
WSU IP portfolio, and licensing revenues, have grown significantly

However: Disclosures and new patents are dropping due to limited resources available for patent costs
The Innovation and Research Engagement Office (IREO) grows faculty engagement with industry and manages key enabling programs (NSF I-CORPS, WA State SBDC, WSU “Industry 101,” Entrepreneurial Faculty Ambassadors)

WSU research funding from industry
IREO Impacts

FY 2022 Industry Funding

• Provided support for 52% of industry funding
• 54% of $100k+ projects are IREO engaged
• 40 IREO-supported Faculty across 71 funded projects
• Average award of $72,747 (IREO) vs. $43,894 (non-IREO)
• Median award $20,000 (IREO) vs. $10,000 (non-IREO)

Programs

• Department Seminar Program
  • $821,874 since program launch in September 2019
  • $358,619 in FY22
• Working with Industry 101
  • 160 participants since 2020
  • Next series May 2023
• Corteva Seminar Series:
  • 4 Faculty presenters with 2 faculty moving to sponsored project discussions
  • 5th Faculty member planned for Spring 2023 (date pending)
Thank you for your attention! Questions?