Progress Report on Research Strategic Planning at UH Mānoa

M. Bruno
Vice Chancellor for Research
August, 2016
Overarching Goal:
Increase the **volume** and **impact** of UH Mānoa research ACROSS disciplines

Five target areas:

1. Improve faculty research development support (across all academic units and ORUs)
2. Reduce faculty research administrative burden
3. Improve use and support of core research facilities
4. Enable and support student research
5. Understand – and communicate – the impact of research
Research at Mānoa

➢ The education of students is the core mission of the University; it is the reason we exist.

➢ Research serves to inspire, inform, and support the educational mission, from the recruitment of faculty who are leaders in their profession to the opportunities for experiential learning in leading-edge laboratories, centers, and studios.

➢ Service to the community and to the profession ensures that the work of the University is transferred to our constituents and stakeholders for the public good.
1. Improve faculty research development support (across all academic units and ORUs)
   - Create a network of Grants Development Offices (GDOs), websites, newsletters, email lists
   - Create a searchable database of faculty expertise, research projects, scholarly work, and a website network for funding opportunities
   - Faculty incentives for IP development, commercialization

2. Reduce faculty research administrative burden
   - Urgent Care Facility for faculty researchers
3. **Improve use and support of core research facilities**
   - Online searchable information resource for campus core facilities

4. **Enable and support student research**
   - Create a [Center for Undergraduate Research](#)
   - Encourage & facilitate programs to have an undergraduate research requirement

5. **Understand – and communicate – the impact of research**
   - Highly visible network of communications professionals
The Big Issues

- Comprehensive review of the Organized Research Units
  - new ORUs?
  - re-organized ORUs?
  - new models?

- Expectations for Research Faculty, including teaching. Already underway.

- Strategic hiring, including across Organized Research Units and Academic Units
Next Steps

• Early Fall – socialize recommendations more widely via website, faculty and staff surveys, and several Research Town Halls

• Finalize recommendations and action plans by December, 2016
APPENDIX
THE FULL PROGRESS REPORT
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Process

- Working group began with the VCR Research Advisory Council (RAC)
- RAC sub-committees assigned in each of the 5 target areas
- Each sub-committee then invited additional members to ensure diversity in membership, remembering that there are many definitions of “research” across campus
- Each sub-committee instructed to engage the wider campus community, via emails, surveys, focus groups, etc.
- Each sub-committee instructed to be mindful of metrics, milestones, and timelines.
- The report will be prepared using the matrix framework that has already been adopted for other sections of the Mānoa Strategic Plan (viewable on the VCAA website)
Members of the Research Advisory Council

Michael Bruno, Chair
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Chad Walton  
Research Program Officer, OVCR, UH Mānoa
Research at Mānoa

- The education of students is the core mission of the University; it is the reason we exist.

- Research serves to inspire, inform, and support the educational mission, from the recruitment of faculty who are leaders in their profession to the opportunities for experiential learning in leading-edge laboratories, centers, and studios.

- Service to the community and to the profession ensures that the work of the University is transferred to our constituents and stakeholders for the public good.
IMPROVE FACULTY RESEARCH DEVELOPMENT SUPPORT (ACROSS ALL ACADEMIC UNITS AND ORUS)
### Overall Goal
Advancing faculty research development to build capacity in units/schools/colleges to support faculty pre-award activities.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Responsible Group</th>
<th>Short Term (2 year) Measurable Outcomes</th>
<th>Long Term (5 year) Measurable Outcomes</th>
<th>Impact</th>
<th>Resources</th>
</tr>
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<tbody>
<tr>
<td>Motivate faculty members towards fundable research endeavors by bringing awareness of sponsored research opportunities or research thrusts</td>
<td>OVCR</td>
<td>Increase number of sponsored research projects</td>
<td>• Improve number and quality of faculty research programs</td>
<td>Improve the faculty research experience; create high-quality funded research programs</td>
<td>Create a network of Grants Development Offices (GDOs), websites, newsletters, email lists</td>
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<td></td>
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<td><strong>Metrics:</strong></td>
<td>• # publications/faculty • # grants submitted • $ amount of grants submitted</td>
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<tr>
<td>Identify and eliminate challenges associated with faculty applying for sponsored research opportunities</td>
<td>OVCR</td>
<td>Determine barriers and impediments to sponsored faculty research; what prevents faculty from applying for grants • interviews with outgoing faculty • interviews with incoming faculty</td>
<td>• See prior column • Faculty satisfaction with grant process</td>
<td>Promote a culture of facilitating faculty pursuit of sponsorship.</td>
<td>Faculty surveys Faculty interviews</td>
</tr>
<tr>
<td>Create vehicles for bringing together faculty for specific funding opportunities and creating collaborative multidisciplinary research projects</td>
<td>OVCR; ORS, Deans; Fiscal</td>
<td>Part of this effort would be data collection on what faculty capabilities, capacity, and funding opportunities • Faculty data collected • Sponsorship data collected</td>
<td>Significantly increase the number of collaborative research efforts</td>
<td>Increase overall ability of the university to respond to the changing research funding landscape</td>
<td>Create a searchable database of faculty expertise, research projects, scholarly work, and a website network for funding opportunities</td>
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| Design, coordinate and implement services for faculty applying for grants  | OVCR; ORS; Fiscal          | Increase tools/templates/media available for faculty to prepare, edit, and review proposals (this can be acquisition of products, in house development, and/or organization of existing products and web-services) | • # proposals submitted  
• Faculty satisfaction  
• Success rate                                                                                                 | A stronger pipeline for faculty managing proposals, especially collaborative proposals, and helping new faculty produce quality proposals more quickly | • Existing websites and webservices  
• Email lists to make faculty aware  
• Feedback surveys for improvement                                                                                         |
| Hold grant-writing workshops (for faculty, postdoctoral researchers, and students) | OVCR; ORS; OFDAS; Fiscal; Deans | Increase familiarity of faculty to the grant-writing process                                             | Improved success rate of proposals                                                                  | Faculty more familiar with the challenges of applying for grants and ways in which to overcome them; better prepared for responding to opportunities | Existing grant-writing series conducted at college levels                |
| Faculty-led panels for faculty and students                               | OVCR; Chairs                | Increase the campus awareness, conversation and culture around sponsored research                       | • # panels held  
• Awareness by faculty and students                                                                      |                                                                                                                                           |                                                                                                                                         |
| Host visits by agencies, foundations, and industry                        | OVCR; OVPRI                |                                                                                                         |                                                                                                                                             |                                                                                                                                           |                                                                                                                                         |
**Goal: Successful transitioning of sponsored research (post-funding)**

<table>
<thead>
<tr>
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<tr>
<td>Educate faculty on transitioning research results to intellectual property</td>
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<th>Responsible Group</th>
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<tr>
<td>OVPRI; OTTED</td>
<td>Educating faculty on identifying intellectual property and pathways to protect and transition IP</td>
<td>Create a pipeline for faculty to build intellectual property from their research</td>
<td>Faculty are incentivized and supported to apply for sponsored research with the possibility of generating IP from which the University and the faculty can financially benefit</td>
<td>Faculty incentives, Surveys, Feedback, Websites, Web services</td>
</tr>
</tbody>
</table>

**Metrics:**
- # invention disclosures
- # patent applications
- # copyrights
- # faculty educated on IP process
- Awareness of IP benefits

- See previous column
- # SBIRs, etc applied for
- # startup companies generated
- # licenses
- # patents received
REDUCE FACULTY RESEARCH ADMINISTRATIVE BURDEN
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<td>“Urgent care facility”: Provides support to PIs with poor administrative infrastructure, and also coordinates cookbooks &amp; listserv</td>
<td>OVCR; OVPRI (ORS)</td>
<td>Better support for PIs, especially those from smaller units&lt;br&gt;<strong>Metrics:</strong>&lt;br&gt;• # requests processed&lt;br&gt;• Response times&lt;br&gt;• # PIs supported&lt;br&gt;• # units supported&lt;br&gt;• # grants supported&lt;br&gt;• $ grants supported</td>
<td>Sustained support for PIs&lt;br&gt;• Satisfaction surveys</td>
<td>Improved faculty satisfaction and success in externally-supported research, from proposal generation to the conduct of research, to the preparation of final reports.</td>
<td>Urgent Care Facility for faculty researchers; Possibly located within the evolving faculty and staff support office at Mānoa.</td>
</tr>
<tr>
<td>Create &amp; maintain online cookbooks / FAQs for common administrative procedures / sample justification language (for PIs)</td>
<td>Urgent Care Facility, ITS, + experienced admin staff</td>
<td>Availability &amp; use of cookbooks&lt;br&gt;<strong>Metrics:</strong>&lt;br&gt;• # individual “recipes” posted&lt;br&gt;• # clicks / downloads</td>
<td>Improved efficiency for common administrative tasks &amp; reduced administrative burden for PIs&lt;br&gt;<strong>Metrics:</strong>&lt;br&gt;• Faculty satisfaction as measured by surveys&lt;br&gt;• decrease in “rejected” or “returned” forms to PIs</td>
<td></td>
<td>Urgent care / ITS staff effort &amp; web-server</td>
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<tr>
<td>Listserv (or similar system) for exchanging ideas &amp; discussing administrative issues, for PIs and Admins</td>
<td>Urgent Care Facility, ITS, &amp; experienced admin staff</td>
<td>Improved clarity regarding administrative procedures and issues&lt;br&gt;<strong>Metrics:</strong>&lt;br&gt;• # new posts on listserv&lt;br&gt;• # responses to new listserv posts&lt;br&gt;• # listserv users</td>
<td>Improved clarity regarding administrative tasks&lt;br&gt;• Faculty satisfaction as measured by surveys</td>
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<td>Urgent care / ITS staff effort &amp; server</td>
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<td>Regular training for Fiscal Administrators, Research Administrators, Program Administrators, and Junior PIs on grant administration</td>
<td>Urgent Care Facility &amp; ORS &amp; ORC, OTTED, Export Controls, RCUH, FMO</td>
<td>Improved training on administrative procedures</td>
<td>Improved efficiency in processing administrative tasks &amp; reduced administrative burden for PIs</td>
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<td>Urgent care facility staff / ORS staff effort / RCUH/ORC &amp; OTTED, Export Controls and FMO</td>
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<td>Metrics:</td>
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<td>• # training sessions offered</td>
<td>• Faculty satisfaction as measured by surveys</td>
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<td>• # attendees</td>
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<td>• # subjects/topics offered</td>
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<tr>
<td>Business improvement committee (related to grants administration)</td>
<td>OVCR; OVCAFO; OVPRI (ORS, ORC, OTTED, Export Controls); RCUH</td>
<td>Simplification &amp; standardization of common administrative tasks</td>
<td>Reduced administrative burden for PIs</td>
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<td>Faculty, upper admin, ORS, ORC, Export Controls, OTTED, RCUH and FMO</td>
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<td>• Faculty satisfaction as measured by surveys</td>
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<td>• time reduction in common administrative tasks</td>
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Two potential “bold action” items were discussed by the subcommittee:
Change culture of “risk aversion” amongst administrators to encourage an innovative yet compliant approach by providing continuing education and training. Increasing the knowledge base of administrators will promote “problem solving” in facilitating research. (rationale: risk aversion commonly results in unnecessary paperwork and thus increases administrative burden to PIs)

Have State Auditors review “administrative efficiency” in addition to “compliance.” (rationale: this would mirror a recent change in Federal Audits)
IMPROVE USE AND SUPPORT OF CORE RESEARCH FACILITIES
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<td>Gather data about core research facilities</td>
<td>Core Facilities Subgroup</td>
<td>Comprehensive inventory of core facilities services</td>
<td>Improved core facilities infrastructure</td>
<td>Improvements in research productivity</td>
<td>OVCR, OVPRI Research infrastructure grants</td>
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<td>Consolidation of services, less duplication of resources</td>
<td>Improved business models in place</td>
<td>Enhanced recruitment of new faculty</td>
<td>College RTRF Fee for service revenue</td>
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<td>Sustainable funding</td>
<td>Better support of young faculty</td>
<td>Subscription/license fees</td>
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<td>Modern, more efficient cores</td>
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<td>Sustainable models of core support</td>
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<td>Engage campus stakeholders in discussion of best practices</td>
<td>Core facilities directors, OVCR</td>
<td>Identification of best practices and duplication of effort</td>
<td>Improved communication across cores, leveraged resource sharing</td>
<td>Improvements to services and support</td>
<td>Core Directors Access to training venues</td>
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<td></td>
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<td>Improved business models</td>
<td>Network of core expertise professionals</td>
<td>Increase in research skills from training opportunities</td>
<td>Administrative support</td>
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<td>Strategic grant support</td>
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<td>Strategic leveraging of investments and human resources</td>
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<td>Increase in training opportunities</td>
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<td>Improved sustainability models</td>
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<td>Create a clearinghouse for research core facilities</td>
<td>ITS-CI, OVCR</td>
<td>Online searchable information resource for campus core facilities</td>
<td>Strategic planning linked to data</td>
<td>Increase in research productivity</td>
<td>OVCR, OVPRI, ITS-CI</td>
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<td>Improved access to campus resources</td>
<td>Easy identification of campus needs</td>
<td>Easy access to resources and services</td>
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Cores and Infrastructure Grants

The John A. Burns School of Medicine is committed to the support and enhancement of crucial cores to encourage research. The preeminent goal of a core is to provide excellent service to a growing cadre of investigators from an enlarging circle of departments and institutions. Cores aim to maintain growth and enhance sustainability of core services. Most cores have three primary goals: service, teaching, and creation of new knowledge. Each core provides access to the latest techniques required by investigators to support hypothesis-driven research. Cores develop and implement training and education workshops. Cores also develop innovative and improved techniques, new technologies or applications of expertise in its field. By centralizing services and resources within cores, researchers are more efficiently served and the use of equipment is maximized. Through the triad of service, education, and
ENABLE AND SUPPORT STUDENT RESEARCH
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<tr>
<td>1. Provide more opportunities for undergraduates to do mentored research</td>
<td>OVCR</td>
<td>Increased number of undergraduates doing research &lt;br&gt;<strong>Metrics:</strong>&lt;br&gt;• # undergrad honors theses, other theses, and undergraduate research experiences&lt;br&gt;• # awards and amount of funding for undergraduate research&lt;br&gt;• NSF REU funding level&lt;br&gt;• # undergraduate student publications&lt;br&gt;• #undergraduate student presentations</td>
<td>Doubled number of undergraduates doing research &lt;br&gt;<strong>Metrics:</strong>&lt;br&gt;• Increased UROP funding&lt;br&gt;• NSF REU site program</td>
<td>• Improved undergraduate educational experience, via an enhanced research culture&lt;br&gt;• Improved student retention</td>
<td>• New mechanisms to measure undergraduate research involvement across campus, including at departmental level&lt;br&gt;• Creation of a Center for Undergraduate Research</td>
</tr>
<tr>
<td>2. Identify existing programs for undergraduate and graduate student research</td>
<td>OVCR</td>
<td>List of programs, projects, faculty currently providing student research opportunities</td>
<td>An increase in existing undergraduate and graduate research opportunities</td>
<td>• Improved awareness of existing opportunities&lt;br&gt;• New collaborations across faculty</td>
<td>• Creation of a Center for Undergraduate Research&lt;br&gt;• Engagement with OGE&lt;br&gt;• Campus-wide survey</td>
</tr>
<tr>
<td>3. Identify and eliminate challenges associated with undergraduate and graduate student research</td>
<td>OVCR</td>
<td>List of barriers and impediments to undergraduate and/or graduate student research</td>
<td>Elimination of barriers and impediments</td>
<td>Create a research-friendly culture by facilitating the undergraduate and graduate student research experience</td>
<td>• Student survey&lt;br&gt;• Faculty survey&lt;br&gt;• Program survey&lt;br&gt;• Creation of a Center for Undergraduate Research&lt;br&gt;• Engagement with OGE</td>
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<tr>
<td>4. Encourage &amp; facilitate programs to have an undergraduate research requirement</td>
<td>OVCR, OVCAA</td>
<td>List of programs with an undergrad research requirement</td>
<td>Increase in programs with undergrad research requirement</td>
<td>Improved undergraduate educational experience, via an enhanced research culture.</td>
<td>Creation of a Center for Undergraduate Research</td>
</tr>
<tr>
<td>5. Publicize undergraduate and graduate student research opportunities</td>
<td>OVCR</td>
<td>Increased awareness of undergraduate and graduate student research opportunities</td>
<td>All undergraduate and graduate students have ready access to list of active research opportunities across campus</td>
<td>Students at UHM understand and take advantage of research opportunities for more fully-rounded educational experience</td>
<td>• Creation of a Center for Undergraduate Research • UH announcements (e.g., Ka Leo; The Manoa Graduate, etc.)</td>
</tr>
<tr>
<td>6. Continue GA tuition waivers</td>
<td>OVCR; OVCAA; UHM Chancellor’s Office</td>
<td>GA tuition waivers still available • Increased number of GAs</td>
<td>GA tuition waivers still available</td>
<td>Facilitation of graduate research</td>
<td>Engagement with OGE</td>
</tr>
<tr>
<td>7. Credit faculty for mentoring undergraduate research</td>
<td>OVCR; OVCAA</td>
<td>Formalized faculty credit for mentoring undergrad research to increase number of faculty mentoring undergrad research;</td>
<td>Double the number of faculty mentoring undergraduate research.</td>
<td>Increase in faculty and student research and scholarship</td>
<td>• Teaching credit for mentoring research • Course release for mentoring student research • UHPA involvement • TPRC guidelines</td>
</tr>
<tr>
<td>8. Communicate the value of research to undergraduates</td>
<td>OVCR</td>
<td>Increase in number of undergraduate students aware of value of research experience</td>
<td>All undergraduate students aware of value of incorporating research in education</td>
<td>Increase in awareness of value of research in an undergraduate degree</td>
<td>Creation of a Center for Undergraduate Research</td>
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Hawaiian Place of Learning: Alignment with Strategic Planning Committee Engaged Scholarship Working Group

As part of the Achieving Our Destiny Strategic Planning Committee, a working group on Engaged Scholarship recommended in Spring 2013 targeted research support for Native Hawaiian Community Engaged Scholarship. The requested funds (initial commitment of $100,000 annually to be divided between student and faculty support) were to be used to support:

1. Native Hawaiian student or faculty members in any academic field whose work intends to advance Native Hawaiian communities; and
2. any student or faculty member participating in Native Hawaiian community-engaged scholarship. The RAC recommends that the student portion of this 2013 initiative be revitalized and funded consistent with the research strategic goal to ‘Enable and Support Student Research’ as it would directly support many of the proposed activities.

Center for Undergraduate Research (CUR)

Many of the recommendations are aligned with the creation of a Center for Undergraduate Research (CUR) at UHM. The UHM-CUR would:

1. house the Undergraduate Research Opportunity (UROP) program on campus;
2. be a clearinghouse of information for undergraduate research opportunities across campus, primarily via a publically accessible CUR website, but also through workshops and other events;
3. support an undergraduate journal devoted to publishing undergraduate research;
4. coordinate undergraduate research presentations across programs on campus; and
5. support faculty grant applications for and administration of NSF-Research Experiences for Undergraduates (REU) programs focused on funding undergraduate research on campus. The CUR would coordinate with PIs to create research foci, facilitate the submission of NSF-REU grant proposals, and help with the overall administration of funded programs. We envision a minimum of three additional NSF-REU site programs across campus accommodating ~150–200 students annually. In addition, the CUR would be a valuable resource for any PI asking for NSF-REU supplemental funding for funded NSF research proposals.
UNDERSTAND – AND COMMUNICATE – THE IMPACT OF RESEARCH
<table>
<thead>
<tr>
<th>Activities</th>
<th>Short Term (2 year)</th>
<th>Long Term (5 year)</th>
<th>Impact</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and network communications personnel and capacity</td>
<td>Comprehensive map of communications networkDefined network of communicators</td>
<td>Highly visible network of communications professionalsStrategic hiring to build or replace communications personnel (social media)</td>
<td>Improved coordinationIncreased efficiency (reduced redundancy)Identify resource needs</td>
<td>OVCR, OVPRI Buy in from all unit heads</td>
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<td>Define best practices for identified audiences and media types</td>
<td>Network developed best practices, and standard operating procedures, tailored to be meaningful to diverse audiences (local and national media, legislators, social media users)</td>
<td>State, nationally and internationally recognized model for communicating impact of research and training</td>
<td>Streamline and increased use of communications servicesStimulate funding (develop capacity for broader impacts)</td>
<td>Increased resource allocation G-funded positon(s), RTRFProject management capacity, meeting spaces</td>
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</table>
| Interact research and training activities with communications capacity      | Dedicated, dynamic website for communication. Platform showcasing outreach activities, library of best practices, SOPs contacts and tools. Increased use of the communications resources  
# website hits – within UH system  
# direct contacts  
# outreach products  
# tools used | Increase diversity and number of communication products generated  
Increase in  
# audiences targeted  
# website hits from state, national and international sources  
# outside media queries for experts commentaries on findings of others or outreach participation | Increased visibility and transparency  
Increased awareness of the importance, variety and value of UH research and training to the state, nation and world  
Increased attractiveness and competitiveness | OVCR, OVPRI. ITS, all unitsAdministrative support  
IT budget, dedicated webmaster and communication network coordinatorBuy in from deans and directors |
<table>
<thead>
<tr>
<th>Activities</th>
<th>Short Term (2 year) Measurable Outcomes</th>
<th>Long Term (5 year) Measurable Outcomes</th>
<th>Impact</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlight Hawai‘i’s unique research themes, training frameworks and facilities</td>
<td>Coordinated communications activities</td>
<td>Thematic outreach campaigns, built to be multidisciplinary and dynamic, reflecting new knowledge or new cohort activities over time</td>
<td>Evidence of cross disciplinary interaction. A showcase for our collaborative and modern university environment</td>
<td>Project manager/thematic coordinator</td>
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<tr>
<td></td>
<td># teams assembled and coordinated</td>
<td># themes</td>
<td>Stimilation of programmatic scale funding</td>
<td>Strategic planning</td>
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<tr>
<td></td>
<td># products generated</td>
<td># users and viewers</td>
<td></td>
<td>Administrative buy in</td>
</tr>
<tr>
<td></td>
<td># Diversity of players (people, units)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># views and mentions</td>
<td></td>
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<tr>
<td>Communications and outreach training</td>
<td>Regular training workshops – how to message, different mechanisms for distribution, tuning to audience (local and national media, legislators, social media etc.)</td>
<td>Outreach as an expectation, as the norm for all. State, nationally and internationally recognized for research and training – higher position on comparative indices</td>
<td>Work force development, new skills training</td>
<td>OVCR, OVPRI. College RTRF</td>
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<tr>
<td></td>
<td># participants</td>
<td></td>
<td></td>
<td>Meeting rooms</td>
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<tr>
<td></td>
<td># frequency of workshops</td>
<td></td>
<td></td>
<td>Budget for trainers</td>
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<tr>
<td></td>
<td># outreach products generated</td>
<td></td>
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<td>Interact and capitalize on unique off-campus resources as venues for outreach</td>
<td>Capacity interacted with appropriate units (e.g., Waikiki aquarium with HIMB, Kewalo Marine Lab and the undergrad and grad marine biology students researchers)</td>
<td>Generating and maintaining exhibits as part of student training Dynamic exhibits and lecture series showcasing cutting edge knowledge Engaged local community, larger volunteer network</td>
<td>State, national and international recognition for unique research, training and physical capacity. Increased buy-in and resourcing</td>
<td>OVCR, OVPRI. College RTRF</td>
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<td># exhibits showcasing UH research</td>
<td></td>
<td></td>
<td>Budget</td>
</tr>
<tr>
<td></td>
<td># visitors</td>
<td></td>
<td></td>
<td>Buy in from unit heads and unit personnel</td>
</tr>
<tr>
<td></td>
<td># of media mentions</td>
<td></td>
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THE BIG ISSUES

➢ Comprehensive review of the Organized Research Units
  • new ORUs?
  • re-organized ORUs?
  • new models?

➢ Expectations for Research Faculty, including teaching

➢ Strategic hiring, including across Organized Research Units and Academic Units
Next Steps

- Early Fall – socialize recommendations more widely via website, faculty and staff surveys, and several Research Town Halls
- Finalize recommendations and action plans by December, 2016