

# SRI PEER REVIEW COMMITTEE

ASSESSMENT, CONCLUSIONS, AND RECOMMENDATIONS

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## **Process/Short Term Outcomes**

1. What investment did the CBCRP make in SRI?
2. How were the SRI initiatives identified? How were the SRI initiatives structured?
3. What types of projects were funded in the SRI?
4. Did SRI build on existing data but avoid duplicating funding strategies by other research funders?
5. Did SRI choose topics based on the most up-to-date knowledge and opinion of experts?

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**Process/Short Term Outcomes:**  
**1. What investment did the CBCRP make in SRI?**

Assessment	Conclusions
<ul style="list-style-type: none"> <li>Overall, the grants and distribution of funds were well-chosen and closely aligned with SRI objectives.</li> <li>Within disparities, the overall percentages of applicants and funded grants were good, although immigrant topic area had challenges generating fundable proposals.</li> <li>For environment, the topics were well-received and allowing applicants to revise proposals based on reviewer comments strengthened the research.</li> <li>"The topics are tough...they're really tough areas of breast cancer epidemiology in terms of how to directly measure exposures to environmental chemicals and then studying disparities". Compared to the time that the awards were made, "the initiatives were very well structured for that time"</li> </ul>	<ul style="list-style-type: none"> <li>Overall, CBCRP made an impressive commitment to SRI with well-chosen topics and initiatives.</li> <li>The SRI topics chosen and initiatives funded were relevant and ambitious.</li> </ul>
Questions	Responses
<ul style="list-style-type: none"> <li>Were the number of applications as expected?</li> <li>How did the word get out?</li> <li>What was the context?</li> </ul>	<ul style="list-style-type: none"> <li>CBCRP didn't know what to expect since it hadn't been done before, but not surprised to find low numbers since questions were narrow, and investigators were asked to do a lot with little.</li> <li>CBCRP sent announcements to C&amp;G offices across the state, previous recipients, and mailing list. Steering committee also distributed to investigators who they felt would be suitable.</li> </ul>

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**Process/Short Term Outcomes:**  
**2. How were the SRI initiatives identified? How were the SRI initiatives structured?**

Assessment	Conclusions
<ul style="list-style-type: none"> <li>The formal 5-phase approach worked well.</li> <li>Many of the identified gaps are still important today.</li> </ul>	<ul style="list-style-type: none"> <li>SRI initiatives were identified using a process that involved leadership, literature review, and stakeholders.</li> <li>SRI initiatives included disparities, environment and a combined category.</li> </ul>
Questions	Responses
<ul style="list-style-type: none"> <li>More information on how the science advisors and stakeholders were selected and engaged</li> <li>More information on the regional meetings</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders, Regional Meetings: Please see <i>SRI Flyer</i>, <i>SRI Meeting Summary</i> documents (Google Drive folder)</li> <li>The science advisors were selected in 2 ways:             <ul style="list-style-type: none"> <li>Steering committee was selected by CBCRP staff based on interviews with key informants (Google Drive folder) and by a snowball method if an initial invitation was refused.</li> <li>Steering Committee then brainstormed a list of possible advisors and together created a prioritized list of invitees.</li> </ul> </li> </ul>

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**Process/Short Term Outcomes:**

**3. What types of projects were funded in the SRI?**

Assessment	Conclusions
<ul style="list-style-type: none"><li>• SRI funded a lot of the gaps in the large document, leading the way in this kind of research.</li><li>• There was a need to find a way to fund disparities research since not many institutions did at the time.</li></ul>	<ul style="list-style-type: none"><li>• SRI projects were well-described and fit within the initiatives.</li></ul>

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**Process/Short Term Outcomes:**

**4. Did SRI build on existing data but avoid duplicating funding strategies by other research funders?**

Assessment	Conclusions
<ul style="list-style-type: none"><li>• While the question is challenging to conceptualize since there is no counter-factual, the data make a good case.</li><li>• There were definite increases in disparities and environment research projects which is positive since this is an understudied area.</li><li>• California research is probably not as likely to be funded by NCI.</li></ul>	<ul style="list-style-type: none"><li>• Challenging question to answer since we do not know if these projects would have been picked up by other funders.</li><li>• The future funding from the SRI investigators indicates some challenges in receiving more funding.</li></ul>

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**Process/Short Term Outcomes:**

**5. Did SRI choose topics based on the most up-to-date knowledge and opinion of experts?**

Assessment	Conclusions
<ul style="list-style-type: none"><li>• SRI was successful in moving people into breast cancer research.</li><li>• SRI encouraged research on both disparities and environment.</li></ul>	<ul style="list-style-type: none"><li>• The identified topics were important and under-studied.</li></ul>

Questions	Responses
<ul style="list-style-type: none"><li>• Was there dedicated support after the SRI?</li><li>• Were researchers more competitive after the SRI?</li></ul>	<ul style="list-style-type: none"><li>• There was no dedicated support, but some projects applied and were funded in the next round of initiatives.</li></ul>

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**Medium Term Outcomes**

1. Were the goals of each initiative met? Did the grants within these initiatives meet their goals?
2. Do the research findings from the SRI grants lead to increased knowledge to reduce the burden of breast cancer?
3. Do the research findings from the SRI grants lead to increased opportunities to move these fields forward in research and/or advocacy?
4. How did the structure of SRI impact the research initiated within each initiative?
5. How did the SRI funded grants leverage California's unique and diverse, geography, demographics, and research resources?

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**Medium Term Outcomes:**

**1. Were the goals of each initiative met? Did the grants within these initiatives meet their goals?**

Assessment	Conclusions
<ul style="list-style-type: none"><li>• All 9 initiatives have publications, although two projects did not.</li><li>• This questions is difficult to address because there are no reviews of continuation applications.</li></ul>	<ul style="list-style-type: none"><li>• The initiatives met their goals.</li></ul>

Questions	Responses
<ul style="list-style-type: none"><li>• Is there a final report from each project? Were any of the grants continued?</li></ul>	<ul style="list-style-type: none"><li>• Yes, final reports from each project are available on the website. Scroll down to the links under "Special Research Initiatives": <a href="http://cbcrp.org_206-217-207-112_preview.sknet20.cloudgppnetwork.com/research/byAwardtype.asp">http://cbcrp.org_206-217-207-112_preview.sknet20.cloudgppnetwork.com/research/byAwardtype.asp</a>.</li><li>• There was no dedicated support, but some projects applied and were funded in the next round of initiatives.</li></ul>

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**Medium Term Outcomes:**

**2. Do the research findings from the SRI grants lead to increased knowledge to reduce the burden of breast cancer?**

Assessment	Conclusions
<ul style="list-style-type: none"><li>• While Breast Cancer Survivorship Consortium publications seem low given the amount of funding, there were challenges.</li></ul>	<ul style="list-style-type: none"><li>• The initiatives clearly contributed to increased knowledge on the specific topics and breast cancer more generally.</li></ul>

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**Medium Term Outcomes:**

**3. Do the research findings from the SRI grants lead to increased opportunities to move these fields forward in research and/or advocacy?**

Assessment	Conclusions
	<ul style="list-style-type: none"><li>• The SRI grants led to increased opportunities, particularly in research.</li><li>• More information is needed to address the advocacy portion of the question.</li></ul>

Questions	Responses
<ul style="list-style-type: none"><li>• Were the findings reported back to communities and individual participants? If so, how?</li><li>• Has there been documentation or numeric capture of using the findings in policy?</li></ul>	<ul style="list-style-type: none"><li>• Yes, mechanisms for communication with communities varied for each project.</li><li>• Several of the presentations were given to state policy makers, and the CBCRP director gave testimony that was cited/incorporated into two reports (see slide 63 of this slide deck). CBCRP is not currently aware of any studies being cited in legislation.</li></ul>

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**Medium Term Outcomes:**

**4. How did the structure of SRI impact the research initiated within each initiative?**

Assessment	Conclusions
<ul style="list-style-type: none"><li>• The three funding mechanisms drove grant applications and types.</li><li>• The directed funding for disparities and the environment made an impact.</li></ul>	<ul style="list-style-type: none"><li>• By developing strong initiatives, CBCRP drove research to the Environment and Disparities topic areas.</li><li>• There was a clear increase in funding over time with the start of the SRI.</li></ul>

Questions	Responses
<ul style="list-style-type: none"><li>• What proportion goes to each funding mechanism?</li><li>• When did the SRI funding end?</li></ul>	<ul style="list-style-type: none"><li>• SRI funding by mechanism (Cycles 15-17):<ul style="list-style-type: none"><li>• SRI Request for Proposal (RFP)=\$6,652,328 (30%)</li><li>• SRI Program Directed Awards=\$12,662,595 (58%)</li><li>• SRI Request for Qualifications (RFQ)=\$2,646,242 (12%)</li></ul></li><li>• See slides 27-28 of this slide deck.</li></ul>

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## Medium Term Outcomes:

### 5. How did the SRI funded grants leverage California's unique and diverse, geography, demographics, and research resources?

Assessment	Conclusions
<ul style="list-style-type: none"> <li>It is clear that the SRI took advantage of opportunities in California enabling robust research protocols and collaborations.</li> <li>For the race/ethnicity categorizations, it is possible that one study is driving lack of Latinos in the distribution.</li> </ul>	<ul style="list-style-type: none"> <li>SRI funded grants clearly built on CA-based research resources as well as demographics.</li> <li>California's diversity provided a broad range of resources collaboration opportunities which was evident in the distribution of grants to various institutions across the state and the high number of publications that resulted.</li> </ul>

Questions	Responses
<ul style="list-style-type: none"> <li>Was the sharing of data sets, registries or labs across institutions easier to accomplish with these types of grants?</li> <li>How many participants did each study contribute to the whole distribution?</li> <li>Did SRI partner with HBCUs or other minority-serving organizations?</li> </ul>	<ul style="list-style-type: none"> <li>Sharing these types of resources was easier because it was a requirement of the grant.</li> <li>State of CA has only 1 HBCU and 133 minority serving institutions today (unclear if it was similar during the SRI planning phase). CBCRP has started to consider future partnerships.</li> </ul>

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## Long Term Outcomes

### Research

- Did the research produced as a result of the SRI stimulate the field of breast cancer research?
- Did the research produced as a result of SRI stimulate breast cancer research in the areas of environment, disparities, and/or disparities and environment?
- Was the research produced innovative and/or theory generating?
- Did SRI reach its overarching goal?

### Researchers

- How did the research portfolio change for the researchers who received a SRI grant?
- Did SRI serve as a pipeline for new investigators interested in these areas?

### CBCRP

- Have we created value by pursuing SRI targeted funding rather than sticking to only investigator-initiated awards?
- Have we funded research that would not have happened otherwise?
- How did the SRI influence:
  - CBCRP research portfolio?
  - CBCRP funding priorities?

### Broad Impact

- Who benefitted from the research produced by SRI funded grants?

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### Long Term Outcomes: Research

2. Did the research produced as a result of the SRI stimulate the field of breast cancer research?

Assessment	Conclusions
<ul style="list-style-type: none"> <li>Yes, due to the comprehensive review CBCRP undertook to identify research gaps breast cancer research was stimulated, specifically in the topics of disparities and the environment.</li> </ul>	<ul style="list-style-type: none"> <li>Research was funded in areas previously overlooked or newly emerging such as linking environmental factors and disparities as causes of breast cancer.</li> <li>SRI projects impacted policy and brought new awareness to the science that informs public health and policies relating to the environment.</li> </ul>

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### Long Term Outcomes: Research

3. Did the research produced as a result of SRI stimulate breast cancer research in the areas of environment, disparities, and/or both?

Assessment	Conclusions
<ul style="list-style-type: none"> <li>Yes, the stimulation is clear when looking at how the funded PI's reported growth in grants focused environment and disparities from 44% pre-SRI to 59% post SRI.</li> <li>Information on funding opportunities outside of CBCRP on disparities, environment or both could be helpful to address if SRI stimulate research in these areas long term.</li> </ul>	<ul style="list-style-type: none"> <li>The SRI stimulated growth and the momentum has been sustained.</li> <li>The impressive increase in the research portfolios of the researchers will continue to generate valuable findings for these topics.</li> </ul>

  

Questions	Responses
<ul style="list-style-type: none"> <li>For the researcher expansion into other areas, was that the topic area (new expansion into topics) or the publications associated with it or a little of both?</li> <li>Are there other agencies that have followed the same suit and funded the same areas?</li> </ul>	<ul style="list-style-type: none"> <li>A lot of these funded researchers were already in the field it was just a matter of being able to tackle other questions within environment and disparities that allowed their portfolios to expand.</li> <li>For other funding agencies:             <ul style="list-style-type: none"> <li>Komen started a health equity initiative to reduce breast cancer death rates among African-American women in late 2016, but this was investigator-initiated.</li> <li>NIEHS+NCI funded the Breast Cancer and the Environment Centers Program from 2003-2010 for a total of \$35M; this was initially one multi-center, multi-component transdisciplinary effort and later calls were open to more scientists.</li> </ul> </li> </ul>

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## Long Term Outcomes: Research

### 4. Was the research produced innovative and/or theory generating?

Assessment	Conclusions
<ul style="list-style-type: none"><li>• The 74 current publications and 1495 citations as of June 2021 is compelling.</li><li>• There was an exponential growth in the citation index.</li><li>• There were a number of high impact journals on the publications list.</li></ul>	<ul style="list-style-type: none"><li>• The research produced was innovative, theory-generating, and timeless.</li><li>• The collaboration requirement was key to providing an environment that produced innovative methods and novel ideas.</li><li>• With the citations growing in recent years, the information is still relevant and contributing to other research initiatives.</li></ul>

Questions	Responses
<ul style="list-style-type: none"><li>• How recent are some of the citations? Are they in the last year?</li><li>• What are the top 2 or 3 cited papers?</li></ul>	<ul style="list-style-type: none"><li>• Please see slide 11 in the updated slide deck for meeting #2 (in the Attachments folder on the Google Drive).</li><li>• Many of these are seminal projects and publications that I've referred my students to and cited, and many are in high impact journals (per Lexie).</li><li>• Two parts of the portfolio to highlight that have prominence: collection of nice papers on genetics in African Americans and a nice portfolio on the intersection of SES-race-location (per Melissa).</li></ul>

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## Long Term Outcomes: Research

### 1. Did SRI reach its overarching goal?

Assessment	Conclusions
<ul style="list-style-type: none"><li>• Yes, the goals and vision of the SRI program were met.</li><li>• The researchers involved continue to be funded in the three topic areas and are receiving funding from new outlets as well.</li><li>• Both the Survivorship consortia and the three-generation study helped provide either fundamental knowledge on a new topic and/or published something that would be worthy of citing multiple times over time.</li></ul>	<ul style="list-style-type: none"><li>• The SRI reached its overarching goals as demonstrated by the depth and breadth of the contributions cited.</li><li>• The publications and citations show that the material is timeless and still relevant years later.</li><li>• SRI funded projects continue to impact the scientific and diverse communities.</li><li>• SRI nurtured and moved research and researchers in the direction of the topic areas.</li></ul>

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### Long Term Outcomes: Researchers

7. How did the research portfolio change for the researchers who received a SRI grant?

Assessment	Conclusions
<ul style="list-style-type: none"><li>• Post-SRI seems to reflect substantial increases in both environment and disparities funding for SRI investigators.</li></ul>	<ul style="list-style-type: none"><li>• SRI resulted in a substantial increase in funding from a diverse array of breast cancer-specific funding sources.</li><li>• SRI increased funding portfolio in the research areas of environment, and disparity plus environment.</li></ul>

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### Long Term Outcomes: Researchers

10. Did SRI serve as a pipeline for new investigators interested in these areas?

Assessment	Conclusions
<ul style="list-style-type: none"><li>• Three out of four graduate students and six out of seven post docs and junior faculty continued in the area of their SRI-funded research.</li><li>• SRI investigators identified SRI funding as a key source for their funding in breast cancer prevention that wasn't being addressed by other sources.</li></ul>	<ul style="list-style-type: none"><li>• The proportion of SRI investigators progressing in the same line of research is impressive.</li><li>• The contribution of SRI funding to fill funding gaps underscores the significance of the SRI.</li><li>• SRI served as a pipeline for new investigators to move into the areas of environmental research and health disparities.</li></ul>

Questions	Responses
<ul style="list-style-type: none"><li>• Who was a new investigator prior to funding? That is, out of the 26 projects, how many were new investigators or hadn't done research in these topics?</li><li>• Is there data on the students getting faculty positions or other research positions?</li></ul>	<ul style="list-style-type: none"><li>• These data were not collected.</li></ul>

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### Long Term Outcomes: CBCRP

5. Have we created value by pursuing SRI targeted funding rather than sticking to only investigator-initiated awards?

Assessment	Conclusions
<ul style="list-style-type: none"><li>• Yes, value was added by targeting the SRI according to PI feedback.</li></ul>	<ul style="list-style-type: none"><li>• The SRI targeted funding allowed work to happen which would not have otherwise.</li><li>• The SRI structure allowed for using targeted awards to get research in these topic areas funded.</li></ul>

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### Long Term Outcomes: CBCRP

6. Have we funded research that would not have happened otherwise?

Assessment	Conclusions
<ul style="list-style-type: none"><li>• It is challenging to answer whether other funders would have picked up these understudied and underfunded areas.</li><li>• It would be helpful to know what other funding mechanisms were happening at this time to help to clarify the contribution of the SRI in the overall funding climate.</li><li>• As the survey results indicated, several SRI investigators felt that their SRI research would not have happened without the SRI funding.</li></ul>	<ul style="list-style-type: none"><li>• SRI's efforts to identify key gaps in the literature was important.</li><li>• The continuity of SRI is unique which can be seen in the transitions to the next funding mechanisms.</li></ul>

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## Long Term Outcomes: CBCRP

### 8. How did the SRI influence: CBCRP research portfolio? CBCRP funding priorities?

Assessment	Conclusions
<ul style="list-style-type: none"> <li>The SRI may have increased the proportion of the funded projects in cancer control and prevention over time although the number of projects decreased.</li> </ul>	<ul style="list-style-type: none"> <li>SRI increased the proportion of funding going to prevention and causes of cancer/etiology research.</li> </ul>

Questions	Responses
<ul style="list-style-type: none"> <li>The stacked bar charts on slides 53 and 54 are challenging to interpret. Where do the environment and disparity projects fall? What is the denominator of each bar?</li> <li>Is it possible to pull out just the disparities and environment funding?</li> </ul>	<ul style="list-style-type: none"> <li>Please see slides 53 and 54 in the updated slide deck for meeting #2 (in the Attachments folder on the Google Drive)</li> <li>The categories are from the International Cancer Research Partners (ICRP) so it is not possible to recategorize.</li> </ul>

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## Long Term Outcomes: Broad Impact

### 9. Who benefitted from the research produced by SRI funded grants?

Assessment	Conclusions
<ul style="list-style-type: none"> <li>SRI benefited researchers, both newer researchers brought into the topic areas and established researchers who pursued new directions.</li> <li>SRI also benefited advocates, implementation, the larger scientific community, policy makers, and general consumers.</li> <li>The required advocate involvement and emphasis on communication was important.</li> <li>Advocates are usually tasked with disseminating the research information to the community. It would have been interesting to see in more detail how or whether that was achieved.</li> </ul>	<ul style="list-style-type: none"> <li>Junior investigators and those focused on environment and prevention were advantaged by the SRI.</li> <li>CBCRP was a leader in recognizing the value of the advocate role.</li> <li>The SRI help new investigators and graduate students moved into the two research areas of SRI and established investigators into new research directions.</li> <li>SRI promoted and trained advocate involvement in cancer research.</li> <li>SRI benefited the scientific communities with 74 publications which generated 1495 citations.</li> </ul>

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## Long Term Outcomes: Broad Impact

### 9. Who benefitted from the research produced by SRI funded grants?

Questions	Responses
<ul style="list-style-type: none"><li>• How did policy makers use the findings?</li><li>• How did the research findings reduce disparities, chemical exposures that cause breast cancer?</li></ul>	<ul style="list-style-type: none"><li>• Policy changes include: ARO-ER added to Tox-21 to screen chemicals for endocrine disruption; many pathways cited in Pathways to Breast Cancer considered for incorporation into chemicals screening (such as mammary developmental disruption); paradigm model used to illustrate the multi-factorial nature of breast cancer, estimate the potential effects of changes in risk factors, and inform the pay-off of prevention interventions; Demographics tool used to assess the characteristics of participants in training programs; Breast Cancer Mapping Project used by Tracking California (a joint state and federal effort).</li><li>• These data were not collected.</li></ul>

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# COMMITTEE RECOMMENDATIONS

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## Questions for the Committee

1. Does the targeted approach of the SRI yield the types of outcomes you would expect? What are the tradeoffs between the targeted approach of SRI and an investigator-initiated approach?
  - A targeted approach was clearly effective to address identified gaps and create synergy among the cohort of projects.
  - An investigator-initiated approach would not have produced such a diverse set of work
  - A targeted approach can encourage researchers to bring focus on one area and bring innovation and creativity to address the identified gap.
  - There is a need for a balance between targeted and investigator-initiated approaches to give a strategic handle and direction.

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## Questions for the Committee

2. Did the SRI nurture research in the field in a way that was sustainable?
  - Sustainable but with continuing attention and cultivation of this kind of work since there continues to be need in this area.
    - *Sustainable research demonstrated with researchers and post-docs continuing to work in this field post-SRI.*
    - *Sustainable funding demonstrated through CBCRP follow-on initiatives.*

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## Questions for the Committee

3. Should CBCRP consider using this approach in other topic areas within breast cancer research?

- Proven to be successful with strong data which makes it advisable to replicate.
- A comprehensive gaps identification may not be needed in the future or necessary for all topics, or there may be less labor-intensive ways to comb the literature and find gaps.

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## Questions for the Committee

4. How can CBCRP best measure impact that began with the SRI?

- Continue with citation counts over time to see the ongoing impact of SRI.
- Disseminate information from the initiative to the community.
- Gather more actionable feedback from advocates on dissemination into the community and the initiatives value to the community.
- Collect additional data on grad students/post-docs/junior faculty and co-investigators (e.g., total number trained, number of publications, subsequent employment, and funding) to better understand career trajectories and characterize success and drivers of success.
- Develop a framework for analyzing qualitative data.

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