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Person-Centered Awards Landscaping

Project Report

MBM
LEARNING & EVALUATION STRATEGIES

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Partnered Learning to Amplify Impact

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Executive Summary

This brief summary provides an overview of key points made in the Landscaping Project Report. The report summarizes results from a field exploration that investigated promising approaches to strengthen and evaluate the outcomes and impact of person-centered, or what some interviewees termed, individual support grants. These include fellowships, scholarships, awards and grants.[1] The Gordon and Betty Moore Foundation (the Foundation) commissioned the project to provide insights for program development, administration and evaluation of potential value to the Moore Foundation's programs and more broadly, to organizations that use grants to individuals to achieve grantmaking goals. The report describes a range of innovative or promising ideas and practices being used in the field, and investigates aspects of their implementation, based on interviews with some 20 peer organizations. Participating organizations were selected in consultation with the Foundation considering the size, depth and longevity of their experience with developing, operationalizing and evaluating individual support grants.

Moore Foundation staff involved with Person-Centered Award programs (PCAs) were also interviewed to better understand their interests in order to finetune the interview protocol and determine the kinds of practices they might consider promising, as well as identify other potential peer organizations. Peer organizations were then queried about four main areas: goals and programmatic activities, recruitment and selection practices, mechanisms for broadening and diversifying participation and means for demonstrating success and evaluating impact, particularly over the long term. These areas were each explored to describe and help understand the C*onditions for Success* of PCA programs and the conditions that emerged from this study are woven throughout the report and highlighted in this Executive Summary.

Program Goals, Design and the Grantee Experience

At the outset, the report examines the goals peer organizations in this study want to achieve with their PCAs, their theories of change, programmatic designs, and the activities that form the program experience for recipients. It notes the value of gaining and expressing clarity about the connection between goals and program activities. Gaining clarity on the purposes and goals of a program, developing a theory of change or influence and making sure it is translated into specific objectives and program activities are important *Conditions of Success*. Ensuring this alignment also informs measurement of results.

Most peers interviewed are not trying to directly solve a particular scientific, technical or social problem *now.* Rather, they described goals that create enabling conditions that foster solutions to intractable problems that require lengthy remedies and prepare solvers for the next generation of such problems. Importantly, each program was understood within a broader theory of change. Producing the new knowledge needed to address critical, long term, societal

[1] These terms and grantee, awardee and fellow are used interchangeably throughout.

challenges ultimately requires that the most promising contributors be identified, resourced and capacitated. All interviewees' theories of change focused to some extent on developing individual awardees as scientists emphasizing their productivity, influence and applicability. Many theories described activities that also advance the overall potential contribution as collaborative leaders enhancing impact through building and collaborating on teams or within coalitions across disciplines, sectors and domains. Several described a theory of change that included a focus on enhancing awardees as talent developers who could shape and prepare the field going forward to bring discoveries to scale sustainably. Promoting inclusion and equitable access to opportunity was typically a significant piece with expectations for awardees to contribute beyond scientific output, even serving as agents of institutional and broader societal change. Finally, all interviewees described activities that emphasized strengthening their own infrastructure's capacity to add value as intended and to adapt in light of experience, progress made and emerging needs.

Most interviewees described enduring and deep-rooted investments. There is widespread recognition among interviewees that PCA programs are a strategy for achieving goals that take a long time because investing in people through scholarships, awards, grants and fellowships as a means to achieve broader change is a long game. These programs are not short-term commitments given the infrastructure required, the amount of time it takes to brand program value and opportunities to ensure an effective fit between the applicant pool and program design, and the persistence required to accumulate a sufficient mass of research and capacity to impact the complex problems of interest. For most programs, this has meant staying the course for a considerable length of time and incorporating program evolution, or phased sequencing, into the design. Alternatively, if a funder's investment must be time-limited, this suggests delimiting goals at the start, defining achievable objectives and choosing activities that do not take more time than is available to show compelling results. Interviews indicate that a vital *Condition of Success* involves adjusting goals, expectations and change strategy to the amount of time available to achieve goals and then either staying the course or exiting responsibly in ways that will sustain the achievements.

Most interviewees also agree that creating enabling conditions for current and future problem solving, requires a combination of project support and strengthening participant skills, tools, networks and leadership; equipping participants to work in partnership and to cultivate future contributors; helping to build robust fields that cross-fertilize; and pulling for nimble, aligned, supportive, inclusive institutions.

Reflecting the long-term nature of creating enabling conditions to solve complex scientific, technical and social problems, most programs in the study are designed for early and/or mid-career scholars with lengthy careers ahead. Most interviewees also agree that creating enabling conditions for current and future problem solving, requires a combination of project support and strengthening participant skills, tools, networks and leadership; equipping participants to work in partnership and to cultivate future contributors; helping to build robust fields that cross-fertilize; and pulling for nimble, aligned, supportive, inclusive institutions.

Capacitating those who are, or will become, field leaders is a goal of almost all of the programs in this study and is often seen as a prerequisite for changing institutions and fields to be more equitable and impactful.

To accomplish this, programs in the sample all provide significant financial resources as part of the award package. In addition, programs accompany funding with a tailored grantee experience composed of developmental and project related investments and activities that engage grant recipients with each other during the initial period of the fellowship. Interviewees typically incorporate particular components relying on their theory of change, making a judgment that these activities will assist in achieving program goals. For example, if a theory of change indicates a need for strengthening the capacities of early-career individuals, more program activities will further their knowledge, ability to conduct the supported research project and professional capacities. If theory suggests the need for more mid-career field leaders to bring change to scale in institutions and fields, program components will support recruiting scientists positioned, or likely to be positioned, to make change as well as skills in mentoring, management and strategic communications. When goals imply a holistic approach is needed to solve big problems, peers often bring grantees together for cross disciplinary and/or cross sectoral fertilization. Program activities commonly include a range of touchpoints between the program officer and grantees, project development support, mentoring and introductions to mentors and/or potential backers, coaching and skill development. Convenings often concentrate on areas such as media/communications, fundraising, advocacy, policy, leadership, effective collaboration and other subject matter from outside a grantee's discipline.

Alumni communities and networks

Following the initial "active" period of the grant, almost all peers interviewed see alumni communities as a critical component of achieving the goals of their PCA programs. Through systematically constructing lifetime alumni networks and providing progressive developmental supports for members, they continue to invest in their PCA grantees. Interviewees described the benefits along a variety of dimensions, including, advancing discovery and creating conditions for innovation, improving the quality, quantity, dissemination and impact of research conducted during and after the initial grant, and planful field building to impact institutions and sustain impact over time. While not an intrinsic *Condition of Success*, as most PCA programs seek to promote large scale change over long periods of time, the *likelihood of success* appears significantly increased by extending most programs' reach and impact through adding an alumni community component.

Programming for alumni typically expands on the efforts to connect and capacitate awardees begun during the initial program period. Elements mentioned often include carefully planned convenings of the entire community and/or subsets. These are designed to both foster bonds and to achieve targeted purposes such as building the skills to navigate critical career points, brainstorming a promising line of work, designing a collaborative research- or policy-oriented effort, or working together on an article or book project. Seed grants for partnered projects are

commonly used to promote collaboration that advances particular thematic or problem-solving goals. Master classes and alumni-developed and led thematic working groups may be part of larger convenings or stand-alone. Additional activities for alumni focus on networking with field and policy experts and mentors from outside their usual orbits. Peer organization communications activities are often used to strengthen the reach and impact of individual and collective alumni work. Online community activities encourage alumni grantees to inform and support members and e-newsletters promote opportunities and engage alumni with each other's work.

Outreach, Recruitment and Selection

Outreach, recruitment and selection processes secure the talented grantees that underpin a PCA program's ability to achieve its goals and are critical to a program's success. A valuable initial step is to determine the characteristics of grantees who will be most likely to benefit from the PCA program that has been designed. This often includes defining, in common and observable terms, what is meant by language such as excellence, curiosity, creativity, or leadership potential. It is then important to align and systematically apply outreach, recruitment and selection criteria and implement processes to achieve the desired outcomes. Getting this package of inputs right forms an important *Condition of Success* for PCA programs and is informed by a sound Theory of Change. A few topics emerged as critical choice points in interviews: how peers are thinking about whether to privilege people or product/project in selection; the key characteristics, including diversity, they are looking for in applicants or nominees; and some of the promising selection processes and tools used to elicit applications, select awardees with relevant characteristics and compose a cohort that will journey, learn and collaborate effectively together.

There is agreement around the desirability of a core set of awardee attributes among many PCAs in this study. Most peers are selecting for high levels of intelligence, leadership potential, moral compass, ambition and motivation to improve societies. Also valued are track record, original or innovative aspects of the project proposed, collaborative spirit, novel thinking, creativity and curiosity. While usual indications of readiness for a fellowship or award (such as educational attainment, career accomplishment and research output) are significant criteria, a candidate's more intangible qualities are often deemed vitally important to achieve the goals of the PCA Programs in this study. While offering a range of strategies for identifying these characteristics, recruiting and selecting for the intangible qualities is seen as the knottiest recruitment and selection *challenge*.

Broadening participation

Interest was high among interviewees in achieving greater diversity, equity and inclusion (DEI) in applicant pools and among awardees. The benefits expected from incorporating diverse populations in PCA grantmaking go well beyond the desire to support candidates disadvantaged by birth or society. Interviewees pointed to practices that expand access to opportunities to attain the experiences and resources needed to excel and thereby also contribute to a more

equitable society. Peers were clear in their expectation that the quality, comprehensiveness and applicability of new knowledge production and scientific discovery would benefit significantly from increased participation by women and underrepresented minorities, international researchers, participants from other disciplines and new institutional players. Most peers indicated that science and research are best, and benefit society most, when done by a diverse team. They consider diversity in fields, labs and among their awardees to be at the core of scientific and research excellence, citing multiple reasons. For example**,** individuals' unique histories shape their research interests, questions and approaches. As a result, people from diverse backgrounds and experiences will be interested in different problems, ask new kinds of research questions, bring new frames and pursue new directions. Awardees arrive with different skillsets, toolkits and networks. Interacting with a diverse set of grantees can broaden their supportive and informative relationships. Given the potential to foster innovative solutions to problems, incorporating diversity into PCA programs is viewed as an important *Condition of Success.*

Most peers indicated that science and research are best, and benefit society most, when done by a diverse team.

The landscaping report delves into interviewees' strategies for incorporating diversity in their applicant pools and awardee cohorts. These include, expanding and targeting outreach and recruitment to attract diverse applicants, amending application and selection processes to reduce barriers for diverse applicants and biases among selection panels, rethinking elements of program design to reduce structural impediments and developing dedicated programs intended to increase the numbers of high quality, successful, participants from underrepresented groups in a field. Despite operationalizing their strategies through multiple specific tactics and changes, interviews indicate reducing barriers and diversifying pools and cohorts remains one of the most *challenging* aspects of PCA program design and implementation.

Infrastructure and Evaluation

A central aspect of this report focuses on interviewee input concerning enabling conditions, structures, practices and tools that facilitate informative outcome and impact evaluation and quality program implementation and improvement. Interviewees see the process of reflecting, evaluating and understanding the extent to which outcome and impact goals are being achieved as an important *Condition of Success.* Strong organizational infrastructure, learning processes and the application of the knowledge gained through those processes have direct implications for improving program design and operations and for demonstrating the program's value necessary for the long term viability typically required to achieve PCA program goals.

As interviewees discussed how they were evaluating their PCAs and what they were learning in the process, a set of enabling conditions and structures emerged that seemed to consistently underpin successful tracking of grantees and obtaining quality evaluative evidence of intermediate and long term outcomes and impacts. Creating and implementing a feasible evaluation plan and establishing and practicing a culture of reflection, learning and evaluation

for staff and grantees, is fundamental. Establishing clear goals, well aligned with program design, provides a benchmark for measuring progress while robust alumni communities enable tracking and encourage grantee engagement. Making sure that staffing is adequate to the size of the program and incentivizing long term staff commitment in order to facilitate strong relationships between programs and grantees, supports grantee responsiveness to assessment requests. Developing appropriate infrastructure and processes to deliver activities and enable reflection, stock taking, learning and improvement, including consistent data capture and management processes, are key. Interviews indicate this means, it is also important to consider how best to organize, house and staff the program and its evaluation efforts. These enabling conditions all lay the groundwork for capturing and understanding the impact of a program and are themselves C*onditions of Success*.

Many interviewees described the usefulness and importance of establishing supportive infrastructure to augment the funder's capacity, experience and knowledge development, amplifying the impact of individual program officers and the capacities of individual organizations such as external hubs that serve as centers for fellow activity and program resources. As part of this infrastructure, communities of practice that bring staff together across programs within a single foundation or administering partner, across foundations that work in similar areas or across institutions that partner in a program, were identified as especially important. While not a necessary *Condition of Success*, learning from and with similar programs makes a substantial contribution to the *likelihood of success* for an individual PCA program. Siloed programs and organizations that promote a culture of "every boat on its own bottom" miss the opportunity for the cross learning and economies of scale that can make programs, and the organizations that house them, more robust, effective and efficient.

Evaluation practices and tools

Almost all peer organizations interviewed engage in tracking awardees and trying to assess the short and intermediate term impacts of their programs on grantees' productivity, influence and advancement. Many also seek to understand their grantees' impact on their respective audiences (practice, policy, community) within their chosen fields and on their institutions. While all agree, reliably measuring impact is an enduring *challenge*, no organization in our sample rigorously evaluates their impact relative to a comparison group, noting that awardee selection is too heavily curated, cohort composition is too important or selection criteria includes too many factors beyond merit, making it very difficult to compose sufficiently similar

comparison groups. Control groups also seem less valuable as peers noted their efforts to demonstrate success and impact focus on contribution rather than attribution, recognizing that multiple factors, many exogenous to any individual funder's support, influence the lives and work of awardees.

Participatory methods involving awardees and staff are the norm for evaluating PCA programs, adding significant value by facilitating understanding of awardees' progress and views concerning program improvements, permitting finetuning of evaluation design and instruments and fostering communication and community among awardees. To assess the outcomes and impacts of their PCA programs, most interviewees rely on multiple qualitative and quantitative evidence (e.g., self-reports, key informant interviews or focus groups, bibliometric indicators, career trajectory evidence and survey data). This overcomes the constraints of any one data source and allows the triangulation of information and cross-checking that improves the quality of conclusions drawn from the data. Interviewees indicate that much of this evidence is typically gathered through a core toolkit that includes periodic qualitative touchpoints between staff (and/or evaluator) and awardees, systematic staff observation and reflection about what they are perceiving, post event feedback that captures immediate grantee satisfaction and learning and annual surveys that track research output, impact on careers and change over time in areas related to the program's theory of influence. Qualitative focus groups or interviews supplement surveys in some cases to probe issues surfaced in surveys and gather narrative stories. Several peers also noted the usefulness of setting entry point baselines with respect to the program's intended outcomes for grantees and then benchmarking against those to measure progress or using post-then pre survey items to examine new skills and conceptual understanding that could not be measured reliably at baseline. Bibliometric evidence is often explored although some interviewees questioned the value of citation analysis for understanding impact or degree of innovation, positing that a large number of citations may indicate that the work is more mainstream than innovative.

Persistent Challenges

This brief summary has drawn together many of the conditions and practices that enhance the *likelihood of success* for PCA programs. Together they provide a roadmap to understand how interviewees are getting the most impact out of their effort and investment. Interviewees also clarified *challenges*, questions and persistent puzzles, areas where they are trying new approaches but are not sure if the results will match expectations or where they feel they have found only a part of the solution. These center around aspects of recruitment and selection, evaluation, and cooperating and learning across internal and external silos. Together they provide a roadmap for further discussion. A few of the more specific challenges that surfaced are: diversifying pools and awardees cohorts, identifying and reducing barriers to application and retention, improving (and moving beyond) citation analysis to be able to separate routine research more successfully from the truly innovative, identifying applicants' intangible qualities more effectively and finding and measuring reliable indicators of innovation and long term impact.

Complete Landscaping Report

This report summarizes results from a field exploration that investigated promising approaches to strengthen and evaluate the outcomes and impact of person-centered, or what some interviewees termed, individual support grants. These include fellowships, scholarships, awards and grants.[1] The Gordon and Betty Moore Foundation (the Foundation) commissioned the project to provide insights on program development, administration and evaluation of potential value to the Moore Foundation's programs and more broadly, to inform organizations that use grants to individuals to achieve grantmaking goals.

The report describes a range of innovative or promising ideas and practices identified in interviews with 20 peer organizations.[2] *(For a list of interviewees with associated organizations and programs, see Appendix 1, List of Interviewees in Moore Foundation and Peer Organizations.)* First, participating organizations were selected in consultation with the Foundation based on the size, depth and longevity of their experience developing and operationalizing individual support grants. Next, Moore Foundation staff involved with person-centered awards (PCAs) were interviewed to better understand their interests to finetune the interview protocol and determine the kinds of practices they might consider promising, as well as to identify other potential peer organizations.[3] Next, peer organization representatives were queried about four main areas: their program goals and activities, recruitment and selection practices, mechanisms for broadening participation and means for demonstrating success and evaluating impact, particularly over the long term. These areas were each explored to help describe the C*onditions for Success* of in person-centered award programs and the conditions that emerged from this study have been woven throughout the report.

The report describes a range of innovative or promising ideas and practices identified in interviews with 20 peer organizations.

A selection of examples has been used to illustrate central points. Text characterizes practices to suggest practice prevalence among the study participants. However, prevalence is not indicative of value given the purpose and design of the project: in some cases, a "few" or perhaps only "one" organization may employ a particular practice but that practice may be promising due to its innovative quality or relevance for the Foundation. That "one" or a "few" use the practice may simply indicate it is not widely known.

The report is accompanied by an examination of peer reviewed and gray literature covering key promising grantmaking and evaluation practices in person-centered and individual awards. *(Appendix 2, Literature Review of Promising Practices in Person-Centered Award Grantmaking.)* The Literature Review is aligned with the sections of this main report and contains a narrative that explores especially relevant works as well as a bibliography. It is referenced in the main report when helpful. A brief precis of findings will be developed following discussions with the Foundation and shared with contributors to the study.

Section I. Practices based on Theory of Change: Program Goals, Design and the Grantee Experience

Section I examines what peer organizations in this study want to achieve with their person-centered or individual support grantmaking (goals), their programmatic design and the activities that form the program experience for recipients. It notes the value of gaining and expressing clarity about the connection between goals and program activities. Gaining clarity on the purposes and goals of a program, developing a theory of change or influence[4] and making sure it is translated into specific objectives and program activities are important *Conditions of Success*. Ensuring this alignment also informs measurement of results. The value of tight alignment between goals, theory and program activities is explored further in *Appendix 2, Literature Review, I. Goals and Theories of Influence, A. Developing a Clear Goal, p. 1*.

Gaining clarity on the purposes and goals of a program, developing a theory of change or influence[1] and making sure it is translated into specific objectives and program activities are important *Conditions of Success*.

Goals and Approaches

Most peers interviewed are not trying to directly solve a particular scientific, technical or social problem *now.* Rather, they described objectives that create enabling conditions that foster solutions to intractable problems that require lengthy remedies and prepare solvers for the next generation of such problems. Importantly, each program was understood within a broader theory of change. For instance, when interviewees saw discovery as best served by insights from across disciplines and networks, they tended to describe recruiting across conventional disciplinary boundaries and using convening activities that facilitate interaction among their participants.

Exploration of peer organization goals and practices can be categorized in the four main focuses summarized in *Appendix 3, Characteristic Initiative Goals and Results with Corresponding Featured Activities, Impacts and Evaluation Approaches.* Producing new knowledge needed to address critical, long term, societal challenges ultimately requires that the most promising contributors be identified, resourced and capacitated. All interviewees' theories of change emphasized to some extent on developing **individual awardees as scientists** highlighting their productivity, influence and applicability. Many theories described activities that also advance the overall potential contribution as **collaborative leaders** enhancing impact through building and collaborating on teams or within coalitions across disciplines, sectors and domains. Several described a theory of change that included a focus on enhancing awardees as **talent developers** who could shape and prepare the field going forward to bring great science to scale sustainably. Promoting inclusion and equitable access to opportunity was typically a significant piece with expectations for awardees to contribute beyond scientific output, even serving as agents of institutional and broader societal change. Finally, all interviewees described activities that

emphasized strengthening **their own infrastructure's** capacity to add value as intended and to adapt in light of experience, progress made and emerging needs.

Most interviewees described enduring and deep-rooted investments. There is widespread recognition among interviewees that PCA programs are a means for achieving goals that take concerted effort over long periods because investing in people through scholarships, awards, grants and fellowships as a means to broader change is a long term strategy. These are not short term commitments given the infrastructure required, the amount of time it takes to brand program opportunities and value (e.g., gain recognition to ensure applicant pool fit with program design) and the persistence required to accumulate a critical mass of research and capacity to yield appreciable impact on the thorny, complex problems of interest. For most programs in our sample, this has meant staying the course for a considerable length of time[5] and incorporating program evolution, or phased sequencing, into the design. When asked about the causes of failed programs, a frequent response was that the organization's board lost interest too quickly without a responsible exit strategy that enabled consolidating or ensuring sustainability for gains made.

Interviews suggest that a vital *Condition of Success* involves adjusting goals, expectations and change strategy to the amount of time you have to achieve your goals and then either staying the course or exiting responsibly in ways that will sustain the achievements. A responsible exit strategy may include the recognition that you can't build a field, or make broad change alone, and will need to build in time to leverage the support of other funders or provide supports beyond individual PCAs, perhaps to institutions in the form of wasting capital grants or endowments. Alternatively, knowing that the investment is time-limited suggests delimiting goals at the start, defining achievable objectives and choosing activities that do not take more time than is available to show compelling results.[6] Exploring opportunities to co-fund in ways that complement other ongoing efforts or help sustain effort and impact offer additional strategies to optimize results.

Creating enabling conditions for current and future problem solving, requires a combination of project support and strengthening participant skills, tools, networks and leadership, equipping participants to work in partnership and to cultivate future contributors, helping to build robust fields that cross-fertilize, and pulling for nimble, aligned, supportive, inclusive institutions.

Reflecting the long-term nature of creating enabling conditions to solve complex scientific, technical and social problems, most programs in the study are designed for early and/or mid-career scholars. Support ranging from one to five years, offered to those with lengthy careers ahead aims to have an enduring impact. Whether primary goals are to back an idea, project or product, strengthen people or build fields, all programs in this study include supports and investments beyond simply funding the best person and leaving them to it. Most interviewees also agree that creating enabling conditions for current and future problem solving, requires a combination of project support and strengthening participant skills, tools, networks and

leadership, equipping participants to work in partnership and to cultivate future contributors, helping to build robust fields that cross-fertilize, and pulling for nimble, aligned, supportive, inclusive institutions. Capacitating those who are, or will become, field leaders is a goal of almost all of the programs in this study and is often seen as a prerequisite for changing institutions and fields to be more equitable and impactful. *Appendix 2, Literature Review, I. Goals and Theories of Influence, D. Training and Supporting Leaders, p. 2 provides additional references.*

The Grantee Experience: Program Activities

PCA programs in our sample all provide significant financial resources as part of the award package. In addition, all programs accompany funding with a tailored grantee experience composed of developmental and project related investments and typically include activities that engage grant recipients with each other during the initial period of the fellowship.

Lacking compelling rigorous evidence for specific program designs, interviewees typically incorporate particular components relying on their theory of change, making a judgment that these activities will assist in achieving program goals. For example, if a theory of change suggests a need for strengthening the capacities of early-career individuals, more program activities will further their knowledge, ability to conduct the supported research project and professional capacities. If theory suggests the need for more mid-career field leaders to bring change to scale in institutions and fields, program components will support recruiting scientists positioned, or likely to be positioned, to make change as well as skills in mentoring, management and strategic communications. When goals suggest a holistic approach is needed to solve big problems, peers often bring grantees together for cross disciplinary and/or cross sectoral fertilization. Program activities commonly include a range of touchpoints between the program officer and grantees, project development support, mentoring and introductions to mentors and/or potential backers, coaching and skill development. Convenings often concentrate on areas such as media/communications, fundraising, advocacy, policy, leadership, effective collaboration and other subject matter from outside a grantee's discipline. *Appendix 2, Literature Review, I. Goals and Theories of Influence, B. Finding the Right Approaches and Activities for the Goal, p. 1-2 suggests resources to help grantmakers consider strategies and activities best suited to their goals.*

A program example demonstrating alignment between goals, design and activities can illustrate this important *Condition of Success*. Seeking to accelerate scientific discovery, this program aims to disrupt disciplinary, institutional, field and national silos that prevent cross fertilization. Developing ethical leaders with the skills to solve the next generation of big problems requires the program to provide early-career fellows with tools, skills and networks that will enable them to communicate and absorb insights from across disciplines and networks. In time, fellows are expected to become field leaders committed to interdisciplinary science discovery for social good. A multiyear commitment is required to fund fellows for a 12-24 month postdoctoral cross-discipline placement in a lab where they undertake a research project that represents a "pivot" from their PhD field. The stipend and laboratory appointment are

supplemented with a combination of cohort-based training modules in the first year, a professional coach, a mentor from outside the fellow's discipline along with peer mentoring, communications and management skill development. Grantees are funded for a total of five years to attend an annual three-four day cross cohort convening with a focus on ethical leadership, graduating into the Senior Fellows alumni community centered on a bespoke fellowship hub after the initial program year.

Another interviewee described a program that seeks to advance the careers of mid-career scholars and experts with leadership potential as a means to build a particular field ready for long term scientific advancement. Building and maintaining a supportive, integrative, international community of experts is critical to achieving the goals of this 26 year-old program. It does this through three years of project funding combined with carefully planned and sequenced cohort and annual cross cohort convenings that include additional experts and facilitated networking and mentoring. The program officer begins integrating fellows into the community by working with each new fellow individually and providing bespoke introductions to five potential senior network members who can assist with the fellow's project or professional advancement. A cohort-based training focused on launching a research-based project is followed by a convening of two cohorts to expand the feedback network and refine the project. This smaller convening helps prepare fellows for the annual, all cohort, scientific convening of field experts in which they and their work gain yet greater exposure.

As these examples illustrate, convenings are often used to strengthen grantee skills, commitments, awareness, networks or collaborations as emphasized in the funder's theory of influence. Funders may bring grantees together in small or larger groups, within a cohort or across cohorts, and include mentors or external experts. Some programs have multiple convenings in an initial program period, each with an explicit purpose such as orientation, project development, policy communication or leadership. Annual conferences or workshops often provide the centerpiece of the grantee experience for programs in our sample. They tend to convene across cohort, discipline and sector boundaries and promote connections and communal bonds among grantees strengthen skills and understanding, air new ideas, create pathways to mentors and access to field experts. In some cases, convenings include cooperative exercises that enhance the likelihood of collaboration among grantees (e.g., group drafting collaborative proposals). In programs that provide multiple years of funding, as many in our sample do, grantees are expected to attend the annual conferences throughout the active grant period. *Appendix 3, Characteristic Initiative Goals and Results with Corresponding Featured Activities, Impacts and Evaluation Approaches, provides a shorthand table of some theories of change and associated packages of activities that interviewees have chosen to achieve the goals they believe will best use their comparative advantage to advance discovery, analysis and long-term problem solving.*

Following the initial "active" period of the grant, almost all peer organizations interviewed see alumni communities as a critical component of achieving the goals of their people-centered awards programs.

Following the initial "active" period of the grant, almost all peer organizations interviewed see alumni communities as a critical component of achieving the goals of their PCA programs. Convenings during this initial grant period begin to create bonds and identification with the program that can deepen and grow after grantees "graduate" into alumni communities. Through systematically constructing lifetime alumni networks and providing progressive developmental supports for members, they continue to invest in their PCA grantees. Among Interviewees, an oft heard mantra was "Once a fellow, always a fellow."

Section II. Practices to Advance and Extend Grantee and Program Impact: Alumni Communities and Networks

This section explores interviewee perspectives on the value and purposes of developing and sustaining communities of awardees after the initial active grant period, as well as program elements used to connect and continue to capacitate alumni[7] through skill development, knowledge building, exchange, collaboration and extended access to resources. Interviewees described the benefits along a variety of dimensions, including, advancing discovery and creating conditions for innovation, improving the quality, quantity, dissemination and impact of research conducted during and after the initial grant and planful field building to impact institutions and sustain impact over time. Funder organizational efforts may include external hubs that serve as centers for grantee and alumni activity and program resources. While not an intrinsic *Condition of Success*, as most PCA programs seek to promote large scale change over long periods of time, the *likelihood of success* appears significantly increased by extending most programs' reach and impact through adding an alumni community component.

Interviewees suggested that the impact of the initial grant period is enhanced when fellows are drawn together in an alumni network as there are sustained opportunities for monitoring and amplifying awardees' accomplishments. Alumni programming also enables new individual, collaborative and collective work to take place over time.[8] Continued efforts to break down generational, disciplinary, field, institutional and other silos promote exploration and cross fertilization that can lead to new insights. Ongoing professional development and network supports that advance careers over time can consolidate and expand the impact of the initial investment in strengthening grantee capacities and positioning them for greater influence.[9]

Many programs have a successive focus, sequencing their activities accordingly. While the initial grant period often focuses support primarily on an individual and a corresponding project, encouraging collaboration is often an intentional part of the alumni phase of support. Many alumni networks are specifically designed to facilitate new, problem-focused collaborations among grantees or even to organize collective community-wide action in a promising area of work. In addition, alumni communities facilitate grantee tracking and assessing long term impact.[10] Often, the exact impact on individuals, fields and institutions of drawing fellows together into a supportive, creative and empowered long-term community cannot be predicted at the outset. Instead, emergent benefits such as those described by

interviewees are considered likely and are typically realized through progressive developmental skill and knowledge building, cross boundary exchange and collaboration. Interviewees stressed that a successful alumni community requires significant investment in developing thoughtful programming and consistent relationships between expert staff dedicated to this purpose. *Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, C. Creating Cohorts, p. 4 cites references for case studies of alumni programs that show positive results in achieving long term goals.*

Alumni Programming

Programming for alumni typically expands on the efforts to connect and capacitate awardees begun during the initial program period. Elements mentioned often include carefully planned convenings of the entire community and/or subsets. These are designed to both foster bonds and to achieve targeted purposes such as building the skills to navigate critical career points, brainstorming a promising line of work, designing a collaborative research or policy oriented effort, or working together on an article or book project. Seed grants for partnered projects are commonly used to promote collaboration that advances particular thematic or problem-solving goals. Master classes and alumni-developed and led thematic working groups may be part of larger convenings or stand-alone. Additional activities for alumni focus on networking with field and policy experts and mentors from outside their usual orbits. Peer organization communications activities are often used to strengthen the reach and impact of individual and collective alumni work. Online community activities encourage alumni grantees to inform and support members and e-newsletters help promote opportunities and engage alumni with each other's work. Interviewees also noted the importance of ensuring that the network continues to benefit the grantees as time goes on and their careers advance. Program relevance, quality and participation rates often benefit from engaging alumni in planning and implementation, as well as from alumni mentoring incoming cohorts.

One PCA program's successful effort to create an alumni community and engage members in achieving their individual objectives while advancing the program's long-term goals, provides a useful illustration of extending the results achieved in the initial grant period. This particular PCA program seeks to transform a field and solve a global, long term scientific and social policy problem by training a new multisectoral generation of early and mid-career leaders. While still maturing as professionals, participants are expected eventually to improve health outcomes in this area and reduce the scale of the problem. Long term commitment and the potential to organize and lead their peers is a selection criterion. Following an initial fellowship period focused on individual training and research, the awardees join a lifetime alumni community considered as integral to achieving these long-term goals as the initial fellowship period. In fact, as annual recruitment, selection and program implementation have achieved steady state, the expanding alumni community has become an even more intensive focus for program investment and refinement.

Programming for this community is designed to promote continued professional development and support alumni as they continue to impact their fields, institutions and countries in order to advance the program's long-term goals. Activities center around five areas: Connection, Support, Continued Learning, Amplification and Partnership. Alumni are connected and encouraged to collaborate through community calls, e-news, directories, cohort meetings, leadership opportunities, and alumni-determined and led interest groups that address the field transforming, scientific and policy agenda. They are supported through access to systems and resources that enhance grant writing and presentation development as well as provide introductions to funding opportunities and mentors. Continued learning consists of opportunities to take and teach master classes, attend topical forums, deliver papers at the program's annual international scientific conference and to engage in clinical rounds. Institutional communications staff support and amplify dissemination of alumni research (e.g., alumni are helped to write blog posts that assist them in learning to write for broader audiences). Program staff help alumni build partnerships with stakeholders in their home countries to broaden recognition of their work and further the scientific and policy goals of the program. Alumni of this program also have opportunities for funding and collaboration across a family of like-minded PCA programs through a central hub.

Programming for this community is designed to promote continued professional development and support alumni as they continue to impact their fields, institutions and countries in order to advance the program's long-term goals.

Participation, often a challenge in alumni programs, is high in this community in part because fellow commitment is a selection factor, expectations are clear early on, the alumni community offers concrete benefits and the community goals mesh well with participants' professional aspirations. Co-designing and implementing activities alongside other alumni and staff makes for more relevant opportunities, simultaneously garnering deeper personal identification, ownership and relationships. Seasoned staff dedicated to this effort since inception brought related experience and innovative ideas, providing connective tissue, solving practical/logistical problems and building trust with each new cohort of alumni. Ongoing refinement is facilitated by framing evaluation as crucial to continuing to identify community and field needs and to maintaining the relevance and effectiveness of opportunities on offer. This supportive, participatory environment helps alumni feel that this is their program and that their feedback to the community is valued for helping to improve the program for colleagues.

Central and Regional Hubs

Hubs for current and past awardees represent an innovative structure to advance program goals. They are typically housed in an administrative partner or implementing organization or in a stand-alone entity created for the purpose. They serve as spaces to convene like-minded alumni (and sometimes active grantees) physically and/or link them electronically in a dedicated webspace. Sometimes hubs serve all program grantees, while others focus on awardees within a given region. For example, one program began with a central hub and added

regional nodes as numbers of alumni fellows grew in particular parts of the world, providing local venues for place-based activities and collaborative action intended to increase engagement and impact at the regional level. There are organizations[11] that specialize in acting as hubs for PCA programs and two unrelated programs in our sample actually use the same external hub.

Some hubs also act as spaces for collecting and storing grantee data, maintaining resources of value to grantees and centralizing best practices and evaluative processes. Additionally, external hubs can be useful after the active grantmaking phase of a program has concluded to maintain alumni communities, facilitate multiplier impacts and enable evaluation processes. One interviewee explained the difficulties in tracking and assessing awardee impact when a central data repository and central alumni community had not been maintained for a large, multicounty, long term PCA program that ended abruptly.

Section III. Practices to Secure Promising Talent: Outreach, Recruitment and Selection

Section III considers interviewee thoughts on the use of outreach, recruitment and selection to achieve theory of change and influence goals. An initial step is to determine the characteristics desired in grantees who will be most likely to benefit from the PCA program that has been designed. This often includes defining, in common and observable terms, what is meant by language such as excellence, curiosity, creativity, or leadership. It is then important to align and systematically apply outreach, recruitment and selection criteria and implement processes to achieve the desired outcomes. Getting this package of inputs right forms an important *Condition of Success* for PCA programs and is informed by a sound Theory of Change. This section explores a few topics that emerged as critical choice points in interviews: how peers are thinking about whether to privilege people or product/project in selection; the key characteristics, including diversity, they are looking for in applicants/nominees; and some of the promising selection processes and tools used to elicit applications and select awardees with those characteristics. Peers' strategies for incorporating diversity in their programs through expanded and targeted outreach and recruitment along with amending application and selection processes is a particular focus. *Appendix 5, Additional Strategies and Resources for Broadening Participation*

provides further discussion of DEI strategies including reducing program design impediments, considering some legal implications and developing dedicated pipeline programs to locate and prepare promising candidates from underrepresented groups.

PCAs Support People and Projects to Different Degrees

Programs in this sample fall along a continuum between privileging product/project or promising person in recruiting and selecting PCA awardees. Most peers interviewed are to some degree selecting for both project and person, although emphasis varies in relationship to goals. In programs designed for those in an early-career stage, strengthening capacities of people is almost always the main aim. Then the proposed project is seen as an indicator of the quality of applicants' curiosity, ambition and likelihood of learning, as well as workstyle and substantive interests as they pivot from dissertations to subsequent projects.

In programs targeted at more mid-career stages, the person and product are usually of equal importance. Sometimes the product is even seen as the main focus of the grant. The expectation is then that the person is taking on new challenges or risks in undertaking a project that advances the boundaries or depth of the field. Hence, an important consideration is the person's record of accomplishing challenging work. Capacity strengthening at that stage tends to focus on leadership, mentorship and/or collaboration. While most interviewees want to enable exceptional people to do exceptional work, there remains debate among peers about whether it is better to target those in mid-career who have proven track records l or to invest early in those with promising potential to do exceptional things.

Personal Characteristics Sought in PCA Recipients

Characteristics sought in awardees vary and are weighted differently in line with program goals, purposes and career stage. However, there is agreement around the importance of a core set of attributes among many PCAs in this study. Most peers are selecting for high levels of intelligence, leadership potential, moral compass, ambition and motivation to improve societies. Also valued are track record, original or innovative aspects of the project proposed, collaborative spirit, novel thinking, creativity and curiosity. While usual indications of readiness[12] for a fellowship or award (such as educational attainment, career accomplishment and research output) are significant criteria, a candidate's more intangible qualities are often deemed vitally important to achieve the goals of the PCA Programs in this study. Recruiting and selecting for these intangibles is seen as an ongoing challenge by interviewees and mechanisms they are using to probe for these kinds of characteristics are discussed below under Application and Selection Processes.

Interest was high among these programs in achieving greater diversity, equity and inclusion (DEI) in applicant pools and awardees. Like leadership and creativity, diversity is also variously defined. While improving gender and racial diversity is an almost universal desire, some programs are also concerned with other dimensions of diversity such as institutional,

geographic, disciplinary, sectoral and personal experience, educational and socio-economic background. One program found that focusing on these other characteristics often served as an effective and preferred proxy for race and ethnicity (e.g., place of origin, socioeconomic background, family immigration and educational history), helping them recruit and create a cohort diverse in all manners.

The benefits expected from incorporating diverse populations in PCA grantmaking go well beyond the desire to support candidates disadvantaged by birth or society. Interviewees pointed to practices that expand access to opportunities to attain the experiences and resources needed to excel and thereby also contribute to a more equitable society. They were clear in their expectation that the quality, comprehensiveness and applicability of new knowledge production and scientific discovery would benefit significantly from increased participation by women and underrepresented minorities, international researchers, participants from other disciplines and new institutional players.

Most peers indicated that science and research are best, and benefit society most, when done by a diverse team. They consider diversity in fields, labs and among their awardees to be at the core of scientific and research excellence, citing multiple reasons. For example**,** individuals' unique histories shape their research interests, questions and approaches. As a result, people from diverse backgrounds and experiences will be interested in different problems, ask new kinds of research questions, bring new frames and pursue new directions. Awardees arrive with different skillsets, toolkits and networks. Interacting with a diverse set of grantees can broaden their supportive and informative relationships. Diversity within the lab and among awardees can be important for improving the reach and impact of research while avoiding "Parachute Science," particularly when addressing a problem requires feeding new research and possible implications back to promote change at local levels. Given the potential to foster innovative solutions to problems, incorporating diversity into PCA programs is viewed as an important *Condition of Success* and one of the most challenging aspects of PCA program design and implementation. *Appendix 2, Literature Review, III. Broadening Participation, A. DEI and Innovation, B. DEI and Accessibility Frameworks in Grantmaking, p. 5-6 provide elaboration on the value of diversity and resources for grappling with DEI concepts in grantmaking and engaging in trust-based philanthropy. C. DEI Practices in Science Grantmaking, p. 6-7 provides references for considering how to avoid Parachute Science and data colonialism.*

Most peers indicated that science and research are best, and benefit society most, when done by a diverse team.

Outreach, Recruitment, Application and Selection Practices

This subsection explores interviewees' thoughts on promising recruitment methods and application and selection processes they are using to find, attract and select PCA awardees. When discussing recruitment, interviewees often addressed tradeoffs in choosing to use open calls combined with carefully crafted RFPs or nominations. A contrasting "scouting" method was by one interviewee and deserves consideration. Given the extent to which diversification

can contribute to innovation, the subsection highlights outreach and recruitment strategies peer programs are using to incorporate greater diversity in their PCAs. Selection methods discussed include practices for gaining clarity on candidates' intangible qualities, tradeoffs in cohort composition and incorporating diversity concerns in application and selection.

Tradeoffs in recruiting through nominations, open calls and active scouting

The general consensus has been that open calls are valuable when the goal is to allow more people from different settings to see the competition as accessible and to apply, expanding beyond existing network boundaries and encouraging fresh ideas into the mix. Nomination processes that involved a limited number of elite institutions[13] or old-guard senior figures risk field stagnation and may reward only those who had already made it to the best institutions. Indeed, the practice was frequently seen as contributing to insularity and narrowing the range of ideas. In the current sample, interviewees are about evenly split between those who use nominations and those who use open calls. Those that use open calls cite the benefits above but emphasize the need to craft RFPs clearly detailing perquisite training, work requirements, professional and personal characteristics sought and program goals to enhance the likelihood of a good fit between the program on offer and the pool of applicants. Even then, programs that use open calls have to be prepared to handle a greater volume than those that work through nominations. In this sample, open calls are used more often when the number of awards anticipated is fairly large. Those who use nominations value the ability to control the volume of applicants[14] and work with nominators and institutional representatives to explain their criteria and desiderata,[15] select nominees who fit the program well and prepare nominees for the application process.

Some programs interested in reducing risk of insularity are enlarging the number of institutions involved beyond the usual focus on R1 institutions. When staff control who nominates, they can also broaden participation by, for example, asking colleagues in other parts of the foundation to nominate individuals or to suggest and invite nominators from their sectors or world regions. In one case, nominators advancing a candidate one year must sit out for five years. This innovation allows staff to broaden participation by regularly adding new nominators and new institutions[16] while also forcing deeper consideration of names forwarded. This hybrid combines the advantages of a nomination process (i.e., control, manageability and better fit) with some of the attributes of an open call (i.e., openness, fairness, engagement with new ideas and new voices). *Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, A. Promising Practices in Recruitment, p. 3 provides references to further discussion of the uses of nominations and open calls*.

Another program has chosen a rotating "scouting" model to identify a small number of potential awardees who combine high-impact ideas that can solve important societal challenges with the professional and personal prerequisites to use program offerings to help them accomplish their goal. Guided by successful exemplary awardees, program staff continuously scan for potential awardees who meet criteria for both innovative ideas and promising personal characteristics. Staff spend time in places where they will be exposed to

these kinds of ideas and people. Once they identify a potential candidate, they may spend months getting to know the person and their work to assess fit between what the person needs to successfully bring the idea to fruition and what the program can offer. Staff listen carefully to gauge a candidate's potential benefit and contribution (e.g., determining if they are servant-leaders, asking them to identify what they need to succeed and why). Staff may also make suggestions of people with whom candidates should talk. Then they wait to see if the potential awardee shows initiative and motivation by following up. This time intensive, bespoke recruitment method can help increase the likelihood of success. It seems best suited if the funder has the time, staff capacity and funds to invest heavily in capacitating a relatively small number of individuals and ideas at a time.

Outreach and Recruitment practices to broaden the applicant pool

Most peers find that improving diversity in the pool of applicants or nominees by intervening at the outreach and recruitment stage can be an effective strategy to broaden the selection pool while mitigating potential legal pitfalls.[17] Interviewees discussed a range of practices they found helpful to ensure diverse, competitive pools of applicants or nominees through various institutional strategies, individualized approaches and thoughtful outreach materials. If the program relies on institutional nominations, strategically opening up the pool of eligible institutions as discussed above can improve diversity. Some peers also have expanded outreach efforts to departments and institutions that have significant populations of minority students or faculty such as Historically Black Colleges and Universities (HBCUs) and Research IIs.

Active engagement of partners in the field can be critical to implementing such targeted outreach efforts. This may require staff to invest time in orienting institutional leaders to program goals, activities and criteria as well as identifying faculty advisors who are mentors and magnets for talented minority graduate students and post docs. Scholarships or fellowships for their students also act as carrots for faculty collaboration. Some programs offer professional development or project support resources to enlist the help of these pipeline activators. Another promising strategy develops dedicated representatives at nominating institutions who, once familiarized with the program's desiderata, can refer students toward the opportunity. If the program relies on individuals to make nominations, it is important to diversify that group and develop materials and approaches to clearly and efficiently explain the range of characteristics sought in nominees. Again, programs that inform and invite staff across their whole home organization may be able to draw on the eyes (and networks) of all those program officers in other fields and geographies.

Many interviewees suggested crafting communications purposefully as a way to help more diverse applicants envision themselves as successful participants. Benefits of this approach can be amplified by including evidence and anecdotes that demonstrates the value of the program for minority participants and highlight the diversity already achieved.[18] Some programs engage current and past grantees of diverse backgrounds to help design effective recruitment procedures, policies and messages, as well as to assist in outreach or recruitment efforts. Targeted outreach to alumni of programs that are specifically designed to build the academic

pipelines for underrepresented groups is another practice some have found effective in attracting well-prepared, diverse, applicants. As an added benefit, engaging the staff of such programs in advertising to their fellows or providing nominations of appropriate candidates can usefully expand a PCA program officer's personal community of practice. The literature is rich with examples of promising approaches. *See Appendix 2, Literature Review, III. Broadening Participation, particularly C. DEI Practices in Science Grantmaking, p. 6-7. Appendix 5, Additional Strategies and Resources for Broadening Participation, offers a list of programs dedicated to supporting underrepresented groups.*

Application and selection practices to maximize fit with program goals

Many interviewees suggested that the most difficult aspect of choosing awardees is identifying the more intangible characteristics that help assess the match of technically well-prepared candidates' values, interpersonal skills and working style with program goals, opportunities and supports.

Almost all of the interviewees in the sample require formal applications and related materials from candidates. These packets request varying amounts of demographic information and aim to help convey candidates' educational background, career and professional goals, research and leadership accomplishments, often combining curricula vitae and essays. Programs that emphasize research projects will typically ask for a description of the intended work. Many programs consider additional information provided by citation analysis and recommendation letters although some interviewees raised concerns about their value and have reduced dependence on them. Comments suggest that the narrower the substantive field and geographic reach of the program, the more likely recommendation letters will be of value, as panelists will have knowledge of the academic traditions of recommenders and may also know how they typically write such letters. If a program goal is to support innovative work, there is concern that a large number of citations may not actually indicate that the work is pathbreaking. At least one program has created a convenient template and offered additional support to avoid disadvantaging applicants who identify recommenders unfamiliar with conventional letters.

While most interviewees use a single stage application process, a few are using a multistage process that reduces barriers for applicants by requiring only input needed for screening at the initial stage and follows up with applicants for additional detail and recommendations only for those who move on to a second stage. In one case, after consulting with past applicants as part of a program review process, the program decided to slim down the initial application to two pages with two open-ended questions. A smaller number who were selected were invited to submit a full application. This new process reduced burdens for applicants, staff and selection panelists, resulting in a final pool that was a closer fit with program goals.

Many interviewees suggested that the most difficult aspect of choosing awardees is identifying the more intangible characteristics that help assess the match of technically well-prepared candidates' values, interpersonal skills and working style with program goals, opportunities and supports. PCA programs in the sample use questions on both applications and in interviews to

gain insight into applicants' personal qualities such as creativity, curiosity, values, social goals, problem solving, stress tolerance and time management. For example, an application or interview might ask for concrete, revealing instances of applicants' taking on a new challenge or risking failure, pivoting away from prior work to explore something new, showing flexibility in order to reach the goal, solving a problem that emerged in a collaborative setting, overcoming a roadblock encountered or identifying a time when they took the suggestion of someone else and ran with it. Some programs ask the applicant to describe their personal journey and ways they have led or collaborated as a mechanism for learning about the individual, their experiences and how they think. Some probe the applicant's interest in contributing to the social good and avoiding Parachute Science by asking them to discuss how their research and project proposal advances equity or addresses other broad social issues and community needs. Exploring volunteer opportunities within and beyond the professional role was also mentioned to help understand a candidate's commitment and predisposition toto make a difference in the world in collaboration with others. The importance of listening carefully during applicant interviews was stressed by several interviewees as a source of insight into applicant character, how they think and interact and what they will likely gain and contribute. It is also common to ask similar questions about applicants when requesting nomination or recommendation letters.[19] *Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, B. Promising Practices in Selection provides a deeper discussion of intangible qualities and indicators to look for in applicants.*

Most interviewees engage in a typical PCA selection process including staff review of applications for eligibility and two or more rounds of application review by expert committees trained in the program's goals, activities and selection criteria. Interviewees noted that selection criteria should be checked to match guidance given in advertising and application processes. Rubrics are often used to promote reliability, validity and consistency when comparing applicants across important aspects of their work and personal characteristics, as well as to rate and rank applicants. Programs using a multistage selection process tend to consider a combination of project merit and personal characteristics in the early stages and weigh diversity of various kinds "at the margins" among candidates of relatively equal standing on merit in a later stage. Finalists are often interviewed and in the last stage of selection, all the knowledge about the candidates is brought together to select awardees. In one case, the program uses a Pairwise Comparison Method[20] at this final stage to score each finalist against all other finalists across all dimensions of the criteria.

About a third of the programs in this sample described cohort composition as an important consideration, typically drawing attention toward the end of the selection process once a pool of individuals with appropriate qualities has been determined. Cohort composition appears more important among programs that emphasize cohort learning, teaming, bonding and travelling together, as well as those that emphasize collaborative science and amplifying impact through an enduring alumni community. However, it is sometimes used when a balance of attributes is desired among awardees. Program goals dictate whether a program wants to compose a cohort that is similar or different along the following sorts of dimensions: area of work/sector/discipline, educational background, countries or regions, social class,

race/ethnicity, capacity to gain or contribute to a common effort. Over time, tradeoffs between composing cohorts that are more or less similar along such dimensions may also evolve as the program gains traction, settles on core activities and brand and becomes better known. Other factors that may impact tradeoffs in cohort composition include changes in the big questions facing society, as well as field developments, discoveries, consensus and solutions for old questions and emergence of urgent new issues. *Appendix 4, Some Typical Tradeoffs in Composing Cohorts provides a table of what is gained and lost in choosing cohorts that are similar or different along the dimensions noted above.* For further thoughts on the topic of creating cohorts, see *Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, C. Creating Cohorts, p. 4.*

Application and selection practices to diversify awardees

Interviewees seek to achieve diversity in grantees through a range of mechanisms designed to level the playing field. These include thoughtfully crafted applications, diversifying the composition of selection panels, applying anti-bias training and offering support for applicants. As discussed, getting diverse applicants to read themselves into a PCA program is a challenge at the recruitment stage and it remains a challenge at the application stages. Peers have crafted application or interview questions that help spotlight motivated applicants by asking about commitment to equity and incorporating diverse perspectives in their work, as well as by inviting insights into their training, networks, personal journey or other professional choices. Others have sought applicant input to help identify obstacles and suggest how to reduce burdens. Introducing a multistage application process that reduces barriers to entry for all applicants has been described as a way to encourage diverse applicants who might be constrained by time and resources.

Ensuring a diverse pipeline by reducing burdens and refining applications is being complemented by diversifying selection panels, diversity and anti-implicit bias training and ongoing coaching of program staff and selection panels.

A number of interviewees have reviewed their applications for questions that could be removed or changed to reduce potential bias against those with less access to top level institutions or research opportunities and to cultivate and demonstrate their capacities. Many peers offer virtual recorded or live training in application preparation for all interested applicants to help level the playing field. Another interviewee noted that writing style and fluency alone can disadvantage applicants early in the selection process regardless of potential as a scientific thinker and doer. They wondered if more mentoring or training in how to prepare and write applications would help additional promising early career applicants advance for more serious consideration. *For additional ways of reducing burdens and supporting applicants see Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, B. Promising Practices in Selection, p. 3, particularly Alice Ilchman, et.al., The Lucky Few and the Worthy Many. For further discussion of reducing bias and considering power dynamics see III. Broadening Participation, B. DEI and Accessibility Frameworks, p. 5-6.*

Ensuring a diverse pipeline by reducing burdens and refining applications is being complemented by diversifying selection panels, diversity and anti-implicit bias training and ongoing coaching of program staff and selection panels. Bias mitigation efforts like these have become common, with some programs adding training specifically in how to avoid bias when reading applications and recommendation letters. Many noted that the norms of having several panelists read each application or sending applications to external experts, also helps when combined with program cultural norms and practices that reinforce checking biases in group discussion. Picking up on the idea that applicants from different educational histories and cultural contexts may have writing styles that differ from academic convention, one program educates panelists about different traditions for preparing writers and researchers. Taking a more organizational approach, some peers have recently hired inclusion consultants to examine their practices and recommend strategies. Another has deployed a senior, in-house program executive to share their academic and practical expertise in diversity and bias in higher education. As noted earlier, while applications are typically judged on merit in the early stages of a selection process, when applicants have similar merit ratings, diversity of various kinds is often a part of the criteria at later stages when awardees are selected and cohorts are composed. A method that systematically compares applicants across all desired attributes, such as the Pairwise Comparison Method described earlier, has been useful in further reducing bias.

Some interviewees discussed the idea of blinding personal and demographic data as a mechanism to reduce bias. While a few are interested in whether it might help reduce bias, omitting personal information such as indicators of race, sex, ethnicity, educational background or personal experiences from criteria assessment was generally not considered useful in achieving program goals for a range of reasons. For most interviewees, the applicant's personal experience and attributes are critical which means their personal information and recommendations form an important part of the selection criteria. Others suggested that when cohort composition is important to their theory of change, they need to know a lot about the individuals relatively early in the process. The more heavily curated selectees are, the more time staff need to spend working with applicants and thus they know a lot about them before they enter the selection process. For those that depend primarily on other institutions to recommend individuals, blinding would not change the outcome.

Only one peer organization interviewed has tried blinding. For the past two years the program has asked for a single page of demographic data in the initial application but has not shared it with the selection panels in the initial phase of their multistage, open competition. If an applicant moves on to the finalist stage, they produce a new proposal that includes their biographical stories and the demographic data is then circulated along with the new application. The main finding from this recent experiment is that before starting this practice, this PCA program awarded applicants from only a handful of top institutions. Blinding has significantly broadened the institutional diversity of awardees but it has not changed either gender[21] or racial diversity.[22] Despite implementing the kinds of diversification strategies discussed here, interviewees have not been completely satisfied with progress. Incentivizing and supporting applicants who are hard to reach, have limited access or routinely read

themselves out of opportunities is seen by interviewees as a complex and enduring challenge that requires further attention. *Additional ideas for improving diversity in PCA pools and among awardees are offered in Appendix 5, Additional Strategies and Resources for Broadening Participation and Appendix 2, Literature Review, III. Broadening Participation, B. DEI and Accessibility Frameworks and C. DEI Practices in Science Grantmaking p.5-7.*

Section IV. Practices to Understand and Improve Success: Infrastructure and Evaluation

Section IV examines interviewee input concerning the conditions that enable quality implementation and ongoing learning while doing. Many interviewees described the usefulness and importance of establishing supportive infrastructure to augment the funder capacity, experience and knowledge development, amplifying the impact of individual program officers and the capacities of individual organizations. In addition to formal learning and evaluation investments, organizational efforts include communities of practice (CoPs) within and across organizations that serve to share information and best practices, seek solutions to common challenges and collaborate on tasks of common benefit. The second part of this section discusses informative outcome and impact evaluation promising assessment practices and practical tools. Interviewees see the process of reflecting, evaluating and understanding the extent to which outcome and impact goals are being achieved as an important *Condition of Success.* Strong organizational learning processes and knowledge gained have direct implications for program improvement and for demonstrating the program's value necessary for long term viability.

Communities of Practice and Affinity Groups

Many interviewees identified supportive value in communities of practice that bring staff together across programs within a single foundation or administering partner, across foundations that work in similar areas or across institutions that partner in a program. While not a necessary *Condition of Success*, learning from and with similar programs makes a substantial contribution to the *likelihood of success* for an individual PCA program. Siloed programs and organizations that promote a culture of "every boat on its own bottom" miss the opportunity for the cross learning and economies of scale that can make programs, and the organizations that house them, more robust, effective and efficient.

Internal communities of practice

Interviewees often expressed concern that their program units were working in silos, uninformed of the practices, norms and insights among staff working on similar activities. The benefits of breaking down silos were raised by many peer interviewees although the aspiration for more intentional and consistent engagement tends to outpace the reality. Several peer organizations interviewed are in the early stages of more systematically and routinely sharing knowledge about areas such as recruitment and selection, grantee reporting and evaluation.

Comparing experiences and sharing knowledge about processes has been found to be critical to avoid reinventing the wheel, promote learning about what is and isn't working and help adopt standardization and new norms.

One organization that implements fellowships and awards programs in partnership with multiple funding agencies developed an internal CoP across its PCA programs. The staff began with an agenda to share knowledge more systematically in order to become more efficient and effective in their shared mission. In time, they articulated how their approaches overlapped, designing processes, procedures and templates for common functions (e.g., award letters, terms and conditions, application components and questions, logic models, evaluation plans and data collection instruments). Similarly, standardizing common data elements and determining a set of common metrics meant the organization could aggregate and compare information about applicant pools, awardees, selection committees and outcomes across programs. Starting with tailorable templates made it more likely data was collected in overlapping areas and offered flexibility for unique program interests. Balancing attention to common and unique elements helped staff and management understand the whole of its PCA work and consider improvements. Developing common approaches and processes further assisted with new program design, identification and implementation of best practices and reporting to stakeholders.

Many interviewees identified supportive value in communities of practice that bring staff together across programs within a single foundation or administering partner, across foundations that work in similar areas or across institutions that partner in a program.

Other interviewees described formalized exchange and cross training practices that foster understanding and advancement across program silos, as well as overall organizational strengthening. For instance, asking staff to read and comment on each other's proposals for new or renewing programs as part of the internal approval process helps engage others, fosters a common lens and builds a norm of critical support and exchange. When all staff are aware of each program goal and plan, the number of staff providing recruitment reconnaissance to broaden representation of targeted awardees can grow efficiently. Assigning a knowledgeable senior staff expert in an area such as diversity or evaluation to be responsible for updating other staff and disseminating new developments is another promising practice used by some peer organizations. In another case, multiple related programs, located in different countries, have created functional workgroups in areas such as alumni programming, communications strategies, program design and evaluation practices. Focused agendas at periodic virtual or in person meetings enables them to share information, learn together, identify best practices, mentor incoming staff and trouble shoot common challenges. Most recently the alumni programming-focused workgroup is considering how to best address knotty common problems such as how to engage, or even find, alumni who drop out of sight. They expect to work together to analyze the characteristics of those who don't participate and the reasons they opt out in order to develop strategies to encourage participation.

Cross institution communities of practice

Many interviewees find value in learning and working across foundations or institutions that are seeking to accomplish similar goals. Several noted the importance of cross fertilizing and sharing knowledge informally with a small number of peer organizations on an ad hoc basis,[23] while others cited the advantages of participating in broader communities of practice or formal affinity groups in their sectors.[24] Many of these promote cross learning and information sharing, gathering periodically for panels on relevant topics, curating accessible toolkits and references on topics of importance, and serving as a "go to resource" for members seeking to take the pulse of the community on an issue with which they may be wrestling.

CoPs also may work together to develop and advance a common vision for their field. Some do this by aligning their funding and pooling funds to fill gaps, making policy statements or developing talking points for agencies and foundation boards. A few are highly collaborative and task oriented, meeting regularly to work on common projects or grapple with a longstanding issue in the field or attend trainings. For example, concluding that it would not be possible to build their field of interest globally acting alone, one interviewee founded a CoP for funders with PCAs in their scientific area, engaging likeminded partners across geographies. This global community of some 45 organizations meets monthly, often with a speaker or panel, to learn together and brainstorm on an area of shared concern such as how to avoid perpetuating colonial exploitation or extractive partnering, evaluating impact, or improving diversity in their PCA programs. The group also functions as an informal sounding board and information source for participants' concerns. About half of the participating organizations have also joined project or event planning working groups. One such working group has produced a common theory of change for participating PCA programs in this scientific area that helps current and new programs align their efforts with the community's broader vision for the field. This has been so successful as a guide that one field leader decided to make it the basis for every future PCA program the agency designs.

Evaluation Practices

Almost all peer organizations interviewed engage in tracking awardees and trying to assess the short and intermediate term impacts of their programs on grantees' productivity, influence and advancement.[25] Many also seek to understand their grantees' impact on their respective audiences (practice, policy, community) within their chosen fields and on their institutions.[26] Many formal evaluations follow-up with participants after a relatively short period and are limited primarily to self-report descriptive designs. No organization in our sample rigorously evaluates that impact relative to a comparison group. Beyond the limitations of formal study design, peers noted that their efforts to demonstrate success and impact focus on <u>contribution</u> rather than <u>attribution</u>, recognizing multiple factors, many exogenous to program models influence the lives and work of awardees (including overlapping support from other funders).

A number of promising practices are helping to mitigate some of these methodological constraints. Using theory of change to point to valid predictive leading indicators that are measurable within the time frame of the evaluation is essential to generating prompt and relevant information. Some program evaluations use pre-post repeated measures to assess short term changes, or post-then pre survey items to examine new skills and conceptual understanding that could not be measured reliably at baseline. Triangulation of information from multiple qualitative and quantitative methods is another useful strategy to help overcome the constraints of any one data source (e.g., self-reports, key informant interviews or focus groups, bibliometric indicators, career trajectory evidence and survey data). One interviewee described using the Most Significant Change methodology[27] to both offset some of the limitations in understanding causation and develop compelling and informative feedback to stakeholders. In this technique, awardees are asked to describe the most impactful change they observed, describe the drivers and reflect on the benefit.

Almost all peer organizations interviewed engage in tracking awardees and trying to assess the short and intermediate term impacts of their programs on grantees' productivity, influence and advancement.

Participatory methods involving awardees and staff are the norm for evaluating PCA programs. Post event feedback forms and annual surveys of grantees were consistently cited as the most common methods used. Two programs fund awardees to conduct mini studies that will inform theory of change and program implementation, while building the commitment, empowerment and management skills thought essential to achieve impact and influence goals. In many cases, program staff in foundations or implementation partner organizations attend to some evaluative efforts alongside their program duties. In some cases, dedicated professional evaluation staff are embedded in internal program teams and work alongside program staff to track and assess outcomes and impact.

Even when scientific productivity, influence and applied solutions to complex problems are the ultimate criteria of program success, several interviewees emphasized the importance of matching evaluation activities with developmental needs and program readiness. While most programs aspire to assess impact as soon as possible, some noted the time it takes to establish implementation quality and consistency. They noted substantial risks of premature impact assessment, including incorrectly determining no impact because insufficient time had elapsed, or because the program design and delivery were changing. In fact, several "young" programs that are still actively refining their models and practices, emphasized the value of using developmental evaluation partners to help actively inform, refine and stabilize implementation. Adding formative evaluation focused on the recruitment, selection, activity implementation quality, support utilization and attrition often produced the most actionable information for program improvement.

Enabling Conditions and Structures that Support Evaluative Efforts

As interviewees discussed how they were evaluating their PCAs and what they were learning in the process, a set of enabling conditions and structures emerged that seemed to consistently underpin successful tracking of grantees and evaluation of progress on short- and long-term outcomes and impacts. These include building programs for alumni, developing strong relationships between program staff and awardees, and maintaining consistency in staffing. Establishing a learning and evaluation culture, and making it evident and valuable to grantees, developing guidance for and maintaining both institutional memory and good data, articulating clear goals and feasible evaluation plans and considering how best to organize, house and staff evaluation efforts, all lay the groundwork for capturing and understand the outcomes and impacts of program interventions and are themselves C*onditions of Success*.

Strong alumni networks and programming for alumni communities

Alumni programming can improve outcomes and the assessment of outcomes. As mentioned earlier,[28] most peers interviewed invest in systematically building and programming for, alumni communities. Those that do, cited the significant value of alumni networks and associated programming to follow grantees' careers over the long term, engage them meaningfully in evaluation efforts and use participatory feedback about professional trajectories to assess career-long impact. This is particularly important for PCA programs given the time it takes for the impact of capacity strengthening to be fully realized and the typically slow pace of knowledge production and scientific discovery, with impact taking even longer to be felt. Peers cited examples of inadequate or misleading evaluation results due to low response rates when evaluators were not coordinated with alumni communities.[29] Engaging grantees in career tracking also facilitates informative approaches including network analysis and bibliometric mining.

Interviewees felt that grantee commitment and a sense of belonging make for more valid evaluation. Many peers observed that the stronger grantees' sense of communal belonging and of the value the program continues to provide, the more motivated they are to provide honest and useful responses. Belonging is often facilitated through programming that engages them in shaping the program for alumni and future cohorts through elements such as mentoring the next cohort, planning and running activities, sharing their expertise on conference panels and helping design assessments. Elements that serve participants' needs such as working collaboratively with other grantees, learning across boundaries, gaining

guidance from mentors and having their work amplified, demonstrate the continuing value of the network to alumni awardees. Participation in evaluative activities is often further incentivized through eligibility for mini grants.[30]

Staff rapport with grantees, internal cooperation and continuity

Important to the ability to construct alumni communities and encourage grantee participation in them and in long term evaluation efforts, is the program's social capital established through personal relationships between program staff and grantees. This points to the usefulness of in person convenings and multiple supportive touchpoints between staff and grantees and to staff continuity in PCA-style programs and their related alumni networks. A number of peers also cited the added benefit to grantees of staff as connectors and problem solvers, conveyors of information and amplifiers of their work. These relationships and the advantages grantees derive from them are seen as key to strong and open engagement in long term evaluation efforts. This suggests that staff assigned to alumni and evaluation efforts will be most successful if they have the capacity to develop reciprocal relationships, foster community, build bridges and solve problems. While "We know them all!" was an oft heard comment from interviewees, at least one program noted this may have a double-edged sword that both enables and threatens reliable and informative evaluation. Awardees who lose touch or disengage may be systematically different from those who stay actively involved in activities and connected with staff. In order to manage this risk, innovative evaluators use attrition analysis, comparing program completers with those who drop out on data from both applications and activity participation. Identifying risk factors and trends in attrition can be used to tailor and target extra supports as well as to describe results more comprehensively.

Several interviewees observed that routine information pooling and exchange, and horizontal cooperation among staff responsible for the program, for alumni relations, for evaluation and for communications can distribute burdens and improve evaluation utility. Particular importance was given to aligning alumni engagement and impact evaluation strategies. Staffing for PCAs that include both alumni and evaluation efforts vary by program size and longevity from two-five FTEs. In some organizations with shared staff for specialized purposes, two FTEs may be spread over five or more individuals with functional specializations in, for example, alumni community development, learning and evaluation, data management and communications. In large, long lived programs the number of alumni and thus the programming and tracking and evaluation effort, will in time outweigh the numbers in an annual program intake and the time and resources expended on an initial program year or two. Program staff are then typically supplemented by full time alumni and learning and evaluation coordinators. The clear message is that staff support and infrastructure should be planned alongside decisions about goals and program design to ensure that staffing is adequate to achieve program goals.

A learning and evaluation culture for staff and grantees

Several peers underscored the importance of making grantees aware of the reasons for evaluation, as well as the importance the foundation places on long term learning. They saw these messages as setting the stage for evaluations that will improve the program experience for following cohorts and provide evidence to hold the program accountable to grantees, boards and other stakeholders and partners. Practical ideas shared by interviewees include leadership messages that refer to both data and actions take, along with engaging grantees in co-creating evaluation instruments and data interpretation. Demonstrating how the iterative learning cycle works through modeling staff participation in design, data collection and sense making can further inform awardees as change leaders.

Some level of formality is desirable for assessment and exchange that is visible to fellows, along with systematically protecting time for reflective practice and applying findings in order to instill an appreciation for pausing to take stock individually and collectively. Reporting back to grantees and showing how their feedback directly impacts the program's evolution is seen as critical to promoting trust and responsiveness. Survey and interview questions need adjustment over time to reflect questions the program and awardees are actively facing, keeping data collection relevant and underscoring grantees' sense that their feedback is needed and valued. Reporting out helps reduce evaluation anxiety and fatigue and mitigates the perceived extractive nature of evaluation activities. Some interviewees also suggested that alumni coordinators and evaluators will be better positioned to do their jobs successfully when they journey alongside grantees rather than appear periodically or collect only retrospective impressions. Data driven critical reflection that is an intrinsic, publicly valued, part of the program experience normalizes candor and promotes improvement. In sum, openness and candor build trust and comfort, leading to more engagement and more reliable data. *Appendix 2, Literature Review, IV. Evaluation, A. Evaluation During the Award Term, p. 8 provides references for ways of involving grantees in evaluation processes.*

Consistent data practices

In thinking about what they might have done differently to avoid inconsistent and missing data that hampered evaluation, several interviewees cited the importance of determining naming conventions at the outset for items such as fellow and university names, titles, disciplines, countries, regions and other areas where comparison over time might be desirable. Thinking through which data would be useful to compare or aggregate enables establishing categories and item options that work over time. Consistently collecting and analyzing the data using these conventions, making findings accessible through convenient institutional memory and actively passing implications and methods to incoming staff makes it more likely that the needed data is usable and used over the long periods PCA programs generally make awards.

Keeping data in some sort of central hub was also suggested particularly when a program involves multiple institutions, granting and implementing agencies or locations. Peers' stories of the difficulties of evaluating when data has been collected without standardization (at least

within a program if not across programs within one institution) or when data about portions of the grantee population are held in different locations, give credence to this advice. These points related to evaluation, mirror the value some peers found in creating internal communities of practice that lead to common procedures and practices across an institution's PCA programs.

An evaluation plan to understand progress against clearly articulated goals

Interviewees described a series of planning activities that they have found helpful in preparing to capture and analyze outcomes and impact. The first emphasizes the importance of articulating the program's theory of influence or change which requires gaining clarity on goals for the program, its grantees and others the program might intend to impact such as institutions or fields. The role of PCAs and selection criteria for awards and related program activities can then be aligned with these goals to improve likelihood of success. An evaluation plan can then be developed to measure progress toward those goals. A typical plan includes a description of goals and program design, a logic model that captures the relationship between short- and long-term goals and program activities and a set of priority "learning questions" concerning program processes and results that the program wants to understand through implementing its evaluation plan. These inform defining a set of milestones and leading indicators[31] that reflect whether program is on the path to success. Practical measurement plans enumerate key metrics and potential sources of the data needed to demonstrate progress including the methods and tools to be used to gather that data. Setting baselines for the key indicators is a next step, and rubrics can then be developed to track progress against the baselines. Piloting measures and analyses help ensure whether the plan is feasible and sustainable. Most interviewees were only too aware of occasions where incomplete or unrealistic plans resulted in wasted resources because they were too complicated, time consuming or the data required could not be collected.

An effective organizing structure for evaluation efforts

Peer organizations interviewed organize their program, alumni community and learning and evaluation work in several ways. Most manage the PCA program itself internally. About a third also manage alumni community development, grantee tracking and the portion of evaluation work that is tied to the normal course of delivering the program and its alumni community in house. Several have implementing partners for tracking alumni and developing alumni communities and related programming. In those cases, evaluative activities tied to program and alumni community delivery are also conducted by the implementing partners. In one case, a suite of PCA programs was developed by the foundation in partnership with multiple aligned grantee organizations who are connected through a central hub that adds value to the work of the grantees and incentivizes and facilitates collaboration and collective action across programs. The grantee organizations

Multiple strands of evidence suggest the most effective structures place program implementation, alumni community development and routine evaluative activities with one set of staff.

implement programs, develop the alumni communities and conduct evaluative activities. In another case, the implementing partner manages program and evaluation while a separate organization develops alumni communities. In a few cases, evaluation activities are housed with separate organizations. Multiple strands of evidence suggest the most effective structures place program implementation, alumni community development and routine evaluative activities with one set of staff. This promotes the development of complementary alumni engagement and impact evaluation strategies and ensures implementation is coordinated. It also enables seamless burden and knowledge sharing across functional specializations and makes it easier for staff to establish and maintain the program's social capital with grantees.[32]

To complement internal evaluative efforts, a number of interviewees have found it useful to engage a long-term external evaluation partner to journey alongside the program during implementation. The learning and evaluation partner engages in multiple "real time" review, reflection and data gathering points during implementation. This is particularly valuable in the early years of a program's development or after a significant reboot. Peer organizations also periodically engage external evaluators for data collection and evaluation activities that fall outside the normal course of doing business. External evaluators bring objectivity, expertise, credibility and augment internal staff capacity. They are typically used to supplement or evaluate the work of implementation partners, review foundation grant portfolios or engage in cluster analysis to examine groups of programs with similar goals. *Appendix 2, Literature Review, IV. Evaluation, A. Evaluation during the Award Term, p. 8 provides references to several models of evaluation efforts.*

Commonly used Approaches and Tools

To assess the outcomes and impacts of their PCA programs, most interviewees collect several kinds of evidence including anecdotal, bibliometric and observational**,** as well as participatory feedback**.** Multiple sources of data allow triangulation and cross checking thus improving the quality of conclusions drawn from the findings. Much of this evidence is typically gathered through a **core toolkit** that includes periodic qualitative touchpoints between staff (and/or evaluator) and awardees, systematic staff observation and reflection about what they are perceiving, post event feedback that captures immediate grantee satisfaction and learning and annual surveys[33] that track research output, impact on careers and change over time in areas related to the program's theory of influence.

Interviewees vary on the desirable level of formality and consistency in operationalizing participatory evaluation based on need and feasibility but there is agreement that these largely participatory methods not only facilitate understanding of awardees' progress and views but also permit evaluation design and instrument improvements, and foster communication and community among awardees. Bibliometric evidence, both the existence and impact of publications**,** is also often explored through annual surveys as doing this research in house is notoriously staff intensive.[34] However, as with using citation analysis in selection processes, some interviewees wonder how much can actually be learned about impact from tallying the numbers of papers and their citations. If a program goal is supporting innovation, the concern

is that a large number of citations may indicate that the work is mainstream and routine rather than innovative. Measuring whether the goal of supporting innovation is being achieved was often cited as an unresolved challenge. *Appendix 2, Literature Review, IV. Evaluation, E. Measuring Innovation, p. 10 agrees, noting that citations are a poor proxy for understanding research output and impact and that Albert Einstein would have received a low score on article citations. This section cites references that offer ideas for moving beyond citation analysis if the goal is to measure innovation while agreeing that the challenge remains.*

Several interviewees also noted the usefulness of setting entry point baselines for awardees with respect to the program's intended outcomes for grantees and then benchmarking against those to measure progress. Baselines are developed through application questions, intake surveys, personal action plans and/or gap analysis to identify areas that require attention. Depending on program goals, the baseline might capture, for example, where the grantee is at the start of the grant on intended professional development and learning outcomes, network composition and size, evidence of collaboration, degree of interdisciplinarity research, publications or research in a new area. Annual surveys that track progress against these baselines can then assess the ways in which the grantee and their work change during the program and over the course of their careers as part of demonstrating the program's contribution to the grantee's career and impact. *See Appendix 3, Characteristic Initiative Goals and Results with Corresponding Featured Activities, Impacts and Evaluation Approaches for thoughts on different evaluation approaches and tools that may be relevant based on program goals.*

As mentioned at the beginning of this section, no peer organizations in this study currently experiment with comparison or control groups as part of evaluating their PCA programs. While some suggested they were interested in exploring how a control group might be composed and incentivized to participation in evaluative activities over time, many indicated that awardee selection is too heavily curated or that cohort composition is too important a factor to make comparison groups useful. Control groups are typically discussed in relation to following runners up in a competition. The more that selection criteria move beyond easily measured kinds of merit, the harder it is to compose equivalent comparisons groups, pointing to some random assignment from a larger pool of acceptable candidates. This mirrors earlier discussion of the reasons interviewees suggested for not blinding application materials. *Appendix 2, Literature Review, IV. Evaluation, C. Equitable Evaluation Practices, p. 9 offers further thoughts on the use of randomized control trials in evaluating PCA awards in contrast to alternative forms of evaluation.*

Beyond this common set of tools and observations, interviewees described a range of approaches and tools they or their implementing partners are using for specialized purposes and offered insights into the focal areas and question topics they feel help to reveal indications of progress toward a program's goals. *Appendix 6, Specialized Evaluative Tools and Designing Grantee Feedback to Probe Program Progress. Appendix 3, Characteristic Initiative Goals and Results with Corresponding Activities, Impacts and Evaluation Approaches provides ideas about*

the kinds of lead indicators and markers of successful outcomes that correspond to program focus and goals.

Section V. Reflections on Practice: Conditions that Optimize the Likelihood of Success and Puzzles that Persist

In the course of interviews for this study, peer program developers and managers identified many useful practices in program design, recruitment and selection and evaluation they are using to achieve their goals. We have highlighted those that seem most promising or innovative in the preceding pages of this report. In this final section, we draw together the conditions and practices that enhance the likelihood of success for PCA programs. Together they provide a kind of roadmap to understand how interviewees are getting the most impact out of the effort they put into their PCAs. Interviewees also clarified challenges, questions and persistent puzzles, areas where they are trying new approaches but are not sure if the results will match expectations or where they feel they have found only a part of the solution. The report concludes by suggesting some areas where those engaged in developing and managing PCA programs have indicated they could benefit from additional thought, discussion and knowledge-sharing.

These conditions and practices create a kind of roadmap to understand how interviewees are getting the most impact out of the effort they put into their people-centered awards.

Both the Conditions of Success and the challenges identified in this landscaping might promote useful discussion among Moore Foundation staff, executives and board related to their PCA programs. Some of these discussions might lead to greater internal connectivity or changes in program design, implementation or evaluation practices. Others might result in innovative suggestions for peers on puzzles the wider community of PCA program practitioners are struggling with.

Conditions that Optimize Success

Program Visioning, Goal Setting and Design: Gaining clarity on the vision, purposes, values and goals of a program, developing a theory of change that outlines the key change strategies to be used to achieve the goals and making sure this vision is translated into a program design that includes specific objectives and program activities is a necessary *Condition of Success* for program sound development, implementation and evaluation. Operationalizing the program consistent with goals and design is an important next step. It is clear that PCA programs are a strategy for achieving long-term goals as investing in people's careers and their work takes a long time to bear the desired fruit. This suggests that as these early design steps are taken, is a useful moment to consider the amount of time the organization is willing to commit to achieve the goals and then either adjust the goals accordingly, determine to stay the course for the length of time needed or acknowledge the need to commit to undertaking a responsible exit strategy in ways that will sustain the initial program achievements. Thinking through this

Condition for sustaining a PCA program's Success over the long term at the outset of program planning will provide the time to leverage the support of other funders or consider additional institutional support strategies. While not necessarily a *Condition of Success*, it is clear that the addition of an alumni community component to a PCA program enhances the likelihood of success in achieving their goals by extending the program's reach and impact. Alumni communities are also a strategy for extending the impact of a program beyond its active life.

Recruitment and Selection: Aligning the characteristics desired in applicants and grantees with the program goals and design and taking the time to get the fit right, is an important *Condition of Success*. This means both defining the tangible and intangible elements sought, determining what is meant by oft used terms such as excellence, merit or innovation as well as intangibles such as curiosity, creativity or value driven. Having determined what is desired, it is then important to develop and systematically apply outreach, recruitment and selection criteria and processes to achieve the desired outcomes. As diversification is seen as critical to finding innovative solutions to problems, incorporating diversity into PCA program pools and awardee cohorts is viewed as a necessary condition for success.

Evaluation: The process of reflecting, evaluating and understanding the extent to which outcome and impact goals are being achieved is a critical *Condition of Success* with direct implications for operationalizing and improving the program's design and for demonstrating the program's value. Both continuous improvement and demonstrating the program is making progress on its intended outcomes and impacts makes it more likely it will be able to stay the course for the time needed to achieve the goals. The report identifies a set of *enabling conditions and structures* that underpin successful tracking of grantees and evaluation, thus helping to optimize the likelihood of program success. Developing a feasible evaluation plan and establishing and practicing a culture of reflection, learning and evaluation for staff and grantees, is key. As noted above, establishing clear goals, well aligned with activities, to evaluate progress against, and robust alumni communities that enable tracking and foster bonds between program and grantees, facilitate sound evaluative evidence.

Staffing and Organizing Structures: Developing appropriate organizing structures and processes to deliver activities, enable reflection, stock taking, learning and improvement, is a *Condition for the Success* of all aspects of the PCA program. It is important to consider how best to organize, house and staff the program and its evaluation efforts, making sure that staffing is adequate to the size of the program and incentivizing long term staff commitment where possible in order to facilitate strong relationships between program and grantees. Institutional memory, consistent data management and capture practices and transparent and systematic recruitment and selection practices each contribute to successful program implementation. While not a necessary *Condition of Success*, internal communities of practice that promote knowledge sharing and brainstorming across programs help to optimize the success and efficiency of each program involved. Participation in cross institution CoPs supports individual program staff and contribute to making the common endeavor more efficient and effective. If information from those external gatherings is shared across programs within an institution, it can contribute to the success of all a funder's programs. *Appendix 2, Literature Review, I. Goals*

and Theory of Influence, A. Developing a Clear Goal, p. 1. Seminal works in the field, Tony Proscio "Dissecting Human Capital" and GrantCraft's "Grants to Individuals: Investing in People and their Communities" track well with our findings and provide further guidance on conditions that underpin success.

Puzzles and Challenges for Further Thought

There are challenges and choice points embedded in achieving all of these *Conditions of Success* that emerged in this study. However, there are well trod pathways for addressing many of them. Below are a few knotty issues that many interviewees in this sample continue to struggle with. These center around aspects of recruitment and selection, evaluation and learning across internal and external silos.

Diversifying Pools and Grantee Cohorts**:** What diversity is desired in relationship to goals? What is the best combination of strategies to ensure a diverse pool and a diverse cohort of grantees? What experiments could be useful to determine if and how blinding demographic data might contribute to diversification in programs where personal characteristics of applicants are central? Many promising strategies are practiced by interviewees but none believe they have landed on the right package to ensure the diversity they desire.

Identifying and Reducing Barriers to Application, Retention**:** How might barriers to success for all applicants be identified and promising practices in preparing candidates to succeed in preparing competitive applications (tools, training, mentoring, funding childcare, compensating applicants for their time) be developed and piloted? Might support for those not selected (providing some program materials, including in community, events or convenings, supporting reapplication) help to encourage less well-resourced applicants to apply? How might desired applicants who are not applying be identified, reached and incentivized? What data is needed?

This question goes beyond who is and isn't applying. Programs also struggle to understand attrition and the reasons for it. Who isn't completing a program, isn't thriving or is lost from the alumni community? Why and what can be done to improve retention and outcomes?

Improving Selection Processes: How can selection panels get the most value out of recommendation letters and citation analysis? What changes might be needed to make these letters better indicators of a candidate's ability to thrive in the program and innovate in the field? How might the use of citation analysis be modified not just to demonstrate "standing on

the shoulders" of the giants who came before, but to separate routine work from true innovation more effectively?
How can applicants' intangible qualities be better identified? Interviewees have a range of strategies for discovering exceptional people with the promise to do the exceptional work of the future. Through applications and interviews, they try to identify traits such as curiosity, creativity, commitment to society, innovative thinking, but no interviewee expressed confidence that they have a solid toolkit for doing that.

If finding innovative solutions for long term tough problems is a goal, is it more effective to invest in early-career investigators with promise and long careers ahead or mid-career researchers with proven track records?

Evaluating Impact: Interviewees mentioned multiple strategies for trying to understand outcomes and impacts of their programs including innovative approaches to how evaluation is perceived, introduced to grantees and implemented to ensure high quality data over long periods of time. Yet measuring innovation and impact are enduring puzzles. How can the most reliable indicators of innovation or impact be identified and measured? Might comparison groups be useful in understanding the impact of PCA programs on grantees and their impact on their chosen arenas? How might comparison groups be constructed given the issues raised by interviewees around the importance of curated selection and cohort composition?

Cooperating and Learning across Silos: Interviewees identified significant value in sharing information and collaborating with colleagues within and outside their organizations while lamenting that this is not typically seen as "part of the job" or incentivized. How can barriers to internal cooperation be identified, and change incentivized, so that silos become more porous and knowledge sharing becomes a routine part of organizational culture, improving efficiency and effectiveness? Under what circumstances is it most useful to engage in or develop cross institutional communities of practice and how can knowledge gained permeate the organization?

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[1] In this report, the terms, grant, award, fellowship and grantee, awardee and fellow are used interchangeably in reference to mechanisms and individual recipients of grant funds, supports and programming. See discussion of definitions in *Appendix 2, Literature Review, I. Goals and Theories of Influence, A. Developing a Clear Goal, p. 1.*

[2] It is worth noting that all organizations approached participated and enthusiastically shared their insights.

[3] Moore Foundation practices are not included in this report as we did not probe these practices deeply and more importantly, a goal of this project is to jump start internal cross program sharing of knowledge and practices within the Moore Foundation itself based on insights and practices from the broader field.

[4] We often used the informal term "theory of influence" in discussions with interviewees to capture their ideas around what evaluators might more formally term Theory of Change and Theory of Philanthropy.

[5] Many programs in the study have been in place since the 1990s. One is more than 70 years old. The youngest program was 10 years old and in that case the interviewee noted that the program had been stopped too soon due to a change in the foundation's leadership and board interests, losing the traction gained and dismantling the infrastructure that could have enabled tracking fellows to understand their impact. Programs that have started in the last few years all plan a long term investment.

[6] For example, for a 3-5 year program, instead of setting a goal to change policy in an area, you might choose a goal of increasing basic research being conducted in that area by 10% through support for dissertation research. But if you had 10 years, there would be time to impact policy based on the new research conducted.

[7] Some programs use the term Senior Fellows.

[8] Alumni communities may function in part as communities of practice particularly when knowledge sharing and collaboration are part of the experience.

[9] This study includes several programs dedicated to increasing diversity in the professoriate and in professional fields that require a PhD. For those programs, alumni communities serve additional purposes of empowerment and support for minority scholars who face unique barriers to professional advancement and include programmatic elements designed to achieve those goals. Specific attributes of these programs are discussed further in *Appendix 5, Additional Strategies and Resources for Broadening Participation.*

[10] This is explored further in Section IV, Practices to Understand and Improve Success: Infrastructure and Evaluation.

[11] For example, Institute of International Education, Rhodes Trust-University of Oxford, Social Science Research Council.

[12] *Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, B. Promising Practices in Selection, p. 4 references the Evelyn and Walter Haas, Jr Fund's 'Flexible Leadership Awards' practice of exploring when organizations and individuals are "ready" for an award through a phased approach.*

[13] Typically, Research 1 institutions in the US or top PHD granting universities worldwide.

[14] Nominations are often used when a pool of 50-80 applicants is desired from which to select 10-20 awardees.

[15] Some programs that use open calls also use institutional representatives to help explain the program to potential applicants thus ensuring a better fit between goals and candidates.

[16] For example, Minority Serving Institutions including Historically Black Colleges and Universities, Tribal Colleges and Universities.

[17] Legal considerations are discussed in *Appendix 5, Additional Strategies and Resources for Broadening Participation.*

[18] A number of interviewees suggested that when potential applicants see that the program has already welcomed awardees from diverse backgrounds into their community is a powerful attraction to those from diverse backgrounds.

[19] *See Appendix 2, Literature Review,* IV. *Evaluation, E. Measuring Innovation, p. 10 describes the use of "novel keywords" as an indicator of capacity to take risks. This idea could be implemented as part of the selection process as well.*

[20] See reference for Pairwise Comparison Method.
https://study.com/academy/lesson/the-pairwise-comparison-method-in-elections.html#:~:text=Pairwise%20comparison%20is%20a%20method,preference%2C%20not%20a%20single%20choice.

[21] Prior to this experiment, gender percentages among awardees already reflected the field as a whole and remained stable.

[22] PCA Programs for whom personal characteristics are a critical part of the basis for judgement could try an experiment that blinds only institutions to see if broadening awardee institutions has a longer term impact on other aspects of diversity.

[23] Our sample includes a case of two unaffiliated organizations that have found significant value in cross fertilizing extensively across their PCA programs.

[24] There are many examples of sector wide affinity groups such as Health Research Alliance, Science Philanthropy Alliance, STEM Funders Network, Grantmakers in the Arts, Aging, Health, Environmental Grantmakers Association, Transforming Evidence Funders Network and numerous other sectoral areas of philanthropic concern.

[25] Sometimes referred to as outcome level measures.

[26] Only one organization in this study has not yet invested in systematic evaluation efforts due to lack of time and staffing but hopes to do so. Interestingly some noted that there was greater interest in systematic evaluation at the program level than at the executive and board level.

[27] See Rick Davies, Jess Dart, The Most Significant Change (MSC) Technique: A Guide to Its Use (2005).

[28] Section II, Practices to Advance and Extend Grantee and Program Impact: Alumni Communities and Networks.

[29] Interviews suggested that programs with strong alumni communities and staff relationships with grantees routinely have survey response rates of between 60-90%. Rates of 10-30% are common when robust relationships are not in place.

[30] *Appendix 2, Literature Review, IV. Evaluation, B. Post-Award Programs as a Facilitator of Evaluation, p. 8 provides references that elaborate on the ways long term tracking and alumni communities can support robust impact evaluation.*

[31] Examples: for Program level, lead indicators might be, articulating vision, values and implementing structures and processes; for Grantee level, lead indicators might be grantee satisfaction, achieving and applying learning outcomes.

[32] See Section II, Practices to Advance and Extend Grantee and Program Impact: Alumni Communities and Networks, and discussion in current section of building staff rapport, internal cooperation and continuity.

[33] These are periodic studies conducted annually. Surveys are sent to the entire population which changes each year with the addition of new awardees and respondents self-select which carries with it a range of potential biases. As these programs have usually established baselines for their grantees, the surveys can be analyzed serially to tease out change over time for individuals who have responded consistently. While they may also give a sense of general trends for cohorts or the overall population, they do not have the statistical power of longitudinal studies to detect change because they do not follow the same randomly, or purposefully chosen representative sample over time. Longitudinal studies are discussed further in *Appendix 6, Specialized Evaluative Tools and Designing Grantee Feedback to Probe Program Progress.*

[34] Surveys routinely ask grantees to attach a recent cv or list recent publications that result from, or are influenced by, work undertaken during the grant period.

Appendix 1: List of Interviewees in the Moore Foundation and Peer Organizations

Ansley Abraham, Director: State Doctoral Scholars Program, Southern Regional Education Board

Armando Bengochea, Senior Program Officer for Higher Learning, Director: Mellon Mays Undergraduate Fellowship (MMUF), Andrew W. Mellon Foundation

Leo Curran, Senior Officer, Pew Fellows Program in Marine Conservation: Pew Charitable Trusts (Current position: John E. Bryson Program Director for Science, Engineering, and Technology: American Academy of Arts and Sciences)

Kim Cruz,* Communications Manager: CMB Foundation, the Equity Initiative

Phillip Davidovich, Technical Advisor, Data and Digital Literacy: International Research and Exchanges Board (IREX)

Lorelle L. Espinosa, Program Director, Higher Education: Alfred P. Sloan Foundation

Abigail Diamond, Associate Executive Director, Communications and Impact: Atlantic Institute

Khalil Goga, Associate Executive Director, Community and Programming: Atlantic Institute

Adria Goodson, Director, Global Fellowship Program: The Ford Foundation

Charles Guedenet, Senior Technical Advisor for Monitoring, Evaluation, and Learning: International Research and Exchanges Board (IREX)

Dennis Haraszko, Head, Portfolio and Outcome Evaluation: Mastercard Foundation

Anne Hultgren, Executive Director: Arnold and Mabel Beckman Foundation

Tom Kalil, Chief Innovation Officer: Schmidt Futures

Megan Kenna, Executive Director: Schmidt Science Fellows

Camellia Latta, Program Director for Alumni Relations & Special Initiatives: Global Brain Health Institute (GBHI) at University of California San Francisco

Joey Lee,* Associate Director, New Executives Fund: Open Society Foundations

*Interview conducted via informal email exchange

Alude Mahali, Chief Research Specialist, Inclusive Economic Development Programme (IED): Human Sciences Research Council (HSRC)

Mirka Martel, Head of Research, Evaluation and Learning and Project Director, Ford Foundation International Fellowships Program Evaluation: Institute of International Education

Raymond McGhee, Senior Program Officer: Robert Wood Johnson Foundation

Jared Raynor, Director, Evaluation and Learning: TCC Group

Julie Taylor, Director of Academic Relations, Fulbright: Institute of International Education

Stacey Yamamoto, Director of Evaluation and Strategic Projects: Global Brain Health Institute (GBHI)

Gordon and Betty Moore Foundation Interviewees

Yaw Agyeman, Adaptive Management and Evaluation Officer

Karen Cosby, Program Director, Diagnostic Excellence Initiative

Amalia Fernandez Panella, Program Officer, Emergent Phenomena in Quantum Systems Initiative

Gary Greenburg, Program Officer, Science Program

Adam Jones, Program Officer, Symbiosis in Aquatic Systems Initiative and Moore Inventor Fellows

Cathy Mader, Program Officer, Experimental Physics Investigators Initiative

Richard Margoluis, Chief Adaptive Management and Evaluation Officer

Appendix 2: Literature Review of Promising Practices in Person-Centered Award Grantmaking

Whether person-centered awards refer to human capital investments, grants to individuals, prizes, awards, fellowships, scholarships, or other educational programs, they all take a similar approach to achieving a goal through philanthropic support to individual persons. The decision to fund people contains an implicit or explicit theory that supporting people will also benefit a community or field (GrantCraft 2008, 2-3).

This literature review provides a guide to selected resources for staff in foundations and their administrative and implementation partners working on person-centered awards (PCAs) to deepen knowledge about program design, recruitment, and selection, broadening participation (including diversity, equity, and inclusion) and program evaluation.

I. Goals and Theory of Influence

A. Developing a Clear Goal

Any person-centered award program starts with the assumption that some sort of change is needed and the articulation of a clear goal. The goal then informs the best program design, whether it includes prizes or awards, fellowships, scholarships, or grants to individuals to best address the problem and move towards the goal. PCAs focus on the idea that the analysis of the needed change requires addressing a gap in talent or a shortage of creativity, skill, leadership, advocacy, or combination thereof, that philanthropy can address (Proscio 2015, 36). Translating the broad aspiration of a PCA into concrete objectives determines its success or failure more than any other factor (Bays et al. 2009, 40).

A number of publications start from the premise that a clear theory of change and good program design determine the success or failure of a PCA (albeit each use slightly different terminology). The GrantCraft report on “Grants to Individuals: Investing in People and their Communities” walks the reader through four steps to good program design and financial mechanisms to support individuals (VanDeCarr 2008, 10-17). A McKinsey & Co report on “Capturing the promise of philanthropic prizes” also outlines three questions as to whether a prize is the appropriate philanthropic tool for the nature of the change sought, the various ways prizes deliver change, and five steps to designing a prize program (Bays et al. 2009, 20-26; 37-42). Tony Proscio’s “Dissecting ‘Human Capital’: A critical look at the elements of human capital philanthropy through the example of The Atlantic Philanthropies’ Population Health Program in Vietnam” (2015) explains the relationship between person-centered philanthropy and wider philanthropic goals.

B. Finding the Right Approaches and Activities for the Goal

It is important to find the right philanthropic approaches and activities to address the goals. Pitfalls occur when the goals and activities are not aligned, when one format is used to fit all

circumstances, or when short cuts are taken in developing the prize (Bays et al. 2009, 35-36; Proscio 2015). Bernholz (SSIR, 2007) also notes that prizes and awards may not fit all situations, and a research grant or investment in an institution might better incentivize the change a foundation or organization cares about.

The literature also identifies categories or types of PCAs. Proscio (2015) outlines five fundamental kinds of human capital investments: direct training or education of individuals; educational institutions or programs; educators committed to raising skills and standards of practice; networking opportunities to connect leaders, educators, or reformers; and demonstration projects by visionary and ambitious leaders. McKinsey & Co identify six archetypes of prizes: exemplar, exposition, network, participation, market stimulation and point solution (Bays et al. 2009, 47-51). ProFellow identifies four types of fellowship programs: matchmakers, launchpads, people accelerators, and strategic employers (Yadav and Johnson 2020, 7).

C. Incentivizing Innovation

How PCAs can best incentivize innovation is another challenge discussed in the literature. Azoulay et al. study how to develop "radical innovation" through exploration, which allows for "substantial tolerance for early failure and rewards for long-term success" (2009, 5).

It is debated whether prizes successfully reward innovation. Good prize design can effectively address a needed change, and open competitions can be useful (Dehgan and Walji; Youn; Patel 2013). On the other hand, prizes may also overemphasize innovation over implementation, benefit only well-established organizations, waste applicant time, and distract from a real market for innovation that leads to impact (Starr 2013).

However, just creating or rewarding innovation alone may not achieve a broad societal impact, and it must be complemented by other grantmaking tools, service programs, convenings, or investments in infrastructure (Bays et al. 2009, 69).

D. Training and Supporting Leaders

PCAs are also given to leaders of the organizations that seek wider change goals. Such awards may be program components that seek to develop leadership skills or grants to talented leaders. Fellowships for sabbaticals or other training opportunities for leaders is one such kind of person-centered award. "Creative Disruption: Sabbaticals for Capacity Building and Leadership Development in the Nonprofit Sector" provides a comprehensive guide to leadership sabbaticals to avoid burnout. The report finds that sabbaticals rejuvenate executives, increase organizational capacity, strengthen governance, help succession planning, and develop trust between funders and organizations (Linnell and Wolfred 2009).

However, there is a risk that PCAs that aim to support change might undermine the organization or wider movement that a funder aims to support. Hilary Pennington (2016) explains in *SSIR* how supporting leadership training or a sabbatical for an organization's executive may make it difficult to implement changes upon their return if the larger group

didn't have the opportunity to learn the same vocabulary or set of tools. Likewise, other team members who stepped up during the leader's absence may resent being relegated to lesser roles if not recognized for their successes and potential.

II. Recruitment, Selection and Creating Cohorts

A. Promising Practices in Recruitment

A GrantCraft guide to "Using Competitions and Requests for Proposals" discusses the administrative tasks involved in running a competition and what issues to consider, including how to use the process as a learning community (Arrick et al. 2004). A helpful timeline for sample competitions is provided on page 20.

Sometimes a competition is not the right strategy; it must take into account the costs to those who apply and are rejected (Arrick et al. 2004, 5). Nomination processes may work better for programs aimed at supporting experienced people in their field (Arrick et al. 2004, 21). Also, working with partners, such as sector-specific or community organizations, agencies, universities, or past grantees can help develop relationships across silos and identify new pools of applicants.

GrantCraft's "Grants to Individuals" explains promising practices in recruitment, including considering applicants' time and limitations, the foundation's capacity to manage an open competition, and working with outside stakeholders in dissemination (VanDeCarr 2008, 20). Stakeholders are not just applicants but may include those who might influence them to participate, co-sponsors or future sponsors, and those who directly or indirectly benefit from winning (Bays et al. 2009, 45-46).

GrantCraft and others recommend communicating clear, understandable, and simple criteria for success, leaving maximum space for participants to be creative (Bays et al. 2009, 56).

B. Promising Practices in Selection

The book, *the Lucky Few and the Worthy Many* (2004), reviews the literature to date on student achievement and discusses promising practices in scholarship programs. Sternberg and Grigorenko (chapter 2) create a model of "wisdom, intelligence, creativity synthesized" (WICS) as the best way to evaluate students for scholarship programs. They provide an in-depth discussion of these intangible qualities and what indicators to look for in applicants.

GrantCraft's "Grants to Individuals" provides many ideal practices in selection and is a useful guide to follow (VanDeCarr 2008, 20). It is also important to build communication about the competition and the winners into the process, including increasing the capacity of winning grantees to communicate their work (Arrick et al. 2004, 16).

Supporting those not selected is also a way to broaden the field for the next recruitment and selection. The GrantCraft guide to "Using Competitions and Requests for Proposals" points to a

number of ways to support all applicants, such as offering technical assistance and compensating runners-up as planning grants to develop their proposals (Arrick et al. 2004, 14).

Likewise, the authors of *The Lucky Few and the Worthy Many* identify ways to broaden the field of applicants, such as providing tools and services to support those completing applications, including childcare, student loan assistance and equipment, as well as appointing recipients to serve as role models to peers (Ilchman et al. 2004, 15).

The Evelyn and Walter Haas Jr. Fund Flexible Leadership Award has developed ideas about when organizations and individuals are ready for the program, including creating a "phase zero" (Ryan 2013, 45-46). The FLA program later created two phases, allowing participants to start leadership work before revealing readiness for a more ambitious initiative, and others proceed directly to a second phase that is longer and requires more funding (Ryan 2013, 50).

Another method to support selected applicants is through summer schools and other training programs. OSF's Pre-Academic Summer School prepares international students with academic skills as well as cultural competency for graduate programs at universities in Europe and North America. "While the scholarship itself removes financial barriers to international education, the Summer School program attempts to remove academic barriers, by introducing students to skills, knowledge, and culture of academia at their hosting institution" (Campbell and Basi 2021, 26). By deconstructing the values of Western academia and helping students to understand those codes, it helps them to better navigate their universities upon arrival.

C. Creating Cohorts

Fellowship managers may select a group of fellows for a cohort in a way so that they will be able to work together. The authors of *The Lucky Few and the Worthy Many* discuss the importance of creating a *cohort effect* by gathering awardees together before, during, and after a fellowship, which "harnesses the prestige of a fellowship or scholarship program and the network it implies to further its aims" (Ilchman et al. 2004, 22).

A cohort can also build on the concept of a *community of practice*, a group of people who share a concern or passion and learn how to do it better as they interact regularly (Wenger 1998). Together, they undergo a process of engagement in meaningful activities, shared thinking and imagination, and alignment in a unified purpose in problem-solving, learning, and refining skills (Campbell and Lavallee 2020). Bringing awardees together to build skills and capacities, work together, and provide longer term support can help assure the aims and objectives of the program are met over their careers.

Fellowship models that focus on activities that awardees do together are based on the concept of a community of practice. The CORO fellowship (http://www.corofellowship.org) seeks not just to equip fellows with knowledge and broaden their networks, but they also work on shared projects to learn by experience. In these projects, fellows interview members of a marginalized community to identify problems, come up with a plan to solve the problem, and then meet among the community to explain the solutions they have developed. The Atlantic Fellows for

Health and Racial Equity programs in South Africa have similar approaches to develop new change leaders (Klugman 2021).

PCA programs that invest in a cohort effect also tend to have strong alumni programs in which awardees come together after the award or fellowship ends. Case studies of alumni programs of international scholarships fit the community of practice model, and they have shown positive results in achieving change goals (Campbell and Lavallee 2020; Campbell and Baxter 2019).

III. Broadening Participation (Diversity, Equity, and Inclusion)

A. Diversity, Equity, and Inclusion (DEI) and Innovation

DEI approaches are important for cultivating innovation. Scott Page writes in *The Diversity Bonus: How Great Teams Pay Off in the Knowledge Economy* (2017) that bringing diverse teams together will pay off bonuses beyond the sum of their parts. He focuses on cognitive diversity (diversity in the way people think due to identity, education, or life experiences), and he offers a road map to assembling and supporting a diverse team designed for the task at hand.

Diversity bonuses extend to academia as well. A study of all PhD dissertations between 1977 and 2015 found that doctoral researchers from unrepresented groups create more novel findings in their research (Hofstra et al. 2020). However, underrepresented groups are less likely to have their findings adopted.

How can a funder best support innovation by underrepresented groups? Echoing Green's report on its fellowship for Black social entrepreneurs, "Black Voices, Black Spaces" cites lack of trust as a key barrier to helping black social innovators. Innovation often requires risk-taking and failure, a luxury which many innovators of color are not afforded (2002, 13-14).

B. DEI and Accessibility Frameworks in Grantmaking

Many resources currently exist for organizations to introduce and grapple with DEI concepts in grantmaking:

- There are 271 reports in the Issue Lab special collection on "racial equality": https://racialequity.issuelab.org/
- The D5 coalition (2013-2018) provided resources for how to introduce DEI topics and frameworks to philanthropy leadership and boards: https://www.d5coalition.org
- Philanthropy for Racial Equity (https://racialequity.org) focuses on similar questions. PRE's most recent report focuses on how DEI commitments have been "mismatched" with actual funding for racial equity over the last 10 years.
- Nonprofit AF offers snarky commentary on power imbalances between philanthropy and grassroots organizations, especially those representing marginalized groups: https://nonprofitaf.com

Other recent works explain DEI frameworks and emphasize the importance of building in these concepts and frameworks at the very start of designing programs. GrantCraft's "Grantmaking with a Racial Equity Lens" asks funders to imagine a world where race doesn't shape the

allocation of power, benefits, and burdens among groups in society, and then looks at how racial disparities stand in the way of program goals (2007, 2-3). OSF's guide to *Advancing Diversity, Equity and Inclusion in Grant Making* urges grantmakers to "consider, question and challenge" various "systems of oppression and discrimination, power and privilege" in each stage of the grantmaking process (2021, 8-11). Similar advice to grantmakers is given in the following publications: Rockefeller Philanthropy Advisors guide to "Diversity, Inclusion and Effective Philanthropy"; GrantCraft's "From Words to Action: A Practical Philanthropic Guide to Diversity, Equity, and Inclusion" (Chow 2018); and Ford Foundation's DEI Case Studies, Funder Guidance, and a Facilitators' Guide. Arabella Advisors has provided a checklist of potential actions to incorporating DEI in grantmaking (2016), including in recruitment and selection processes.

Ford Foundation also offers case studies and funder guidance on Disability Grantmaking. People with disabilities are often not captured in data as a category, and accessibility is often left out of DEI frameworks. A social model of disability focuses on barriers in society that must change, rather than a medical model that focuses on fixing the impairment of the person. The Disability and Philanthropy Forum offers more resources (https://disabilityphilanthropy.org/) including a "menu" of practices.

A larger question inherent in DEI approaches deals with existing power relationships in philanthropy. The Grant Giver's Movement in the United Kingdom conducted a survey about power imbalances, efforts to date to address them, and what challenges remain. Ultimately, it found that "re-balancing power within the grant making context on a practical level means recognizing that grant makers are not always the best people to make funding decisions" (2020, 3). Greater participation is needed by those with lived experience, as well as efforts to restore power and resources to people and communities affected by wider systems of oppression.

New models are being explored to increase participation and restore some power to grantees. The guidelines offered by the Trust-Based Philanthropy Project (https://www.trustbasedphilanthropy.org) is one such effort. Participatory grantmaking is another way to address imbalances and bring in the viewpoints of those with lived experience. While it is still an emerging practice, an increasing number of resources on participatory grantmaking exist for grantmakers, which can be found in an Issue Lab special collection: https://participatorygrantmaking.issuelab.org/.

C. DEI Practices in Science Grantmaking

One approach to increasing diversity in science grantmaking focuses on communicating science to more diverse audiences and supporting students from underrepresented groups as they move through educational programs and fellowships. Christopherson et al. (2021) argue for increasing communication about science to reach audiences previously underserved and excluded from information about science, co-creating programs with them. Promoting accountability of science programs and data collection is also key (Christopherson et al. 2021, 55).

Investing in diversity, equity and inclusion in science, technology, engineering, and math (STEM) education will also increase diversity in science fields. A literature review of DEI in STEM education is provided by the Sloan Foundation and University of Southern California (Posselt et al. 2021). It found four major themes in efforts to date: mentoring and skill development to students; changing practices at institutions that affect student opportunities; enhancing student support programs; and moving away from systemic inequalities that benefit overrepresented groups. The Meyerhoff Scholars Program at the University of Maryland (https://meyerhoff.umbc.edu) is considered to be a national model for investing in individuals with interests in science and engineering from diverse backgrounds, and it is being replicated elsewhere (Christopherson et al. 2021). A study of the Sloan Foundation-funded STEM mentoring programs at nine other universities provides key lessons learned and underscores the importance of investing in program design and implementation (Gale and McGuire 2023).

A landscape scan of grantmaking practices to support DEI in STEM education provides insights into the definitions, frameworks, and lenses used by foundations supporting this work. Unfortunately, it finds that funding continues to be focused on a small number of well-resourced institutions, thereby replicating existing inequalities (Higher Ed Insight ND, 4). This landscape scan helpfully points to opportunities and gaps in the field (Higher Ed Insight ND, 39-41), and Appendix A provides actionable investment practices.

Funders in the field of health research that have committed to diversifying the health workforce and reducing disparities in health outcomes are sharing grantmaking practices through the Health Research Alliance (https://www.healthra.org/inclusive-grantmaking-initiative/). Further resources to incorporating DEI in funding basic science are provided by the Science Philanthropy Alliance (https://sciencephilanthropyalliance.org/diversity-equity-and-inclusion/).

Equity and inclusion should be considered in how science and research is conducted as well. *Parachute science* is when researchers from the Global North conduct research or deploy programs in the Global South without recognizing or investing in local expertise, capacities, and social structures (de Vos and Schwartz 2022). *Data colonialism* is when data and learnings are taken out of communities without their knowledge or consent, justified through systems and ideologies, and those communities are not given a chance to examine and learn from the data themselves (Ramanathan et al. 2022). Data should be owned by the communities where it is collected based on their decisions about what is private, only shared with meaningful consent, and not be used for punitive aims (Ramanathan et al. 2022, 60).

Finally, open sharing of research outputs reduces information gaps between communities as well as accelerates discovery and encourages innovation. Resources for philanthropy to promote open sharing can be found through the Open Research Funders Group (https://www.orfg.org/).

IV. Evaluation

There are a variety of ways to evaluate person-centered awards, and finding the right indicators to measure the needed change is key. A number of promising practices are outlined below.

A 2020 survey of fellowship programs (N=82) conducted by ProFellow (with support from IREX) measured the most common ways in which fellowship programs are evaluated. Survey respondents reported that they use the following evaluative indicators: fellows' satisfaction (90%); changes in fellows' self-perception as a leader or achieving professional goals (70%); long-term career trajectories of fellows (60%); host organizations' satisfaction with fellows (56%); how frequently fellows collaborate within their cohort or as alumni (45%); fellows' influence on their field of interest, policy and/or development of new programs (45%); and number or percentage of fellows who continue on in host organization or industry (43%) (Yadav and Johnson 2020, 15-16). However, 65% of respondents mentioned it was difficult to develop measurable indicators for impact evaluation, while 44% mentioned lack of time and 40% mentioned lack organizational capacity as challenges in conducting evaluations (Yadav and Johnson 2020, 16).

A. Evaluation During the Award Term

Once selection is made, providing support to grantees will assure success of the program as well as solicit feedback in real-time to make program adjustments. Case studies of various models include Howard Hughes Medical Investigators and National Institutes of Health support (Azoulay et al. 2009), The Evelyn and Walter Haas Jr. Fund's "5-Year Evaluation of the Flexible Leadership Awards" (Evelyn and Walter Haas Jr. Fund, 2013), and the Atlantic Fellows for Racial Equity (Klugman 2021).

The Haas Jr. Fund's Flexible Leadership Awards worked with grantees at the outset to set up a two-part dashboard with the organization's goals for leadership and for advancing the mission. It then relied on interviews, supplemented by documentation (financial reports, constituents served, other evaluations) and interviews with the plan consultant. All goals were evaluated as to whether they were missed, met, or surpassed (Evelyn and Walter Haas Jr. Fund, "5-Year Evaluation of the Flexible Leadership Awards" 2013, 10-11).

B. Post-Award Programs as a Facilitator of Impact Evaluation

Alumni programs are another way to stay in touch with awardees after a grant term ends, support their future endeavors, as well as collect data for ongoing impact evaluation. Atlantic Fellows in the TEKANO program in South Africa do a post-fellowship training for community members using what they learned; the evaluator (or program lead) observes it and also interviews community members about its effectiveness (Klugman 2021). This way, they triangulate data points to judge the short-term impact of the fellowship on the fellow. Social network analysis is also employed to understand the density of contacts made by Fellows or improve connections if there aren't significant changes during the program (Klugman 2021, 34-35).

The Ford Foundation, through the Institute for International Education (IIE), is undertaking a ten-year initiative to track the alumni of its International Fellowships Program. The IFP provided scholarships to individuals to study graduate degrees abroad then return to their home countries and dedicate themselves to improving conditions in their communities. The series of reports provide unique examples of longitudinal impact studies that can be undertaken when efforts are made to track and build relationships with alumni. The report series are available on the IIE website (https://www.iie.org/research-initiatives/ifp-alumni-tracking-study/).

C. Equitable Evaluation Practices and DEI Frameworks in Evaluation

Michele Lamont, in the book *the Lucky Few and the Worthy Many*, argues for interrogating the cultural and structural determinants of success. By cultural determinants, she refers to the taken for granted assumptions in what signifies excellence which may be the result of cultural homogeneity (2004, 117-121). Structural determinants refer to the factors that make some individuals more likely than others to rise to the top of their field. A fellowship program may have the most impact on the trajectory of those who don't already have what it takes to succeed.

The 2020 ProFellow survey reported that fellowship programs measure diversity through gender (75%), race and ethnicity (71%), and less so by field of work (46%), educational attainment (40%), nationality (39%), age (37%), sexual orientation (26%), military veteran (21%), people with disabilities (18%), US regional origin (18%), first generation college student (17%), socio-economic background (16%), citizenship (12%), others (7%) and religion (2%) (Yadav and Johnson 2020, 13-14). "Others" included political ideology, geographic location, foster care status, rural-urban community.

Looking at evaluation through DEI frameworks also questions whether the collection of data is always a neutral and objective practice. Evaluation represents a specific worldview that may not be shared by program communities of benefit (Dean-Coffey 2018). Neutrality can no longer be taken for granted.

Likewise, impact evaluations that are poorly designed and implemented may "distract and take resources from collecting data that can actually help improve the performance of an effort", argues Mary Kay Gugerty and Dean Karlan (2018, 42). CART principles (credible, actionable, responsible, and transportable) will help to find the right data to collect, to both serve ongoing monitoring and impact measurement (see *The Goldilocks Challenge* by the authors).

Randomized control trials alone do not provide enough information to predict future success or scale up; more information is needed about how the work affects outcomes or the contexts that result in success or failure (Schorr 2012, 52). Instead, what is needed is a shared results framework, evaluation methods matched to their purpose, draw on credible evidence from multiple sources, and identify the core components of successful interventions (Schorr 2012, 53).

A number of resources exist on DEI frameworks for evaluators. A report on "Considerations for Conducting Evaluation Using a Culturally Responsive and Racial Equity Lens" by Public Policy Associates (commissioned by the Kellogg Foundation) provides evaluators, who are usually white, with tools to recognize each community's own history and context. Culturally Responsive Evaluation and the Equitable Evaluation Initiative offer new principles to unpack definitions, assessments of merit, address culture and context, and co-designing measures in service of equity (Dean-Coffey 2018, 537.)

D. Measuring Impact on the Wider Society or Community

A survey found that many sponsors felt their prizes were successful at setting standards of excellence and influencing perception of a field, but that they were less successful at mobilizing talent or increasing skills. Seven levers create power to produce significant societal benefit (Bays et al. 2009, 27). Metrics to measure prize change levers are included in the McKinsey report (Exhibit 17, page 72).

A literature review of the various ways in which science funding can be determined to have a benefit to society is provided by Bornmann et al. 2013.

For PCAs specifically, evaluative measurements need to look beyond individual achievements for evidence of impact on organizations, audiences, groups, fields, disciplines, and communities (VanDeCarr 2008, 28). GrantCraft's report on "Grants to Individuals: Investing in People and their Communities" lists possible outcome-level measurements to include in evaluations (VanDeCarr 2008, 29).

When conducting interviews in communities, evaluators may need to build trust and social capital to increase response rates in marginalized communities and "hard-to-reach" populations. Granberry et al. (2017) explain how they structured research teams to nurture social relationships among the team, promoted learning and sharing of complementary knowledge and skills, and this effectively deployed social capital during the research.

E. Measuring Innovation

Measuring innovation is also a challenge. Azoulay et al. (2009) measures exploration (as a key part of innovation) through not just increased citations, but also use of novel keywords and research articles that "flop" or are cited by a more diverse set of journals. These indicators suggest that investigators are placing more risky scientific bets after their funding (Azoulay et al. 2009, 4-5).

How can the impact of science and research be measured? Article citations are not a useful measure of an academic scientist's success; Albert Einstein himself would have received a low H-Index score (Gingras and Khelfaoui 2020). Citations are not a good proxy to understand research output and impact (Harney et al. 2021).

Contribution analysis for science and research involves creating indicators for each stage of the logic model (Downes et al. 2019). Assumptions and risks can be built into the model, engaging

program staff and writing indicators in language they understand. Peer reviews can complement bibliometrics (Downes et al. 2019, 181-86).

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Appendix 3. Characteristic Initiative Goals and Results, with Corresponding Featured Activities, Impacts, and Evaluation Approaches

Note that rows are not mutually exclusive and reflect a tendency among peers that builds progressively more ambitious programs. Evaluation approaches are listed once to simplify presentation.

Focus of contribution	Long Term Goals	Value-Adding Activities Emphasized	Leading indicators and markers of successful outcomes	Evaluation Approaches and tools that may be particularly relevant
Individual contributor Foster capacity of scientists who will make important, influential contributions	Promote individual capacity and conditions enabling them to create and disseminate valued and applicable of discoveries and developments that answer important questions, fill knowledge or methodological gaps, contribute to solving problems	Provide resources that enable application: e.g., funds for specific projects, equipment Provide opportunities to strengthen skills and inform thinking: Education support; Mentorship for professional development; network exposure Help build influence capacity: Funds, training, networks, platforms for resource acquisition and dissemination Provide sustaining support over time, follow-up support for program of related research projects	Productivity + New or enhanced theories, insights, tools, and methods + academic products (papers, presentations) Influence + bibliometrics (e.g., g-, h-indices) + professional advancement (?) + funding/resources + expert recognition by professional societies, home institutions, independent panels + commercialization of products Application + Use of product + Problem improvement + Perceived contribution	Follow-up self-report interviews, questionnaires Expert, mentor interviews, questionnaires Pre-post/post-then- pre designs Quasi- or randomized experimental designs (e.g., assigning eligible candidates, following 2 groups)

Focus of contribution	Long Term Goals	Value-Adding Activities Emphasized	Leading indicators and markers of successful outcomes	Evaluation Approaches and tools that may be particularly relevant
Collaborative Leader Foster productive collaborations to advance collective contributions	Promote collaborations for creation, dissemination and application of discoveries and developments	Purposeful cohort composition Network promotion, cohort development Individual convenings, Communities of Practice, self-organized activities Multidiscipline exposure activities Alumni partnership for referrals, training, mentoring Collaboration/partnered project funding	Collaborative approach + contributions to cohort as leader, active participant, engaged follower + develops partnerships + valued, sought after as partner Productive Collaborations + collective efforts are Productive, Influential, Applied (see above)	Participative evaluation methods Cohort social metrics/network analysis – individual and program level volume, density Follow-up professional network analysis

Focus of contribution	Long Term Goals	Value-Adding Activities Emphasized	Leading indicators and markers of successful outcomes	Evaluation Approaches and tools that may be particularly relevant
Talent Developer Nurture and scale development of human capital in an inclusive, equitable field	Promote individuals, programs, and institutions that create enabling conditions for individual success and inclusive field strengthening	Workshops/Training in management, leadership, recruitment, support, cultural differences Coaching coaches, mentoring mentors Support for at-risk participants Partnering for targeted recruitment (e.g., engagement of specific institutions, affinity groups, and magnet mentors; engagement of "whole foundation")	Quality Talent Development + hires/prepares/strengthens + Quality manager, efficient + teaching, mentoring + commitment to hire/train/support underrepresented contributors Program achieving Inclusivity goals + Recruitment targets met + Perceived access to supports + Utilization of opportunities Participants nurturing leadership + commitment to field development + positioned to recruit, train + positioned to shape programs, policy + shapes home institution, field	Developmentally sensitive Application, Selection Analysis (e.g., matching criteria expected versus actual; blinded selection versus standard criteria) Support/Attrition Analysis Benchmarking/ normative assessment using other programs, field level statistics

Focus of contribution	Long Term Goals	Value-Adding Activities Emphasized	Leading indicators and markers of successful outcomes	Evaluation Approaches and tools that may be particularly relevant
Funder Infrastructure Strengthening Optimize management, administrative, staffing practices to support existing programs.	Promote conditions and capacities within the Foundation to support programming successfully	Program description, theory of change/logic model standards Cross-training in common program practices/qualities, concepts, management procedures Initiative-level developmental, formative, and summative evaluation Learning exchange, internal community of practice, application of learning Institutional memory efforts Branding design, analysis, promotion Anticipating Sustainability and Exit Needs through complimentary, coordinated or collaborative funding	Design Integrity + Template completion, consistency + Alignment of goals, time/resources, activities, and expected results Norms/Culture assessment + Staff perceptions, trust + Observed reflective practices, exchange of successes, challenges, changes	Enterprise-level developmental evaluation, staff surveys Integration of internal and external learning efforts Evaluation of evaluation External sentinel, collaborator, or other key informant survey

Appendix 4: Some Typical Tradeoffs in Composing Cohorts

Note that depending on program goals, some + could be a – and vice versa.

Similar area of work/sector	**Different area of work/sector**
(e.g., all academics or all policy experts) +Shared frame of reference +Shared challenges +More in-depth discussion possible +Potentially more helpful feedback/advice +Makes possible a more substantive, tailored set of sessions +Feeling of being among friends +/-Together in a common silo (pros and cons)	+New perspectives from other vantage points +Chance to cross fertilize and learn something completely new +Potential for more holistic thinking/solutions +Ability to forge cross-sector alliances -Can lead to surface/more superficial discussions -Hard to pick topics/level of entry that works for everyone +Growth through discomfort/challenge
Similar discipline/educational background	**Different discipline/educational background**
+Can assume certain level of knowledge, making for easier planning +Language of discipline understood +Allows for more in-depth discussions -Can share the same biases/silos -Reinforcing rather than broadening world view	+Learn from one another > innovation +See things from a new perspective -Could reproduce/reinforce hierarchies to the detriment of those with less or different education -Some participants bored, others confused -Lack of shared frame of reference makes in-depth conversation difficult -/+Disciplinary jargon needs to be unpacked
Same county/region	**Different country/region**
+Potentially shared frame of reference +Ability to form relationships that can be the basis of work together -Potential to recreate national hierarchies/ inequalities; can't assume national solidarity and understanding +Potentially easier to develop shared work agenda and to work together after award	+A chance to learn new ideas and approaches that have worked elsewhere +Potential to build transnational/global solidarity -Cultural misunderstandings more likely -Differing cultural norms may affect who participates and how

Similar social class or race/ethnicity	**Different social class or race/ethnicity**
+For some, a more comfortable "safe" environment in which they can be more honest/authentic +Bonding with cohort potentially easier -Growth is uncomfortable and prioritizing removing all friction could be limiting +/-Racial and class solidarity not always a reality (pros and cons) -Social hierarchies reinforced	+Exposed to new perspectives and experiences +Reflects the reality of a diverse world -Some feel marginalized/excluded -Risks of tokenism (speak for/defend their group; voice not heard; saps energy from learning and growth) -Higher stress experience for some -Voice of some limited +/-Potential for interactions that evoke painful experiences (pros and cons) +Possibility for rethinking social hierarchies
Similar capacity to benefit from and contribute to common effort (e.g. all junior or all mid-career) +Easier road to group cohesion +Comfortable give and take achieved sooner +Shared career challenges may lead to quicker bonding +Similar experience level may lead to less questioning and reaching faster conclusions +Two way street may lead to accelerating collaboration +Collaboration may become deeper as similar career stage participants journey together -/+Potential for competitive environment to emerge (pros and cons)	**Different capacity to benefit from and contribute to common effort** (e.g. different career stages) +Heightened capacity to learn and grow as a result of peer interaction +Opportunities for mentoring can lead to experience and knowledge sharing that creates enduring bonds and long term collaborations +Easier to organize teams and assign roles as strengths and weaknesses more evident -Collaboration may take longer to gel +Unexpected or surprising questions can be expected +Learning from diverse perspectives and career experiences may be more likely -Unevenness may reinforce stereotypes

Appendix 5: Additional Strategies and Resources for Broadening Participation

The challenge of how to incentivize diverse applicants, some of whom are hard to reach, have limited access or routinely read themselves out of opportunities was much discussed by participants in this study. Addressing these enduring and interrelated aspects of diversification goes beyond the strategies outlined in Section III of the Landscaping Report such as targeted recruitment strategies, changing application questions and processes, training for applicants and selection panels and selecting for diversity when merit ratings are similar. These are necessary but not sufficient to achieve diversity in applicant pools and awardee cohorts that corresponds to diversity in fields.

This appendix looks at additional approaches interviewees are using, or considering, that relate to PCA program design, navigating the legal landscape and offering programs specifically targeted to underrepresented groups. A list of some of the best-known programs dedicated to supporting underrepresented groups follows this analysis. Should a funder decide that the best strategy for incorporating diversity into their sector is to develop a pipeline program dedicated to that strategy, this menu of program models can stimulate conceptual thinking. In addition, such programs have the potential to create pipelines of diverse applicants for post graduate PCA-style programs by offering fertile ground for recruitment into PCA applicant pools. They are also resources for exploring additional strategies to incorporate diversity into PCA programs.

PCA Program Design Strategies to Improve Diversity

In order to improve diversity, interviews suggested it is important to understand and alleviate structural impediments that lead to poor applicant numbers, failure at the point of selection, and retention or underperformance as grantees. Good data can promote understanding of the characteristics of who is, and isn't, currently accessing, applying, succeeding at the initial or final selection stage, completing, or benefiting from the program or from specific opportunities within the program. Once it is clear what is happening, why it is happening can be explored. While a number of peers identified the need for improved data in order to better understand and better design programs and processes that alleviate structural impediments, doing such a study remains largely aspirational.

However, despite only a notional sense of what might be happening, a number of peers have undertaken reviews of program design for potential impediments to inclusivity and are thinking about adjusting or adding elements to reduce barriers. Some suggest that involving current or alumni grantees in reviewing program design and implementation has assisted the effort to make the program more inclusive and flexible. Several interviewees have already made modifications that they hope will help create a more equitable environment and help encourage diverse applicants to apply, accept the award or be better able to participate in program offerings as grantees. Changes include providing funds to support travel for families, childcare or elder care costs during convenings or using leverage with nominating or

participating universities to develop consistent institutional leave policies that are equitably available to all faculty.[1]

Several programs are adding program elements that support applicants or nominees who are not chosen as awardees in recognition of the time involved in applying and to maintain a connection with potential participants in future activities. Some programs consider applicants as part of their broader community, sharing resources, keeping them appraised of announcements and inviting them to relevant events. Others are compensating applicants monetarily for the time spent on application preparation. For example, one program provides access to several readings and tools used in the program and circulates applicant information to foundation colleagues hoping to create opportunities given applicants' talents, interests and availability. They are also considering whether to convene nominees who are not selected given the importance peer convenings play in awardees' personal and professional growth. *Appendix 2, Literature Review, II. Recruitment, Selection and Creating Cohorts, B. Promising Practices in Selection, p. 3-4 provides references for additional suggestions.*

Strategies for Navigating Legal Considerations

While legal issues are a concern and are expected to become more so with anticipated changes in the laws stimulated by the political environment, most peers are navigating the issues in ways that enable them to seek diversity in their PCA populations while avoiding running afoul of federal or local laws. One interviewee who is an expert in this area suggested that the legal terrain should not be seen as an impediment to achieving diversity goals but as a "design parameter" to be considered at the outset when program and processes are being devised and as the program is revised over time. This should be done with sound advice from a specialized legal firm knowledgeable about the higher education sector. To encourage thinking through how best to embed inclusive practices at the design phase, one peer organization requires a DEI plan as part of the board approval process for new programs. *Appendix 2, Literature Review, III. Broadening Participation, B. DEI and Accessibility Frameworks in Grantmaking, p. 5. See especially, GrantCraft's, "Grantmaking with a Racial Equity Lens" which emphasizes the value of building in DEI considerations at the very start of the design process.*

Interviewees described consulting with their lawyers routinely, in the normal course of their work, explaining what they want to achieve and working together to develop ways of implementing their programs to achieve their goals while staying within the laws that apply. Those interviewees with specialized knowledge of the legal terrain noted that a private foundation may use its own money to support diversity goals. However, if their grantees are public institutions or receive federal funds (or in some cases State funds), then the grantees may run into problems if they use certain kinds of diversity, such as race or gender, as criteria. To navigate this issue, in some cases, peers work through third party administrative

[1] Leave policies commonly exist for institutional grants and sabbaticals. However, many universities do not have standard leave policies for individual awards, grants and fellowships. One organization in the study has been working to change that and this idea is beginning to gain traction.

organizations that then directly fund individuals rather than providing grants to federally funded universities that then pass the funds to individuals.[2]

Dedicated Programs as a Diversification Strategy

Developmental programs dedicated to increasing the numbers of high quality minority participants and their success rate in various academic fields, have been a feature of the higher education landscape since at least the 1980s. Interviewees in this study represented several such programs. Pipeline programs typically work through a set of selected institutions and may begin at the undergraduate or graduate stage.

They usually include financial support, guidance, training and mentoring during the initial scholarship period. Mentoring is seen as a particularly key component for successful retention and graduation. One interviewee's program organizes an annual conference for doctoral students that focusses specifically on reducing alienation and isolation, addressing barriers to retention and advancement, building confidence and both being mentored and becoming good mentors. The conference is supported by multiple foundations that fund in this area. They also encourage their PCA grantees to attend the conference or even make it a condition of the grant.[3] Collaborating across the field in this way enables one organization to specialize in a way that adds value to the whole field and reduces duplication.

Alumni communities are an important feature of the dedicated programs in this study. Strong programming for PhD alumni communities continues to empower, support, connect, promote collaboration and develop skills and knowledge that enhance long term professional development to advance careers over a lifetime. Alumni assist in planning programming which typically includes small grants and/or awards and convenings such as retreats, workshops and conferences. The latter are designed to provide opportunities for focused networking and skill development in areas such as managing the isolation of being among the few faculty of color in a department or perhaps on an entire campus. Navigating post graduate career stages with emphasis on overcoming the particular barriers minority faculty face in tenure and promotion is also a common feature. Being mentored and learning to mentor the next generation continues to be seen as critical to success by many interviewees and forms a significant part of alumni programming.

As programs and their alumni have matured, some interviewees noted that their programs have evolved from a sole focus on capacitating individuals and their champions in order to increase the number of minority PhDs, to include pathways to institutional change. Leadership training is one area that has become part of alumni programming in recent years in recognition that institutional change will require minority faculty to achieve and succeed in leadership positions. Another example described by an interviewee illustrates a different pathway to institutional change. Beginning in the mid-1990s this program's goal has been to diversity the

[2] Both Federal and State laws (such as CA Proposition 209) may apply. This discussion should not replace seeking legal advice from a knowledgeable specialty firm such as *Education Counsel*.

[3] Some programs also organize events for current grantees or alumni in conjunction with the main doctoral student conference.

PhD degree holding workforce through supporting university based efforts to improve recruitment, retention and PhD graduation rates for underrepresented minorities in STEM. The program began with a focus on working with individual champions who nominated their students and applied for the supporting grant. Reviewing program design and results over time, they recognized that supporting individuals and their champions was necessary but not sufficient to achieve their retention and graduation rate goals. Today the program also seeks to make the institutional environments and systems that surround promising students and their faculty mentors more enabling and supportive by engaging multiple departments to work together to create community and extend influence throughout institutional systems such as admissions. This program currently works with a limited number of universities but based on enhanced graduation rates for supported students in these pilot cases, the intention is to expand the number of institutions in the program.

Examples of Programs Dedicated to Providing Support for Underrepresented Groups

1. **Academic and Research Leadership (ARL) Network**: supports minority research-focused engineers with an annual leadership symposium and member directory. **Link:** https://arlnetwork.org/
2. **Atlantic Fellows for Racial Equity (AFRE):** provides funding and professional development tools for professionals of diverse backgrounds from South Africa and the United States working to address root causes of anti-Black racism and white supremacy. **Link:** https://racialequity.atlanticfellows.org/
3. **Institute for Broadening Participation**: NSF-funded initiative with mission to increase diversity in the STEM workforce by designing and implementing strategies to increase access to STEM education, funding, and careers. **Link:** https://beta.nsf.gov/funding/initiatives/broadening-participation
4. **Leadership Alliance**: focuses on STEM fields offers summer research opportunities to URMs at the undergraduate level. **Link**: https://theleadershipalliance.org/
5. **Mellon Mays Undergraduate Fellowship:** provides network and financial support to undergraduates belonging to underrepresented minority groups. **Link:** https://www.mmuf.org/
6. **Mellon Mays Graduate Initiatives Program**: managed by the Social Science Research Council, works with Mellon Minority Undergraduate Fellowship alumni to support those at the graduate level and beyond. **Link:** https://www.ssrc.org/programs/mellon-mays-graduate-initiatives-program/mellon-mays-predoctoral-research-grants/
7. **MentorNet:** seeks to provide all STEM students in the US with access to effective mentorship and fosters a prevalent culture of mentoring in STEM that empowers individuals to persist and succeed in their fields. **Link:** https://greatmindsinstem.org/mentornet/
8. **National Academies Ford Fellowship Program**: continues programming beyond the PhD to offer professional development opportunities and peer-to-peer mentoring and incorporates graduated alumni as mentors and role models for current program participants. **Link:** https://sites.nationalacademies.org/PGA/FordFellowships/index.htm

9. **National Center for Faculty Development and Diversity**: membership-based organization offering professional development training, campus workshops, and mentoring programs to its subscribers. **Link:** https://www.facultydiversity.org/
10. **National GEM Consortium**: shepherds a given cohort by creating a pipeline for underrepresented minorities in STEM. **Link:** https://www.gemfellowship.org/
11. **Obama Foundation Fellowship:** Two-year, non-residential program to support community leaders in a variety of disciplines aiming to amplify the impact of their work and inspire a wave of civic innovation. **Link:** https://www.obama.org/fellowship/
12. **Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) Program**: virtual community aiming to foster the development of a vibrant national network of STEM mentors. **Link:** https://paemst.nsf.gov/
13. **Roger Arliner Young (RAY) Diversity Fellowship:** provides funding support for recent minority college graduates pursuing careers in conservation and clean energy. **Link:** https://rayfellowship.org/
14. **Sloan Indigenous Graduate Partnership:** provides funds to expand university efforts for supporting, recruiting, and training American Indian/Alaska Native students in STEM graduate programs. **Link:** https://sloan.org/programs/higher-education/diversity-equity-inclusion/sloan-indigenous-graduate-partnership
15. **Sloan Minority PhD Program:** aims to create diverse, equitable, and inclusive pathways to and through funding STEM PhD graduate education. **Link:** https://sloan.org/programs/higher-education/diversity-equity-inclusion
16. **Sloan Scholars Mentoring Network (SSMN):** managed by the Social Science research Council, provides students from underrepresented groups access to internal and external resources to support the attainment of career and leadership goals **Link:** https://www.ssrc.org/programs/sloan-scholars-mentoring-network/
17. **University Centers for Exemplary Mentoring (UCEMs):** Sloan-funded program managed by the National Action Council for Minorities in Engineering that focuses on recruitment, retention, and academic success of underrepresented minority doctoral students**:** https://www.nacme.org/engage-graduate#MPHDprogram
18. **Southern Regional Education Board (SREB) State Doctoral Scholars Program**: provides multiple layers of support (including financial assistance, research funding, career counseling, job postings, etc.) for minority doctoral students. **Link:** https://www.sreb.org/doctoral-scholars-program

Appendix 6: Specialized Evaluative Tools and Designing Grantee Feedback to Probe Program Progress

Evaluation Approaches and Tools for Specific Purposes

Beyond the **core toolkit**[1] outlined in the main body of this report, interviewees described a range of approaches and tools in use for specialized purposes. In some cases, program staff require annual or periodic open ended activity reports by grantees to supplement annual surveys with qualitative information. Structured reports or even qualitative journals have been used when staff do not have the time or resources to conduct and analyze annual surveys. However, interviewees who have utilized this approach have found it valuable for gaining a rich understanding an individual's progress, but very cumbersome to aggregate in any meaningful way to uncover trends or understand the progress of the cohort or grantee population as a whole.

For several peer organizations, purposeful quantitative and qualitative longitudinal studies in which some questions remain the same and others change over time form the centerpiece of long term evaluation efforts. A longitudinal study has advantages over the more commonly used, periodic, cross-sectional annual survey as it follows the same randomly or purposefully chosen representative sample over time to provide greater statistical power to detect effects, stability and change in individuals and to enable aggregation of change for groups and extrapolation to the larger community from which the sample was drawn. Longitudinal surveys are more difficult to implement as getting the most power requires tracking down the same respondents each time the survey is administered or replacing those lost with similarly chosen new respondents as well as assigning individual identifiers to match respondents over time. An annual survey has less statistical power but is easier to implement. It can be analyzed serially to understand change for individuals who choose to participate consistently but can only provide a notional sense of trends for cohorts or the overall population of grantees because the sample each year is different as respondents self-select and new cohorts enter the population.

Longitudinal studies appear most likely to succeed in settings where the social capital of the program is strong. Usually this is the case when a program has invested in a vibrant alumni community and related programming that engages alumni grantees over the long haul. If time, resources and staff effort are sufficient to track down former grantees and build trust and social capital retrospectively, it is possible for an evaluating organization to engage former grantees in longitudinal evaluation despite the lack of an alumni community. As a cautionary tale, one interviewee described both the difficulties and upfront time involved in finding, building relationships and engaging former grantees several years after the program to be evaluated had closed without a strong alumni community in place. Only after those efforts were moderately successful could this longitudinal study gain traction. Conducted over a decade, this study consisted of three panel surveys at two-five year intervals with qualitative interviews

[1] Periodic qualitative touchpoints with grantees, systematic staff reflection, post event feedback, annual surveys, exploration of publications and citations.

conducted between administrations supplemented the quantitative data and help to refine instruments. Discussion of the effort and the substantial results that can be achieved from undertaking a purposeful longitudinal study focused on impact can be found at https://www.iie.org/research-initiatives/ifp-alumni-tracking-study/ and in *Appendix 2, Literature Review, IV. Evaluation, B. Post-Award Programs as a Facilitator of Impact Evaluation, p.8. D. Measuring Impact on the Wider Society or Community, p. 9-10 provides references for building trust and social capital to increase response rates.*

Network analysis is used in cases where network expansion or collaborations are an important part of the program's theory of influence and in depth interviews or focus groups are used by some interviewees to triangulate with surveys, explore questions raised by survey data and gather compelling narrative stories. In cases where the program intends grantees to apply what they have learned in educational or community settings, demonstration projects that specifically ask grantees to validate what has been gained from the induction period are important ways of showing outcomes and impacts on grantees. Programs that are concerned with grantees' personal growth, leadership development or institutional change also use personal and team development tools such as journaling, 360 organizational interview assessments to understand contextual enablers and inhibitors of a grantee's work environment and assessments that help individuals understand their individual styles of interaction and patterns of behavior.[2]

Designing Grantee Feedback to Probe Program Progress

Interviewees offered many insights into the focal areas and question topics that they feel help to reveal indications of grantee progress towards a program's desired outcomes and impacts. These areas and topics then guide the development of specific questions to ask grantees when seeking feedback on surveys or in interviews.

During the initial program period or following particular events,[3] participatory feedback sought tends to focus on areas that will provide information to improve the program and understand the relationship between participant expectations, their satisfaction with the content and implementation of the program activity, the value they feel they gained and the extent to which intended learning outcomes are being achieved. The year-end survey following the initial grant period will typically cover areas such as overall satisfaction with program components and change during the program year in relation to the baseline or benchmark that was constructed to determine grantees' pre-program knowledge, skills and behaviors related to the outcomes the program intends. Subsequent annual surveys and longitudinal studies focus on the longer term impact of the program experience on grantees and of grantees on their work environments. These surveys typically include focal areas such as program contribution to change in awardees' careers, research output, recognition, networks and impact on fields and institutions.

[2] Tools such as Wiley's DiSC or Myers Briggs assessments were mentioned.

[3] For example, workshops, modules, conferences that are part of the program experience.

While specific questions and their precise framing depend on a given program's goals, activities and theory of change, interviewees often mentioned several general topics that tended to guide the development of specific questions. For example, there are typically sets of questions about how the program is contributing to bending the arc of the grantees' professional trajectories with focus on ways the individual has grown and changed; whether learning or change in research direction as a result of the initial award fades or endures over time; and ways that learning is being applied in the grant products or subsequent research. More specific questions may probe whether a new line of work or interdisciplinarity embarked on during the grant period is continuing, if additional innovative work is taking place and whether new funding has been obtained, awards received or additional opportunities engaged. Depending on the grantees' fields, questions may ask about startups created or patents pending.

If program goals and programming include emphasis on institutional or field level change, additional questions may concentrate on how the grantee is acting as an agent of change and innovation within those broader arenas. To assess the value and impact of programming for alumni and alumni networks, there may be questions about how alumni networks are being engaged, expanded and utilized to advance careers or facilitate collaboration. The focal areas and question topics identified by interviewees dovetail with the findings of a 2020 survey of fellowship programs conducted by ProFellow. *See Appendix 2, Literature Review, IV. Evaluation, p. 7 for reference and findings.*