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## Career Development Institute with Enhanced Mentoring: A Revisit

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### Abstract

**Objective**—The need for innovative methods to promote training, advancement, and retention of clinical and translational investigators in order to build a pipeline of trainees to focus on mental health-relevant research careers is pressing. The specific aim of the Career Development Institute for Psychiatry is to provide the necessary skill set and support to a nationally selected broad-based group of young psychiatrists and PhD researchers to launch and maintain successful research careers in academic psychiatry. The program targets such career skills as writing, negotiating, time management, juggling multiple demanding responsibilities, networking, project management, responsible conduct of research, and career goal setting. The current program builds on the previous program by adding a longitudinal, long-distance, virtual mentoring and training program, seen as integral components to sustaining these career skills.

**Methods**—Career development activities occur in four phases over a 24-month period for each annual class of up to 18 participants: online baseline career and skills self-assessment and goal setting, preparations for four-day in-person workshop, long-distance structured mentoring and online continued learning, peer-mentoring activities and post-program career progress and process evaluation. Program instructors and mentors consist of faculty from the University of Pittsburgh and Stanford University as well as successful past program graduates from other universities as peer-mentors.

A comprehensive website facilitates long-distance activities to occur on-line. Continued training occurs via webinars every other month by experts discussing topics selected for the needs of each particular class. Personally assigned mentors meet individually bi-monthly with participants via a secure web-based “mentor center” that allows mentor dyads to collaborate, share, review, and discuss career goals and research activities.

**Results**—Preliminary results after the first 24 months are favorable. Almost uniformly, participants felt the program was very helpful. They had regular contact with their long-distance mentor at least every two months over the two-year period. At the end of the 2 year period, the

majority of participants had full-time faculty appointments with K-award support and very few were doing primarily clinical work.

**Conclusions**—The longitudinal program of education, training, mentoring, peer support, and communications for individuals making the transition to academic research should increase the number of scientists committed to research careers in mental health.

### Keywords

Career Development; Careers in Psychiatry; Academic Careers

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## Introduction

In 2009 we reviewed our initial experience with our Career Development Institute (CDI) for Psychiatry, in which we sought to provide early career investigators with skills to local and national issues in academic research [1]. The evaluation of the first four classes led us to conclude that the acquisition of survival skills in an environment “without walls” was contributing substantially to young investigator’s continuing commitment and enthusiasm to follow a research pathway. In 2015, the overall environment has not changed and major challenges and barriers remain for early career investigators. It is crucial for them to learn how to negotiate their individual pathways with appropriate mentoring and continuing skill acquisition. Indeed, the present Career Development Institute for Psychiatry (CDI) program specifically targets the comprehensive skill sets that early career researchers need to successfully establish and maintain an independent research career [1–4]. The transition to independent scientist (e.g., from postdoctoral fellow to faculty position) is a particularly high-risk period for attrition from the research career path [1,5,6]. This transition from a more passive student role to a more active faculty/managerial role requires the largest career shift. A number of factors influence career survival at this juncture, and mentorship and specialized training (e.g., advanced statistics, clinical research methods) have been identified as particularly influential for career development [5, 7–9]. The critical role that these career skills play in the retention and advancement of research careers has been increasingly recognized [10–12]. Scientists face a variety of challenges launching their research career, including negotiating the terms of their position, setting-up and managing their own research lab, securing funding, and juggling the various administrative and clinical demands on their time [13–15].

Based on the first seven years of CDI experience [1], recommendations from CDI participants, alumni, faculty, research conducted with the CDI Class of 2009 [17], and the experiences of our research training colleagues in Pittsburgh, Stanford, and nationally, major adjustments have been made to the program both in content and structure. The program is now 24-months in length, incorporating a 20-month longitudinal follow-up period comprised of bimonthly training via webinar and bimonthly one-to-one structured mentoring sessions. The four-day in-person workshop, critical to increasing the likelihood for future peer and CDI faculty research collaborations and for peer-to-peer and peer-to-faculty bonding, is maintained with enhancements to the core content reflecting additions of the follow-up period (see Figure 1).

Feedback from past CDI participants indicated that they desired more follow-up outside the formal in-person workshop structure than simply annual meetings. Thus, the follow-up program was restructured to include long-distance mentoring, continual online learning experiences, goal follow-up, inclusion of peer mentors drawn from the CDI alumni, and enhanced communication via website discussion rooms. This system is not intended to replace local mentors, but to augment the existing network.

## Methods

The program is geared toward individuals at the critical transition point between the completion of research training and initial faculty appointment or very early in the initial appointment. Hence, individuals recruited are in their last year of psychiatry residency training, are advanced postdoctoral students (T32 program or equivalent), or are in their initial faculty position for less than two years.

The CDI faculty consists of experts in various fields of psychiatry to reflect the diversity for which we are aiming in the composition of the participants. Both the University of Pittsburgh and Stanford University contribute a cadre of experienced faculty mentors selected from almost 250 full-time faculty across these two departments. This group is supplemented with other experts not represented in these two departments specifically, for example, by Prof. Schneider from Marquette University, an expert in negotiating skills. Faculty selected to participate meet the following criteria: (1) recognition as outstanding mental health scientists in psychiatry subspecialties, neuroscience, services research, and relevant disciplines; (2) a track record of successful mentoring; and (3) being experienced role models in the conduct of research.

Peer faculty advisors are selected from previous CDI classes and represent colleagues just a few years ahead of the current class in their research career trajectory. These younger alumni faculty are particularly compelling role models because the trainees may see them as more recently succeeding in the path they themselves are following. The peer advisors also have an early career opportunity to provide mentoring to others and to participate in training and education at a faculty level.

As each new CDI class is selected, potential mentors are identified for each participant. Recommendations are based on the career stage of the participant, research interests as described in the application, narrative summary, short- and long-term goals, and specific research interests. Each participant is matched with one mentor and each mentor has only one mentee per CDI class. Given the large number of mentors to choose from, no one mentor has more than two mentees during any 24-month class period.

The mentors/mentees that are paired in Phase 2 workshop meet every two months via phone or video chat through the CDI website, to review the participant's progress toward the goals that were established. This is the participant's opportunity to seek continued advice, request critiques on drafts of papers or applications, or work on a scientific collaboration. They can modify goals based on changes in the participant's circumstances (for example, grant rejection, career move, birth of a child) and document the reasons for lack of progress or

changing goals. The structured mentoring does not preclude mentor/mentee interactions outside the structured two-month on-line meeting. In fact, such interactions are encouraged and the occurrence of such are captured in the on-line evaluation conducted every two months.

At the completion of each on-line mentoring session, each individual independently completes an on-line evaluation of the mentoring session. Mentees indicate via checklist the topics covered: manuscript writing, grant submissions, negotiating, and mentoring. They also rate the qualitative dynamics of the discussions regarding progress toward goals, circumstances that are challenging their progress toward those goals, the degree to which their mentor offered constructive feedback, and the degree of overall satisfaction with the mentoring session. The mentor rates the degree to which the mentee was prepared for the session, the degree to which the mentee was able to describe current challenges such that the mentor was able to offer meaningful advice, and the degree of overall satisfaction with the mentee's performance to date. All data is captured for continued analysis and evaluation (for example, progress toward goals, frequency and length of mentoring sessions).

The post-session mentoring evaluations are continually reviewed to ensure that the pairing is going well and that participants are making progress toward pre-established objectives. We recognize that not all mentor/mentee pairings will work out. When necessary, an intervention will be made with the mentor, mentee, or both to ensure that the mentee is getting maximum benefit from the mentoring experience. Interventions may include working with the mentor on mentoring skills, talking one-on-one with the mentee or with the pair about the problem, or re-pairing the mentee with a different mentor. Informal follow-up phone calls are made every six months or as necessary with the mentees to check on progress.

Participants are expected to attend pre-scheduled, one-hour webinars every other month during the 20-month follow-up period via web conferencing. The webinars are real-time interactions with the presenter and participants, which help facilitate discussion, clarify important points, and helps the participants shape the webinar. Speakers for each session tailor their presentation to the needs of each class and determine whether materials need to be reviewed beforehand, in which case these are posted online for review prior to the meeting. Immediately following each webinar, participants complete an on-line evaluation to assess the helpfulness of the event to their current situation and to their overall career.

## Results

The sixteen members of the Class of 2012 for the Career Development Institute for Psychiatry were selected from 66 applicants, bringing the total number of CDI participants to 147 since the inception of the CDI program in 2004. Of these sixteen participants, five are MDs, six are PhDs, four are MD/PhDs, and one participant is an MD/PhD candidate. Two participants are assistant professors, six are postdoctoral fellows, five are residents, and three are instructors.

At the end of the two-year program period, fourteen participants currently hold traditional academic appointments and two are doing primarily clinical work. One participant holds an adjunct faculty position and is the director of a low income mental health clinic and serves as a consultant to the United Nations. Another participant moved from an academic appointment and a career development award to a position at one of the National Institutes of Health. To date, nine have received promotions to Assistant Professor during the course of the two- year CDI experience. Of the sixteen, five have moved to different institutions. In respect to external funding, eight have NIH K awards: two received K23 awards just as they began the CDI, one had a K12 as the CDI began and five received new K23 or KL2 awards during the two-year CDI period.

With respect to the bi-monthly webinar program, most (fourteen) expressed satisfaction with the every bi-monthly schedule of programs. Two preferred a monthly webinar series to keep more connected to classmates, but recognized that monthly series would be hard to manage given individual work schedules. The chosen topic areas were felt to be appropriate (Table 1, Webinar topics). Several mentioned being more engaged when materials were circulated prior to the webinar, and in general they enjoyed techniques such as polling to increase interactions. For class members who were implementing grants, they appreciated the session on how to run a research project and others recommended practical sessions on topics such as negotiating a faculty appointment, grant writing, short and long-term goal setting, how to get involved with editorial reviewing, and appointment to NIH study sections. However, several participants mentioned that certain seminars seemed less relevant, depending on their trajectory at the time. The class recommendations included the following: 1) making the sessions more interactive, including submissions of questions ahead of the seminar (which has been implemented with newer classes since the class of 2012), 2)-structuring the webinars so that forty minutes was devoted to the session and twenty minutes of networking to get status updates from the class. The class also shared their ideas for additional webinars, including sessions on statistical methods in imaging, with particular interest in obtaining strategies for handling small subject numbers in imaging studies.

Recommendations on the webinar series has led to changes in topic areas and design of the presentations. We are exploring the possibility of creating an “open” webinar for the class only, so they can meet as a cohort to give and receive feedback/ideas and share successful grant applications. We have arranged Google groups for each class to facilitate communication and coordination of informal meetings at professional meetings, such as the Society of Biological Psychiatry and the American College of Neuropsychopharmacology.

With regard to long-distance mentoring, the class recommended time at the workshop devoted to the mentor-mentee relationship with specific guidance on how to structure contact. The class used the CDI website video chat platform technology predominantly to schedule their mentor appointments and survey completion. Two mentor/mentee pairs fully used the platform features. More typical methods of communication included use of email of documents, phone conversations, Skype, and interactions at meetings including the American College of Neuropsychopharmacology (ACNP), Society of Biological Psychiatry (SOBP), New Clinical Drug Evaluation Unit (NCDEU) and specialty meetings. Many followed the suggested bi-monthly meeting schedule, but in some cases, the reality of the

schedule was driven by schedules of both mentees and mentors, and heavy clinical responsibilities of some made it difficult to adhere to a more structured schedule. Additionally, the frequency of contact also was driven by grant applications. Several individuals utilized their mentor to read drafts of proposals and had several intense interactions over a short period of time driven by the urgency of the grant deadline. Overall, mentees mentioned greater success of mentoring sessions when there was a focused agenda.

The most successful mentor/mentee relationships appeared to be among those with similar academic interests. Close partnerships and collaborations have developed, ranging from visits to mentor laboratories/clinical research settings to the development of symposia at professional meetings, manuscript collaborations and advisor/consultant roles on funded grant applications. Those with a strong team of local mentors appreciated having an independent long distance mentor who could provide objective insights and provide more global academic career advice. As some class members contemplated major decisions about academic promotions and institutional moves, they turned to their long distance mentors as well as the senior CDI directors for advice and counsel.

There was a strong appreciation for these recommendations on academic planning. Those individuals who had a team of strong local mentors appreciated having an independent mentor who could provide objective insights and provide more global academic career advice. They stressed the importance of having an independent mentor, and several liked having an intermediate level mentor, especially when they had good senior-level mentors at their local institutions. One of the peer advisors advanced the concept of mentors as a 'virtual' board of directors for a mentee's life, thinking of them as a SWAT team with different areas of expertise. Mentors can provide technical, functional, grant management strategies, objectivity on global career issues and potential marketing strategies regarding academic positions. This concept is in line with our overall thinking about the levels of mentorship. At a more senior level, we are seeking the development of a designated long-distance mentor who can address, on a periodic basis, a mentee in a different institution. On a secondary level, we are seeking to involve former graduates of the CDI program (i.e., peer faculty) who are beginning to serve as mentors themselves and can provide a more current picture of developing one's self as an up-and-coming researcher in psychiatry.

## Discussion

Based on the results of the 2012 class activity and ongoing observations, we have made a series of changes. These changes are reflective of the increased emphasis on continued acquisition of negotiation skills, peer-mentoring and implementing a multi-level mentoring structure, where the existence of both horizontal (between CDI class peers) and vertical (between CDI class members and CDI faculty) support further enhances the CDI experience and future academic success of CDI participants. These ongoing activities, including "booster" and alumni sessions at scientific meetings provide a "support net" which does not replace mentoring at their local institution, but augments local networks. The CDI program itself now has a sufficient number of alumni that at a number of institutions core groups of graduates of the program have developed ongoing small groups of investigators for peer activities, ranging from social contact to collaborative research activities. The navigation

challenges of young investigators are further facilitated by the continuation of activities beyond the “official” end of the 2-year program.

To ensure the continuation of these positive outcomes, we have enhanced the CDI in the several areas for the classes since 2013. First, we have added questions to the self-assessment survey performed in Phase 1 to learn more about the ‘home’ mentoring environment and what type(s) of long distance mentoring would be most helpful. Currently, the classes select between four and five CDI faculty and peer advisors for one-on-one meetings during the workshop. We ensure a face-to-face session with the proposed long-distance mentor. If this is not feasible, we will arrange a Skype or phone meeting during the workshop to introduce the dyad to establish a solid relationship early in the mentoring program. Additionally, during the four-day workshop we are implementing a more detailed discussion about mentoring developing guidance for both mentors and mentees on how to approach the long distance mentoring. The most effective sessions include an agenda with time spent on a progress update, determination of goals for the next session and an examination of the challenges that would impede progress. Several participants mentioned the importance of keeping the mentor engaged and found that a quick e-mail to communicate a goal achievement (paper accepted, grant approved for funding) kept the communication lines flowing. In regards to mentorship, we have enhanced the level and types of mentoring for CDI participants (see above), to ensure they are receiving the necessary support for optimal success. Overall, the feedback from this first CDI class with the 24 month experience is having an impact on subsequent classes, and we have made changes to the program to deal much more explicitly with mentor/mentee relationships. One of 2012 class members aptly captured his experience.

In conclusion, our approach to the development and advancement of the Career Development Institute has shown to benefit all participants. The members of each class continue to provide valuable insights to strengthen the program, helping shape the curriculum and content for the next class. Perhaps one of the best features of the CDI program is the ability to reshape and adapt to the current needs of each class. As these needs of early-career academics continues to change, so will the content and style of the CDI – evolving to meet the needs of successful young academic scientists.

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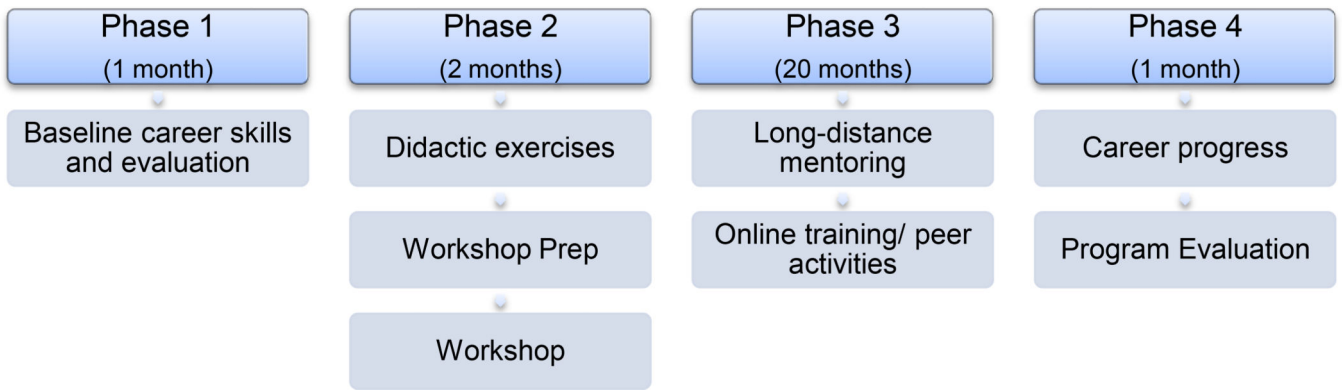
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### Implications for Academic Leaders

- Career development initiatives need to tackle the numerous academic, administrative and clinical challenges that young academics face.
- For the greatest success, it is becoming increasingly important to provide young investigators with more practical knowledge and training in career negotiation, administrative tasks, as well as funding opportunities and mechanisms.
- Providing the knowledge and training in these invaluable skills isn't enough. Mentorship, in addition to local mentor(s), and having an independent mentor can provide a young researcher with objective insight and external career advice that is desperately needed.
- Through the engagement and development of peer-mentoring strategies and networks, we provide an additional support system that fosters continued success and better science.



**Figure 1.**  
Longitudinal CDI Training Program

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**Table 1**

Webinar Topics

Career Planning	NIMH funding
Budgeting and Project Management	Negotiation
Grant Writing	Statistical Methods
Responding to Grant Reviews	Psychiatric Measurement

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