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Innovative Approach to Research Training: Research Colloquium for Junior Investigators

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Training future clinical researchers is clearly a critical issue for psychiatry and medicine. With the advent of new technologies, the development of new methodological approaches and study designs, and more sophisticated statistics, conducting research has become increasingly more complicated. How will a new generation of competent researchers be prepared to face these new challenges? Research training should be an essential part of all

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physician training. Because of the dearth of young investigators in our field, the importance of research training in psychiatry has been a focus of an Institute of Medicine report (1). Numerous avenues for research training have been explored (1). However, as the number of young researchers remains low, new approaches to research training and mentoring need to be explored.

There are basically two main areas of research training. A general one, focused on an often vaguely defined concept of “research competency,” includes the ability to understand research literature (research literacy) and learning to conduct simple studies. A more specific area of research training focuses on preparing young investigators for a research career and includes learning specific research skills such as molecular biology, brain imaging, or genetics; conducting more complicated studies; and obtaining research funding.

Most departments of psychiatry offer some education in the first area. However, only a small fraction of the departments of psychiatry in the United States are able to offer formal research training (2) that is focused on the preparation of young investigators for a research career. In addition, even the highest-ranked research departments with substantial resources do not possess expertise in all research areas. Two crucial questions in the development of a new generation of researchers are: How do we connect the pool of talented potential young researchers with experts in the field and/or mentors? How do we advise and help talented potential young investigators affiliated with nonresearch oriented departments of psychiatry to launch their research career? Frequently, contacts between young investigators and interested senior investigators are fostered at professional meetings (e.g., in a form of special sessions or travel fellowships). However, these programs are offered to a relatively small number of young investigators or are not well structured. It is critical to enhance the connection between young investigators and potential mentors and to focus and formalize the mentoring process.

During the mid-1990s, APA Committee on Research Training (CRT) conceived the idea of a yearly Colloquium for Junior Investigators (i.e., residents, research fellows, junior faculty members, and occasionally medical students). The Colloquium addresses, at least in part, the need to connect experts in the field with young investigators who can obtain much-needed advice about their research career, both regarding its scientific focus and issues of grantsmanship and academic advancement. The Colloquium, led by Ronald M. Rieder, M.D., of Columbia University, held its inaugural event in 1996. Since that time, the Colloquium has been chaired by John Greden, M.D., Ellen Leibenluft, M.D., Alan Schatzberg, M.D., Michele Pato, M.D., James Meador-Woodruff, M.D., and Charles B. Nemeroff, M.D., Ph.D.

What Is The Colloquium and How Is It Organized?

The Colloquium is a 1-day program for young investigators held on the Sunday of the APA Annual Meeting. It has recently been conducted at a hotel adjacent to the main APA venue. The Committee on Research Training selects three broad areas for each year’s Colloquium. The day begins with a few brief lectures about research and research funding. The participants then spend 2–2.5 hours in their first mentoring session. They are divided into groups of five, with two primary mentors—experts in the field. The leader of each of the three topic areas and the Chair of the Committee on Research Training also rotate through the groups. Junior investigators present their research projects (see below in “Who May Apply and How?”) and their career plans/goals (each discussion 45–50 minutes). In 2003, a group of senior statisticians were added to the mentors to fulfill an unmet need. In addition, in recent years experienced psychiatrists employed by pharmaceutical companies have been added as mentors because of their expertise in clinical trial design. The project and career

plans or goals are discussed by the two mentors, the other investigators, and by one of the statisticians. The major focus of the discussion is on the scientific value of the project, its feasibility and on the junior investigators' future goals: How does the project and the junior investigator's other research, clinical and teaching activities comport with these goals? Do such activities help build their careers?

The lunch period (food provided) is devoted to poster presentations by all junior investigators. The purpose is to leverage the expertise and feedback of mentors and junior investigators from other mentoring groups who view the posters and interact with the presenters. The poster session is followed by a second mentoring session allowing all five junior investigators in each group to present projects. The Colloquium concludes with a series of brief presentations by representatives from funding agencies (NIMH, NIDA, NIAAA, Veterans Administration, NARSAD, American Foundation for Suicide Prevention) about available funding and, at times, by concluding remarks and feedback from each mentoring group.

Who May Apply and How?

Junior investigators from the United States and abroad apply to the APA Committee on Research Training each fall. We have had several international participants (from Africa and Europe). Applicants must submit their curriculum vitae (CV), letter(s) of recommendation, a 250-word personal statement (including goals), and a 500-word abstract of their research proposal. Applications from previous attendees seeking further mentoring are encouraged, and one of the mentoring groups is usually comprised of these individuals.

All applicants are rated by all faculty members of the broad research area they applied to be part of. They are rated in three areas—strength of their research proposal, strength of their CV and of the CV of their sponsor, and their potential benefit from participating in the Colloquium. The final score and ranking is based on these three factors.

The Colloquium has grown a bit—the first Colloquium served 45 junior investigators and recently this number has increased to 54 junior investigators. A total of 684 young investigators have participated from 1996 through 2009. A total of 217 senior faculty have served as mentors during the last 14 years.

The information about the Colloquium and how to apply is available at <http://www.psych.org/MainMenu/Research/FellowshipOpportunities.aspx>.

Is There Any Financial Support for the Junior Faculty?

The original support was \$300 per participant. This was later increased to \$1,000 per participant to defray travel costs. Travel and lodging support is provided for non-APA member Ph.D. mentors and five statisticians. From 1996 to 2001, the Committee on Research Training relied on unrestricted educational grants from pharmaceutical companies as well as small grants provided by NIMH, NIDA, and NIAAA. The Colloquium has been funded by an NIMH conference grant (*R-13* see Sonis et al. [3]) since 2001. The American Psychiatric Institute for Research and Education (APIRE) served as the grantee.

Is the Colloquium Helpful to the Career Trajectory of its Participants?

The Committee on Research Training sent questionnaires to 377 participants who attended between 1996 and 2004 to determine the impact of the Colloquium on their careers and to obtain current career data. A total of 309 surveys were received, an overall 82% response rate. The questionnaire focused on several areas: effects of the Colloquium on the

participants' career trajectory; present participant position and activity; participant's efforts in obtaining research funding from both internal and external sources, and those sources; and research productivity in terms of presentations and publications. Additionally, in order to provide a more complete picture of the research productivity of Colloquium participants, the APIRE staff conducted an online search of NIH Project Reporter (formally known as CRISP) to ascertain the number of former Colloquium participants that had been able to secure federal funding to support their research training and studies. The APIRE maintains data on 679 participants (623 of them attended the Colloquium from 1996 through 2009, 56 of them more than one time). Findings are summarized in Appendix 1.

Whether the Colloquium had "a definite causal effect" is impossible to gauge. The results on research productivity need to be viewed with caution—it is probable that those who did not respond to this area had lower research productivity on average than those who did respond.

Conclusion

The Colloquium for Junior Investigators represents a unique approach to research training at a national and international level. It provides an opportunity for research project evaluation, career advice, cross-pollination, development of research and mentoring contacts, and even an avenue to identify future academic positions. The outcome data suggest that the Colloquium may address some shortcomings in the availability of research training/mentorship for many junior investigators, though the absence of a comparison group does not make definite conclusion possible. It is not clear whether the Colloquium does enough to draw or retain researchers who would have otherwise not been in the field. It is possible that it just provides additional nurturance to a highly motivated and selected set of young investigators. The Colloquium has been the first activity of its kind, but it fits into the recent and future activities of NIMH (e.g., NIMH workshop "Navigating your way through a successful research career," available at www.nimh.nih.gov) and other organizations (e.g., Latino mental health senior mentor national network [4]). However, the Colloquium is certainly not the only way or effort to draw trainees into research as demonstrated by numerous publications on research training (e.g., Abrams et al. [1] and Gilbert et al. [5]). Nevertheless, we hope that the Colloquium can become a template for activities of international organizations such as World Psychiatric Association, Collegium Internationale Neuro-Psychopharmacologicum, and European Psychiatric Association to increase the networking, cross-pollination, and mentorship in research training.

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APPENDIX 1. Impact of Colloquium and Participants' Achievements

I. Impact of Colloquium participation on career/present activity:

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- 73% learned methods that they have since implemented in their research.
- 87% helped in clarifying their research ideas.
- 89% benefitted in their research from mentors' own personal experiences providing them with practical suggestions which benefited their research.
- 81% continued with the plans that they had presented during the colloquium.
- 83% felt that participation had a very positive impact on their intention to pursue a research career.
- 63% had an academic appointment, 28% had a training position or student status, and 9% were in other positions, including industry and clinical positions (285 responders in this subgroup).
- 94% (of 285 responders) were continuing in research.

II. Research funding (participants responses):

- Two-thirds of the responders received extramural funding as a principal investigator, and 234 grants were reported (some responders from more than one source).
- Funding sources included: NIMH (23%), NIDA (7%), NIAAA (3%), other NIH institutes or SAMHSA (7%), VA (7%), NARSAD (21%), private foundations (e.g., American Foundation for Suicide Prevention, Stanley Foundation) (22%), and pharmaceutical industry (24%).

III. Research funding (CRISP, online search, data of 679 former participants):

- 205 of the former participants had a federally funded grant.
- 128 of the above 205 received a K-Award such as a K-08 or K-23 to initiate their research careers.
- 75 also secured funding through a grant such as an R-01, R-03, or R-04. Of the R-Awards recipients, 30 received at least two such grants, nine received three grants, and seven received four grants. Other funding sources were also used; 82 of those who received a K-Award were later able to get funding through grants such as R-01 or M-01.

IV. Papers and presentations (subgroup of 163 responders to these questions):

- 1,054 original research articles.
- 246 book chapters.
- 18 books as principal authors.
- 337 review articles.
- 109 case reports.
- 47% of had written at least 5 original research articles as first author.
- 1,192 oral or poster presentations at scientific meetings.