

Dear Members of the Selection Committee:

It is my extreme privilege and pleasure to write the strongest possible letter of support for Dr. XXX Career Development Award (CDA). Prior to explicating upon our proposed training program, institutional support or expectations of XX, please allow me to provide a 'picture' of this truly unique candidate. Quite simply, XX is the most intelligent, promising, productive and collaborative junior investigator that I have ever seen. He clearly represents the future, not only of cardiovascular outcomes research, but also of translating knowledge into practice as a means for transforming our healthcare system into a more efficient, equitable, evidence-based, patient-centered environment. I feel uniquely privileged to work with XX and believe that he will make numerous outstanding contributions that will elevate the quality of cardiovascular care. In order for you to appreciate my assessment, it is important to understand the unique experiences and philosophies of Dr. XX. XX has a remarkable moral compass that drives him to seek and disseminate truth. While XX is not the first applicant to the NIH CDA Program to have an extraordinarily elite education (XX Undergraduate and Residency Training, XXX and University of XXX Cardiology and Health Services Training), he may be the first to have balanced such training with numerous investments in social justice. XX has taken internships as an analyst and lobbyist for nonprofit organizations dedicated to ending world hunger, protested for better housing and healthcare for the homeless, launched rural health programs in Guatemala and devoted 4 years of his life to working in the XXX Health Service providing primary care on the XXX reservation. I believe that his sense of obligation to use his privileged education and formidable skills to contribute to society have guided his research experiences to date and will guide his contributions in the future. XXX is deeply committed to eradicating healthcare disparities (be they racial, economic, age or gender-related) by defining 'what works in medicine' and being sure that it is effectively applied to those who benefit and that society reap the savings by avoiding the use of treatments where there is little potential to benefit. Moreover, XX has a remarkable intellectual curiosity and an incisive mind. He is not enamored by 'theory' but seeks to understand the world around him by creatively, thoroughly and accurately analyzing observational data to understand 'truth'. While some scholars of his caliber may choose to leverage their insights and skills to serve as 'gadflies' within our profession, XX is not one of these. While sometimes his discoveries identify that practices that would seem to have terrific face validity (e.g. Rapid Response Teams to accelerate the evaluation and treatment of decompensating, hospitalized patients) are not, in fact, beneficial (citation); in other situations he finds that expensive therapies (e.g. Intra-Cardiac Defibrillators) are even more effective in patients in whom they are selectively underused (citation) and has advocated for their broader use in that situation.

To date, XX has received superb methodological training; having completed a Masters program in Biostatistics and Clinical Research Study Design at the University of XX. With this training, XX has demonstrated unprecedented productivity. While less than 2 years from graduating his fellowship, XX has already had nearly 30 peer-reviewed publications, almost all as first or senior author. These have been published in the most prestigious journals, including the New England Journal of Medicine, JAMA and Circulation. The importance of his research questions and the methodological rigor with which he addressed these challenges, was recognized by many within our field. To my knowledge, XX is the only trainee to have ever been chosen as a XXXX. He was the recipient of the highest award for junior

investigators by XXXXX. The analytic and writing skills that he has developed to date, coupled with his interests to broadly understand which interventions provide the greatest 'value' in patients, could not be more timely. Our country is in a healthcare crisis, one in which many of our society can not get access to care, while others are over-treated to the point of cost-inefficiencies, iatrogenesis and worse outcomes. If the United States could learn from investigators, like XX, which patients are most appropriate for treatment, then better access, reduced disparities and better outcomes could likely be achieved. Fortunately, addressing these challenges are exactly the goals of XX's career. Our challenge is to equip him with the experiences and skills to launch his career to the betterment of us all. Towards this end, we have designed a well-balanced educational and experiential program to support XX's career and this CDA. Fortunately, XX has already developed excellent skills in identifying important research questions, designing studies to answer those questions, conducting advanced statistical analyses (which he does almost entirely on his own), interpreting the results and presenting and publishing his findings. Our main goals for furthering his skills, therefore, are to provide a deeper foundation in specialized analytic skills relevant to his career goals, and to give him practical experience in running studies that involve prospective data collection. For the first axis of his training – expanding his research repertoire – we have designed the following program:

1. Analyzing variation in outcomes from providers' perspectives: An important opportunity to improve the quality of care is to identify best practices and to then disseminate them. Identifying best practices necessitates being able to adjust for the clustering of patients within practices and the use of hierarchical models. We have identified several course offerings that explicitly teach hierarchical and GIS modeling and XX will participate in these didactic sessions. Moreover, our local analysts and biostatisticians are well versed in a range of analytic approaches to address the clustering of patients and will be able to provide additional support as XX performs these analyses as part of this CDA program. Given his goal of leveraging the XX registry to understand hospital variations in procedural appropriateness (using the updated Version 4 forms that we helped design), these skills will be essential and his application of them towards completing his proposed project will solidify his comfort and use of these techniques.

2. Analyzing variation in outcomes from patients' perspectives: XX has already conducted a number of studies examining patients' outcomes at a particular point in time. However, he has not (nor has almost anyone), as of yet, sought to understand the trajectories of patients' recovery after cardiovascular illness. Given the expertise of our institution in quantifying patients health status (their symptoms, function and quality of life), we have access to numerous datasets with serial health status data that can be leveraged to better understand the patterns of patients' health status after a seminal event (e.g. AMI, PCI or heart failure hospitalization). XX has therefore identified several courses in advanced longitudinal modeling that will help him conduct such studies and determine whether there are modifiable factors (or non-modifiable disparities) associated with better or worse recoveries after an acute cardiac event. As before, our analysts are working with M-Plus, SAS, R and other statistical programs, as well as leading biostatisticians throughout the country, to better develop the methods for analyzing longitudinal health status data and will be able to assist XX in these analyses.

3. Advancing the methodology of patient outcomes assessment: In our prior work, where we have developed the international standards for quantifying patients disease-specific health status (e.g. the XX Angina Questionnaire for CAD or the XXX Cardiomyopathy Questionnaire for heart failure), we did not need to contract these instruments for routine clinical use. However, as the field has evolved – and patients’ health status outcomes have now emerged as performance measures of quality – there is a pressing need to create more parsimonious disease-specific health status measures. In the context of his project proposal, XX will work on developing a much shorter SAQ – one that could be used if the appropriateness measures for coronary revascularization turn out to be an important opportunity to improve care and to avoid ‘gaming’ of the system by practitioners. Given our institution’s access to well over 50,000 SAQs in a wide variety of clinical settings, and our expertise in the methodology of health status assessment, we will be well-positioned to assist XX in his work. Importantly, from this experience, he will develop an intimate knowledge of the strengths, limitations, interpretation and appropriate applications of health status measures so that he can deploy them throughout his future career.

The second ‘axis’ of XX’s development will be to provide him with the skills for independently leading a research team. Specific goals include the following:

1. Practical experience in study execution: Despite his remarkable productivity and success to date, the majority of XX’s projects have leveraged existing datasets. In order to be a truly independent investigator in his chosen field, he needs experience in organizing and implementing data collection, particularly in multi-center studies. Towards that end, we plan for XX to assume a major role in extending our ongoing implementation of improved PCI informed consent study (funded by XX) to also collect data for his proposed analyses of PCI appropriateness. This will provide a critical set of experiences in team management, study execution, outcomes assessment and multi-center communication/collaboration. Such skills will be invaluable as he transitions into being an independent investigator.

2. Mentorship of more junior trainees: In his first 18 months at XX, XX has already begun mentoring residents, fellows and PhD candidates. As part of this CDA, we will continue to support his burgeoning mentorship skills, in particular with one or two of the 5 fellows being supported over the next 3 years by our XX Outcomes Center grant. While we will be careful not to overburden XX with responsibilities that distract him from his own development, we believe that not only is XX capable of providing good mentorship to others, but that further developing these skills will enable him to be an even more effective investigator and leader in the future.

We at the XX are deeply committed to XX’s success in his proposed projects. Accordingly, we are honored to provide all of the funding needed for the primary data collection of his appropriateness validation studies. Although he will conduct many of the analyses himself, we are also committed to allowing any and all of our 10 statistical analysts to assist him, should he need it. Moreover, as one of only 3 Analytic Centers for the XX, we will also have the XX data available for his national variation analyses on PCI appropriateness. Finally, for the creation of a shortened SAQ, we will also provide access to any and all needed datasets. If awarded this CDA, the institution is committed to protect at least 75% of full-time professional effort for XX’s research and will provide the necessary computer, secretarial and

infrastructural support necessary for his success. We have also designed a terrific infrastructure to provide extensive mentorship for XX. My personal commitment to serving as XX's primary mentor could not be stronger. As part of my Directorship role for our XX Outcomes Center, I have 25% protected time that is explicitly allocated for mentorship. Over the past 12 years, I have served as a primary mentor for 16 trainees/junior faculty (of whom 14 remain in academic medicine or training) and a co-mentor for over 12 others. Currently, XX will be my second junior faculty member for whom I currently have primary mentorship responsibility. I strive to have no more than 2 junior faculty members and 4 fellows for whom I am responsible for primary mentorship. I will be a primary mentor for only 2 fellows in 2009-10. Thus, I will have adequate time to support XX's mentorship needs. XX and I have private offices that are 3 doors away from each other and have informal contact – where we discuss projects or the progress of junior trainees that we co-mentor – multiple times a day. In the context of this CDA, however, we will also begin formal, 1-hour, biweekly sessions to discuss his coursework, mentoring, and the status of the research projects. We will also meet formally on a quarterly basis to review his publications and his participation in national leadership committees, as well as discuss his career development. In addition, we will have a conference call involving the other co-mentors every 6-months to have broader discussions on XX's progress towards being an independent investigator. I will also work diligently to facilitate XX's engagement in national projects that are relevant to his personal and research interests. As the incoming Chair of the XX, I am frequently asked to nominate individuals to serve on numerous national committees. I also serve a similar role with the XX. Thus, when a good opportunity emerges that resonates with XX's skills and talents, I can help advance his career through this mechanism. An important co-mentor for XX will be Dr. XX at our institution and an internationally-recognized expert in cost-effectiveness and decision analysis. These skills will be invaluable in furthering XX's career goals. Moreover, through the XX that we developed, there is the opportunity for XX to collaborate with, and receive mentorship from many of the country's leading cardiovascular outcomes researchers, including xxxxxx. In fact, Drs. xx and xx have already committed to providing more extensive amounts of their time to help support xx's career and to be advisory mentors for this career development award. Collectively, we have assembled and established the infrastructure to extend, as necessary, extremely skilled cardiovascular outcomes researchers who all maintain the same opinion of xx's promise and potential as I do.

In summary, I do not believe that there could be a stronger applicant for the NIH Career Development Award than xx. He has been extraordinarily productive as a fellow and this period of funding will provide an invaluable opportunity for him to obtain additional skills for his research goals, develop skills in executing research projects and mentorship, and to further refine his broad research interests. Importantly, I believe that after this award, he will be extremely competitive in seeking independent funding and will be able to contribute immensely to medical care. In this unique period of US medicine, where new technologies and treatments are being developed at a time of shrinking national resources, we need investigators like xx. His commitment to defining 'what works in medicine' and 'in whom' can lay the foundation for appropriately offering the care to those who may most benefit, while saving money by not treating those with little potential to benefit or who may even be harmed by the treatment. I am confident that xx will emerge as one of the key contributors to realizing the Institute of

Medicine's goals for a more evidence-based, equitable, safe, efficient and patient-centered healthcare system. I hope that you share my enthusiasm and will please contact me if

I can provide any further information.

Sincerely,