Logan Wright Award: Team Science, Team Care, Team Training, and Team Leadership: My Experience

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I worked in a basic science biology laboratory throughout my undergraduate years. But I was not trained in genomics, systems biology, neurophysiology, or modern molecular aspects of medicine. I conducted behavioral intervention studies for my master’s thesis and doctoral dissertation (Powers, Blount, Bachanas, Cotter, & Swan, 1993; Powers & Roberts, 1995). But I did not learn about the phases of clinical trials that are common language in pharmacological studies, data and safety monitoring boards, or what a data coordinating center is or does. I learned to help children and families via delivery of evidence-based care as an intern and fellow. But I was not exposed to the principles of health outcomes research, health care delivery system improvement, epidemiology, or the discipline of informatics and “big data.” It is true that some of these terms and entities did not exist during my training or early career as an assistant professor. In addition, advances in pediatric behavioral medicine, clinical child and adolescent psychology, cognitive and neuroscience, social psychology, among other areas of psychological science have been many since the 1990s. Today, I am not an expert—in fact very much an evolving student—of all of these integral aspects of academic medicine, behavioral neuroscience, and pediatric behavioral medicine. What I do know, and what I try to integrate into my programs of research, I learned from my colleagues. My point is that going forward, excellence in pediatric psychology investigation, clinical care, training, and leadership is a team sport. Team Science is the now, and the future (and it probably has always been a key to successful, high-impact research).

It is an honor to be asked to provide commentary as the 2013 Logan Wright Distinguished Research Award recipient. I would like to reflect on the concepts of Team Science, Team Care, Team Training, and Team Leadership. I will discuss my experiences with the application of these principles in the areas of —(1) Programmatic, Integrated Clinical Care and Research; (2) Training and Mentorship; and (3) Administration and Leadership. I will also offer some thoughts about getting started as an early career scientist–practitioner.

Programmatic, Integrated Clinical Care and Research

Cincinnati Children’s Hospital is the home of one of the largest and most academically productive Headache Centers in the world. In 2009, our Center was named one of the top 10 Clinical Centers of Excellence in Headache Medicine, and the only pediatric program, by Medical Economics (“Clinical Centers of Excellence: Headache,” 2009). We have the only United Council for Neurologic Subspecialties-approved training program that is focused...
on children, adolescents, and young adults. Migraine is one of the most prevalent chronic illnesses in youth and this neurological disease is ranked worldwide as the eighth leading cause of years lived with disability (Hershey, Powers, Winner, & Kabbouche, 2009; Vos et al., 2012). Children and adolescents with migraines are likely to continue to have this disorder in adulthood. Overall quality of life is as impacted for youth with migraine as other illnesses such as cancer, cardiac disease, and rheumatological disorders (Powers, Patton, Hommel, & Hershey, 2003). Currently, our program is the Clinical Coordinating Center for the NIH-funded U01 project entitled “Childhood and Adolescent Migraine Prevention Trial (The CHAMP Study),” a 40-site, US$18 million randomized clinical trial that will help determine optimal first-line preventative therapy for pediatric migraine (U01NS077788; Hershey et al., 2013). The University of Iowa is the Data Coordinating Center, and our trial is being conducted across the country. We recently completed an NIH-funded single-site randomized clinical trial that demonstrated for the first time an effective treatment for chronic migraine diagnosed by international criteria in children and adolescents ages 10–17 (R01NS050536). Cognitive behavioral therapy in combination with the prevention medication amitriptyline was superior to headache education plus amitriptyline on reduction in headache days and migraine-related disability (Powers et al., 2013). The report of this study was the lead article in the December 25, 2013 issue of the *Journal of the American Medical Association*, highlighting the importance of this psychological therapy as an evidence-based intervention. In an accompanying editorial (Connelly, 2013), the critical need to address barriers to translating biopsychosocial treatments into headache medicine practice was discussed. Our team has also conducted innovative and high-impact studies on the genomic and molecular basis of this disease, neurophysiological effects of migraine, and health service delivery and clinical care outcomes (Guo et al., 2012; Hershey et al., 2004; Hershey, Burdine, Kabbouche, & Powers, 2011; Korostenskaja et al., 2011; Lynch-Jordan et al., 2010; Wang et al., 2010; Xiang et al., 2013). We have authored a book, practice-based articles, and provided training at the national and international level to change care and emphasize evidence-based practice in the field of headache medicine (Hershey et al., 2009; Hershey, Kabbouche, & Powers, 2010; Hershey, Winner, Kabbouche, & Powers, 2007; Powers & Andrasik, 2005; Powers, Gilman, & Hershey, 2006a, b; Winner, Powers, Kabbouche, & Hershey, 2007).

The Headache Center at Cincinnati Children’s was established in 1996 as a collaboration between the Division of Neurology and the Division of Behavioral Medicine and Clinical Psychology. At the beginning, we were a team of one neurologist, one psychologist, and one nurse practitioner. Today, our team includes board-certified headache specialist neurologists, pediatric psychologists, nurse practitioners, nurses, basic scientists, clinical research professionals, fellows, residents, summer students, business directors, and grant specialists. We learn from each other and our patients and families, conduct research that can be directly translated into our practice, and actively use what we experience as health care providers to inform the next set of questions to address in future investigations. That is, Team Science and Team Care.

**Training and Mentorship**

The Center for Child Behavior and Nutrition Research and Training was established in 1999 at Cincinnati Children’s Hospital. From the beginning, this Center had as a central aim the education of psychologists, physicians, and nutrition scientists. Since 2003, our team has directed an NIH-funded T32 National Research Service Award focused on postdoctoral training (T32DK063929). The goal is to
prepare team-based scientists so they can lead this interdisciplinary field to high-impact, evidence-based advances in care. Examples of our work, grounded within interactions with fellows, include studies that have led to improvements in care for children and adolescents with cystic fibrosis, type 1 and type 2 diabetes, obesity, inflammatory bowel disease, epilepsy, headache, cardiovascular disease, and those who have experienced trauma and abuse (Boles et al., 2010; Brannon et al., 2013; Filigio et al., 2012; Gordon et al., 2013; Hershey et al., 2009; Hommel et al., 2012; Modi et al., 2008; Modi, Rausch, & Glauser, 2011; Patton, Dolan, Smith, Brown, & Powers, 2013; Powers et al., 2005; Powers, Chamberlin, van Schaick, Sherman, & Whitaker, 2006; Shah et al., 2012; Slater et al., 2012; Stark et al., 2009; Zafar et al., 2012). Graduates are among a group of leaders and scientists now directing NIH-funded team-based laboratories and nationally recognized training programs. Many are in leadership positions in the Society of Pediatric Psychology. Now in its 11th year of funding, the T32 grant is a model held up by the National Institute of Diabetes and Digestive Diseases as a unique and pioneering effort dedicated to interdisciplinary scientific training. Our faculty includes pediatric psychologists, clinical child and adolescent psychologists, neuropsychologists, pediatric subspecialists (e.g., endocrinologists, gastroenterologists, rheumatologists, neurologists, pulmonologists, and cardiologists), pediatric generalists (e.g., adolescent medicine, emergency medicine, and ambulatory pediatricians), pediatric surgeons, epidemiologists, biostatisticians, nutrition scientists, and basic scientists. That is, Team Science and Team Training.

Administration and Leadership

Cincinnati Children’s Research Foundation established an Office for Clinical and Translational Research to support and accelerate investigation across the full spectrum of human subject research. Our team includes physician-scientists, business directors and managers, regulatory specialists, budget and contract specialists, marketing professionals, clinical research coordinators and research nurses, study monitors, statisticians, informaticians and data managers, and medical writers. The Office team currently consists of >60 staff and supports translational and clinical trials across over 40 divisions, centers, and institutes at our institution. As a pediatric psychologist in a medical center setting, directing an office focused on providing critical infrastructure for team science and reporting to the Chairperson of Pediatrics and the Board of Directors of what is today an almost US$2 billion enterprise is a tremendous growth opportunity for advancing leadership and executive skills. Vital to success is taking a team perspective and being curious about the work and needs of peer scientists and research professionals. A principle that is the foundation for our support to our colleagues is to integrate three key components of this type of infrastructure, namely, science, business, and execution. A service mentality that is self-correcting, open to change, willing to take risks, and accountable is how our team approaches the application of this principle. An illustration of this team-based type of administration and leadership is The CHAMP Study. The Office for Clinical and Translational Research was involved in this effort from its origins, providing key assistance with the trial design; interactions with the central clinical lab, investigational pharmacy, cardiology/ECG, mass spectrometry, institutional review board, and sponsored programs in Cincinnati and across study sites; budgeting and contracting; recruitment and retention planning; submission and maintenance of an investigational new drug application to the Food and Drug Administration; trial regulatory management, execution, and support of each study site; study monitoring; and day-to-day work with the data coordinating center as well as regular interactions with National Institute of Neurological Disorders and Stroke (NINDS) staff, the independent medical monitor, and the data and safety monitoring board. The trial is on time with enrollment and has been complimented as a strongly executed multi-center study by leaders at the NINDS. Such complex clinical investigation, business, and execution are built on the foundation of teamwork. That is, Team Science and Team Leadership.

Getting Started as an Early Career Scientist–Practitioner

While the work I am engaged in today has reached the “large-scale team” level, it did not start out that way. The Headache Center was an idea that grew out of taking care of families referred for biofeedback and thinking what could be accomplished if we had a team that saw every family when they initially sought out a diagnosis and treatment plan? The Center for Child Behavior and Nutrition Research and Training program was initially based on collaborations with Lori Stark in the area of dietary adherence in cystic fibrosis, and learning about challenges that were important to families and the physicians who referred their patients for help with mealtimes. In short, the need for these programs was made clear by experiences as an
early career clinician and clinical supervisor and the foundation of scientific training we obtain as pediatric psychologists. Over time, with measured results and great colleagues, along with a bit of luck and timing, these ideas grew and developed. Opportunities for leadership roles arose from hard work, observable outcomes, and the key support of other leaders in my institution. Funding for our programs was realized by purposefully seeking out colleagues who were committed to making a difference for children and families by conducting a level of science that would have the potential to change practice, and more hard work (and some more luck and timing).

I have found a few lessons to be formative in regards to team science. Take grant writing seriously, start early, get feedback often, realize there are always better ideas if you are curious and open to what others think, and enjoy the opportunity to be creative and follow your passion. Don’t “chase money,” follow your ideas and what is important to you as a scientist-practitioner (and to the patients and families you want to help). Be an active learner in areas that may not have been included in your training. Specifically, seek out training and experiences with financial management, leadership, mentorship, and advances in medicine such as genomics. Be thoughtful when choosing collaborators. Take your time to make sure there is alignment of goals and complementary talents, and that you genuinely like the members of your team. Consider how important it is for your career to have a “good boss” (and to help your boss out so it is easier for them to be “good” to you). Cultivate relationships with leaders in your institution. Show up, put yourself out there and take risks, work hard, share success, take personal responsibility for mistakes, and make sure to have fun every day with your colleagues. In sum, a key way to grow as a professional is to be part of strong and committed teams.

**Conclusion**

Team-based efforts in research, care, training, and administration take a clear vision, patience and persistence, time, and a bit of good fortune. Not every effort will succeed or be sustainable. But, all efforts have to begin with passion, curiosity, and a drive for excellence. And to sustain team-based science, leadership and financial skills are critical. It is an honor to have been chosen by my peers in the field of pediatric psychology as the 2013 Logan Wright Research Award recipient. Scientific accomplishments that I have been a part of have been the result of great teams of talented, dedicated, and incredibly hard-working people. I would like to thank every member of each team I have had the incredible privilege of being a part of in my career, and also like to thank the members of the Society of Pediatric Psychology.

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