

VIEWPOINT

VOICES IN CARDIOLOGY

Adult Congenital Heart Disease Scholarship



An Opportunity to Spark Interest in This Field

Katia Bravo-Jaimes, MD,^a Renee P. Bullock-Palmer, MD^b

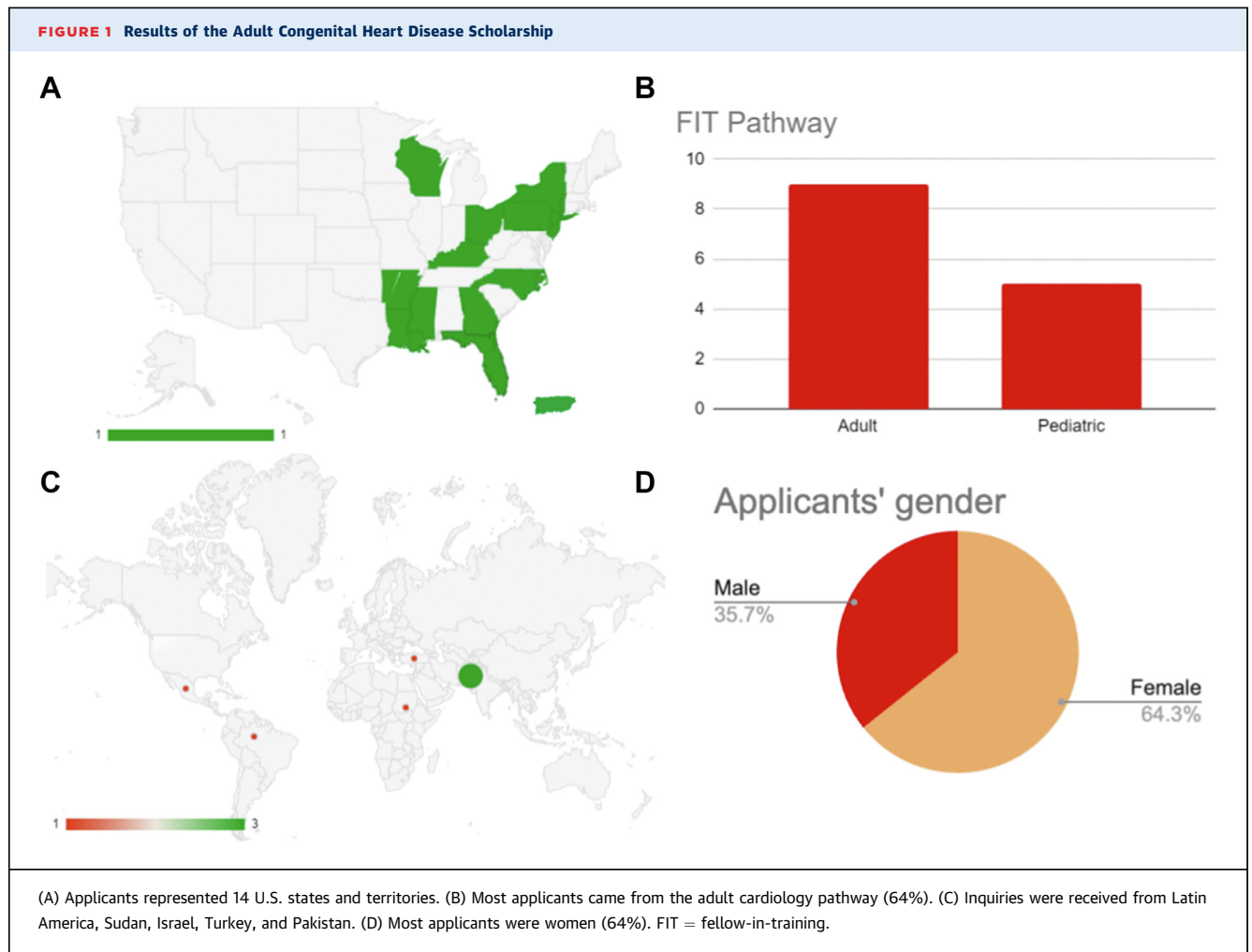
The history of modern cardiac surgery is intrinsically connected to the history of congenital heart disease (CHD). With the advent of modern surgical techniques and complex repairs, there has been a significant reduction in mortality rates for children with CHD in developed countries, dropping from the historical 90% to 3%.¹ No other field in medicine has achieved such a dramatic improvement in survival rates. As a result of this, in 2005, adults with congenital heart disease (ACHD) exceeded the number of children with CHD in the United States, and by 2010, ACHD were estimated to be approximately 1.4 million people.² Unfortunately, there were only 475 ACHD board-certified physicians up to May 2023³ and 119 self-identified ACHD centers listed by the Adult Congenital Heart Association.⁴ This substantial demand-supply mismatch calls for an urgent need to increase the ACHD workforce and expose the next generation of cardiovascular disease (CVD) and pediatric cardiology (PC) fellows-in-training (FITs) to this field. In 2015, ACHD became a 2-year Accreditation Council for Graduate Medical Education (ACGME)-accredited fellowship, and it entered the National Residency Matching Program in 2019. The number of ACHD unfilled positions steadily decreased from 44% (4 of 9) in 2019 to 26% (6 of 23) in 2020 and 15% (3 of 19) in 2021. Even though it may be too early to predict a new trend, the years 2022 and 2023 represent a significant inflection point in ACHD training, where only 13 and 14

applicants matched to the subspecialty nationwide, respectively, leaving 36% (8 of 22) unfilled positions each year.⁵ Factors influencing the low numbers of ACHD applicants include the additional 2 years of fellowship training; lack of compensation incentive compared to general cardiology; availability of faculty positions in limited geographic locations and mostly restricted to large academic centers, and the challenging landscape for building new programs. It is possible that the COVID-19 pandemic may have affected the training experiences of PC and CVD FITs, resulting in an even lower interest in ACHD because of reduced exposure in this field given the high clinical demands related to the pandemic.⁶

Building on the hypothesis that one of the multiple causes for the lack of attraction to ACHD is the low clinical and procedural exposure during PC or CVD fellowships,⁶ we developed the ACHD scholarship initiative with the goal of increasing interest in this field. In this scholarship, we sponsored participation in a 1-month ACHD rotation at a top ACGME-accredited ACHD fellowship program (Boston Children's Hospital [Massachusetts], Mayo Clinic [Minnesota], and the University of California-Los Angeles [California]) and provided \$2,000 per awardee to cover costs related to travel, medical license, and lodging. The creation of this scholarship was discussed with the 3 ACHD fellowship program directors who had prior experience with visiting FITs. We developed a call for applications with set requirements, including completion of the Heart University curriculum, personal letter of intent, and letter of recommendation from the applicant's program director. We promoted this call for applications via the American College of Cardiology program directors and FIT directory and social media to reach first- and second-year PC and CVD

From the ^aMayo Clinic Florida, Jacksonville, Florida, USA; and the ^bDeborah Heart and Lung Center, Browns Mills, New Jersey, USA.

The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).



FITs. The applications were received in the fall of 2021 and 2022 and evaluated by a holistic system including interest in ACHD as a career, academic potential, letter of recommendation strength, personal and leadership experiences, and performance in Heart University modules. The rotations were arranged by host institutions, and trainees rotated during the following summer and fall. During the first 2 years of this initiative, we received 14 applications, with a female (9; 64%) and CVD FIT (9; 64%) predominance (Figure 1). We also received 8 inquiries coming from Latin America, Sudan, Israel, Turkey, and Pakistan; 2 from internal medicine and medicine-pediatrics residents; and 9 from FITs that did not translate into applications. Three awardees completed their rotations, recognized that this experience provided an eye-opening experience,

and would recommend this experience to other FITs. Three awardees will complete their rotation this fall.

In this experience, we demonstrated that allocating financial support to complete an ACHD rotation at a top ACGME-accredited fellowship program can provide a positive experience to CVD and PC FITs. We recognize, though, that the denominator of interested candidates in this initiative was low overall, and perhaps this could be because of the burden of obtaining medical licenses, need to transiently travel to another state, and required support from local training program leadership. To surpass these challenges, regional ACHD rotations could be implemented with appropriate coordination from ACHD, PC, and CVD programs. Whether or not interest in ACHD as a subspecialty can increase

as a result of having a rotation remains to be determined because other factors, such as the length of training and future earning potential, play important roles.

FUNDING SUPPORT AND AUTHOR DISCLOSURES

This project was made possible through the financial support of the 2021 Women as One Escalator Awards. The authors have reported that

they have no relationships relevant to the contents of this paper to disclose.

ADDRESS FOR CORRESPONDENCE: Dr Katia Bravo-Jaimes, Department of Cardiovascular Medicine, Mayo Clinic Florida, 4500 San Pablo Road, South Jacksonville, Florida 32224, USA. E-mail: bravo.katia@mayo.edu.

REFERENCES

1. Mandalenakis Z, Giang KW, Eriksson P, et al. Survival in children with congenital heart disease: have we reached a peak at 97%? *J Am Heart Assoc*. 2020;9(22):e017704.
2. Gilboa SM, Devine OJ, Kucik JE, et al. Congenital heart defects in the United States: estimating the magnitude of the affected population in 2010. *Circulation*. 2016;134(2):101-109.
3. American Board of Internal Medicine. Candidates certified—all candidates: number of certificates issued. Accessed June 6, 2023. <https://www.abim.org/Media/vaqdilmh/candidates-certified-all-candidates.pdf>
4. Adult Congenital Heart Association. Adult congenital heart association clinic directory. Accessed February 23, 2023. <https://www.achaheart.org/your-heart/resources/clinic-directory/>
5. National Resident Matching Program. Results and data specialties matching service. 2022 appointment year. Accessed February 23, 2023. https://www.nrmp.org/wp-content/uploads/2021/02/SMS_Result_and_Data_2021.pdf
6. Bravo-Jaimes K, Rodriguez-Montserrat C, Duarte VE. Sparking the fire in adult congenital heart disease. *J Am Coll Cardiol*. 2022;80(6):641-645.

KEY WORDS adult congenital heart disease, fellowship, pipeline, scholarship