PERSPECTIVE

The Health Equity Scholars Program: Fostering Culturally Competent and Successful Independent Investigators in Alzheimer's Disease and Related Dementia Research

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Abstract

INTRODUCTION: The Health Equity Scholars Program (HESP) addresses the critical need for a diverse, culturally competent workforce to study and treat older adults from underrepresented populations (URPs) with Alzheimer's disease and related dementias (AD/ADRD). The HESP offers tailored mentored training in AD/ADRD research concepts, aiming to develop successful independent researchers. It recruits Scholars from underrepresented backgrounds as well as those passionate about AD/ADRD health equity research.

METHODS: We (1) describe the fundamental elements of the HESP, and (2) present preliminary data from the HESP program evaluation results performed by an outside agency, pre–post participation surveys, and Scholar accomplishments.

RESULTS: The HESP Scholars reported high rates of proficiency, satisfaction, and competency in nearly all evaluated areas, and have been successful in obtaining grants, promotions, and publications.

DISCUSSION: These initial outcomes data suggest that the HESP is meeting its objective of diversifying the workforce in the field of AD/ADRD research and care.

KEYWORDS
African American, Alzheimer's disease (AD), Alzheimer's disease and related dementias (ADRDs), Alzheimer's Disease Neuroimaging Initiative (ADNI), Community-Engaged Research (CER), Health and Aging Brain Study: Health Disparities (HABS-HD), Health Disparities, Health Equity Scholars Program (HESP), Latino/a/x, National Institute of Aging (NIA), National Institutes of Health, Non-Latinx Whites, Underrepresented Populations (URPs), Wisconsin Evaluation Collaborative (WEC)

Highlights

- The Health Equity Scholars Program aims to cultivate a diverse and culturally competent workforce, who are well-prepared to study and treat underrepresented older adults with Alzheimer's disease and related dementias (AD/ADRD).
- The program provides tailored mentored training in AD/ADRD research concepts, with the goal of nurturing successful independent researchers.
- Rigorous evaluation processes for applications ensure the selection of highly qualified Scholars.
- The program includes tailored training activities such as seminars and grant writing workshops, and tracks Scholar achievements while undergoing annual external evaluation to enhance its training program iteratively.

1 | INTRODUCTION

Alzheimer's disease and related dementias (AD/ADRDs) are a growing public health crisis. In the United States (US) alone, there are over 6 million people living with AD.[1] The global population living with dementia will reach approximately 152 million by 2050.[2] Rates of AD/ADRDs are significantly higher in ethnoculturally diverse populations. For instance, compared to non-Latinx White adults, Black/African American adults are twice as likely and Latinx adults are about one and one-half times as likely to have AD/ADRDs.[1]

Additionally, the rapid anticipated population growth of these two groups (80% and 161%, respectively) in the US by 2040[3] underscores the need for intentional and dedicated initiatives to address these inequities.

Fostering a diverse and culturally competent workforce through mentoring and training is crucial for addressing the biomedical, behavioral, clinical, and translational needs in the AD/ADRD field. Even more importantly, a diverse and culturally competent workforce is essential for addressing the profound AD/ADRD health inequities experienced by minoritized, underrepresented populations (URPs).

Due to the nationwide dearth of culturally competent scientists, it is imperative that a dedicated effort is geared at deploying culturally-informed methods of research among scientists in the AD/ADRD space, starting at an early stage. To address this urgent AD/ADRD workforce capacity need, the Health Equity Scholars Program (HESP) was launched through an innovative partnership of two National Institutes of Health/National Institute on Aging (NIH/NIA)–funded studies: the Alzheimer's Disease Neuroimaging Initiative (ADNI) and the Health and Aging Brain Study: Health Disparities (HABS-HD). The aim of the HESP is to equip emerging scientists who are either from URPs or who have an interest in AD/ADRD health equity research, with the conceptual knowledge base, practical skillset, and allied resources necessary for launching successful independent research careers and clinical practice in the AD/ADRD field. This pioneering initiative aims to provide training and mentoring in AD/ADRD-related basic, clinical, translational, health equity, and community-engaged research (CER) to an annual cohort of diverse Scholars. This in turn will serve to address the growing AD/ADRD scientific workforce capacity gap and foster a new generation of ethnoculturally/linguistically diverse and culturally competent AD/ADRD scientists.

The objective of this article is twofold: (1) to delineate the fundamental elements of the HESP, encompassing the team, Scholar selection process, training program, tailored mentoring, and financial support and resources; and (2) to present preliminary data on the HESP program evaluation results from pre–post participation surveys and interviews conducted with the first cohort of Scholars, along with the accomplishments to date of HESP Scholars from Cohorts 1 and 2 during their time in the program.

RESEARCH IN CONTEXT

1. **Systematic review**: The Health Equity Scholars Program recognizes the underrepresentation of certain populations in the AD/ADRD field and aims to bridge this gap by offering tailored, mentored training. HESP's approach aligns with existing literature highlighting the importance of diversity in the healthcare workforce and the impact of cultural competence on patient outcomes in AD/ADRD.

2. **Interpretation**: By recruiting and training individuals from underrepresented backgrounds or those passionate about AD/ADRD health equity research, HESP effectively addresses the call for a more inclusive workforce. Through tailored training activities and continuous tracking of Scholar achievements, HESP facilitates the development of independent researchers equipped to tackle the complexities of AD/ADRD within diverse communities.

3. **Future directions**: Moving forward, HESP will refine training methods based on Scholar feedback and external evaluation data to address gaps in programming. Future initiatives will prioritize collaboration with stakeholders and innovative approaches to serve underrepresented populations affected by AD/ADRD, thereby advancing health equity in the field.

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selection process; (3) the training program; (4) tailored mentoring; and (5) financial support and resources.

2 | COMPONENTS OF THE HESP PROGRAM

2.1 | Description of the HESP

The HESP was inspired by the success of the ADNI3 Diversity Task Force, a culturally-informed CER pilot project, led by the current HESP Leadership (see section 2.1.1), aimed at increasing the inclusive participation of ethnoculturally diverse adults into the ADNI3 study[4,5]; see Rivera Mindt and Arentoft et al., in this Special Issue. This successful pilot yielded a substantial increase in enrollment of Black and Latinx URPs.

One of the key lessons learned from the achievements of the Diversity Task Force was the need for investigators from the Black/Latinx communities to be in demonstrable leadership positions when reaching out to these communities. Therefore, the HESP was established in February 2023 to address the need for a diverse and culturally competent AD/ADRD research workforce within historically excluded or underrepresented communities. The mission of the HESP is to ensure that emerging Scholars, who are either from diverse backgrounds and/or committed to AD/ADRD health equity research, are prepared to lead and succeed as independent AD/ADRD investigators. Core components of this initiative include: (1) the HESP team; (2) the Scholar

2.1.1 | The HESP Team

The HESP is a collaborative effort of the ADNI4 Engagement Core and the HABS-HD Development Core (O. Okonkwo and M. Rivera Mindt, Core Co-Leaders) and receives support from the Principal Investigators of the ADNI (M. Weiner) and HABS-HD (S. O'Bryant). Three Health Equity Scientists (A. Arentoft, V. Guzman, and J. Strong) provide additional mentorship and scientific support, serving as supplementary resources for Scholars by providing feedback and facilitating discussions aligned with curriculum goals and Scholars' research interests. HESP Project Managers (A. Niay and M. Thao) coordinate and contribute to the development and implementation of activities for the HESP, serving as liaisons between leadership, stakeholders, and the HESP Scholars. The inaugural HESP Project Manager (H. Amaza) has since transitioned to a more senior role as Program Manager for the ADNI4 Engagement Core but remains connected to the HESP as an advisor to the current HESP Project Managers.

The ADNI Community-Science Partnership Board (CSPB) serves as an additional resource available to Scholars. In brief, the ADNI CSPB is comprised of community members, stakeholders, as well as aca-

demic experts in AD/ADRDs and health disparities[5]; see Rivera Mindt and Arentoft et al., in this Special Issue. The CSPB prioritizes cultural humility and translates knowledge to actionable guidance; it provides iterative feedback on ADNI4's culturally-informed CER efforts, the HESP program, and the Engagement Core's health equity research agenda.

HESP Scholars have the unique opportunity to engage with leaders in the AD/ADRD field. Specifically, they attend and actively participate in the annual ADNI4 Steering Committee meeting and the HABS-HD Investigator meeting. During these meetings, the Scholars have the opportunity to present their work to the study leadership, network with academic leaders and team members of these two largescale projects, and have time for in-person collaboration and mentorship.

2.1.2 | Scholar Selection Process

The HESP aims to recruit, at minimum, an annual cohort of six Scholars who are either from URPs or have a commitment to brain health equity research. The HESP is multidisciplinary and open to scholars invested in AD/ADRD research regardless of their field of study. Scholars from three career levels—graduate/medical students, postdoctoral fellows, and early career faculty—are selected from a competitive, nationwide pool of applicants who apply to either the ADNI or HABS-HD program. The HESP widely disseminates its request for applications throughout the AD/ADRD scientific community by means of email announcements, social media posts (e.g., Twitter/X, Instagram), and through a series of virtual HESP Open Houses in the month leading up to the annual application deadline. Interested applicants are further directed to a comprehensive website (https://hesp.medicine.wisc.edu/), where they can learn more about the program and submit their applications during the enrollment period.

Key features of the HESP application package include an NIH Biosketch; 2-page Career Development Plan; 3-page Research Plan; Letter of Support from the Scholar's primary mentor; and transcripts (if applying at the graduate/medical student level). Potential Scholars must demonstrate a commitment to AD/ADRD and/or brain health equity research and training, as well as present a feasible, rigorous, and innovative research plan that appropriately leverages ADNI or HABS-HD Study data. Additionally, Scholars must identify a local mentor at their home institution supportive of their participation and commitment to the HESP objectives and training.

Once received, applications undergo thorough evaluation by paid external reviewers from across the globe consisting of seasoned investigators with expertise in AD/ADRD and/or health equity research, and with a commitment to cultivating a diverse and culturally competent AD/ADRD workforce. To minimize potential bias in the review process, each application is evaluated by three independent reviewers. The reviewers employ NIH's review template, which features a 9-point scoring system, with lower scores signifying a stronger application. This 9-point metric is used to separately assess the strength of the Research Plan, Career Development Plan, Training Environment, Mentor and Letter of Support, and Transcripts. An overall impact score

is assigned to each reviewed application to indicate the candidate's overall suitability for the program.

2.1.3 | Training Program

The HESP curriculum is centered on competency-based training, aimed at filling potential knowledge gaps in basic, clinical, translational, and culturally-informed CER content areas, while providing professional development opportunities. The clinical research core competencies model proposed by the Joint Task Force for Clinical Trial Competency and Clinical Research Professional Workforce Development forms the foundation of the curriculum.[6,7] These competencies include topics such as leadership styles, responsible conduct of research, and mentor–mentee relationships (see Table 1 for more details). The curriculum also covers eight core content areas—such as neuroimaging, biomarkers, and omics—that are foundational to AD/ADRD, thereby ensuring that Scholars receive comprehensive training in key topics for AD/ADRD and health equity research (see Table 2 for additional details).

HESP Scholars are required to devote at least 50% of their time to the program. HESP Scholars virtually convene regularly for a diverse array of activities. These include two monthly didactics sessions—the *HESP Seminar Series* and the *HESP Professional Development Series* (described below in Section 2.1.4, Tailored Mentoring)—grant writing workshops, self-directed modules, conferences, and experiential activities. The *HESP Seminar Series* and the *HESP Professional Development Series* are the principal vehicles for delivering didactics relevant to the core content areas and research competencies of the program as described in Tables 1 and 2. Scholars also participate in *Research in Progress* presentations to share updates on their research and solicit collaboration and feedback from cohort peers. Additionally, at the start of every academic year, the Scholars select a book from academic or lay literature which they will read on their own (i.e., self-guided study) and present a report to the cohort at the end of the program. There is variability in the training backgrounds and career aspirations of the Scholars, as such tailored pathways are designed to equip each individual Scholar with the essential tools for success.

2.1.4 | Tailored Mentoring

The HESP recognizes the challenges and barriers that aspiring AD/ADRD scientists from URPs often face in becoming successful independent researchers, and is dedicated to implementing tailored, multi-tiered mentoring to rectify this status quo. First, HESP Scholars participate in a monthly *HESP Seminar Series*, which is the program's flagship didactic. It is an hour-long meeting where a leading expert in the AD/ADRD field gives a 40–45-minute presentation to the Scholars, which is then followed by a 15–20-minute open discussion session. These seminars provide Scholars with a unique opportunity to interact with trailblazers in the field and deepen their understanding of

TABLE 1 Research Competency Topics.

Research Competency Topics	Themes	Sample Format and Activities
Mentor–Mentee Relationship	• Effective mentoring practices • Providing and receiving constructive feedback	• HESP Professional Development Series: Open forum discussions with HESP Scientists to gather feedback and troubleshoot barriers • Biannual 1:1 meetings with the Scholars, their local mentor(s), and the HESP Co-Leads
Responsible Conduct of Research	• Human subjects' protections • Research ethics, integrity, and compliance with regulations • Conflicts of interest	• Director's Round-Up[a]: Ethics and Integrity in Research • HESP Professional Development Series: Journal Club article discussion on Consent and Safety of Research Participants • Book Discussion: *The Immortal Life of Henrietta Lacks*
Leadership Styles	• Transformational leadership • Managing a research lab • Team motivation • Identifying one's leadership purpose and career trajectory	• Director's Round-Up[a]: Becoming a PI: Dos and Don'ts and Lessons Learned • Director's Round-Up[a]: How to be a Successful Investigator: Lessons from 60 Years of Research
Professionalism	• Academic honesty • Avoiding plagiarism • Setting healthy boundaries	• HESP Professional Development Series: Open forum discussion on professional ethics • Director's Round-Up[a]: Conflict Management Strategies
Team Science	• Interdisciplinary collaboration • Building professional networks	• HESP Seminar: Meet the Scientists, featuring teams of investigators working on various large-scale AD/ADRD and health disparities projects • Director's Round-Up[a]: Building Bridges: The Importance of Networking
Grant Writing	• Developing a grant proposal • Common grant writing mistakes • Identifying funding sources	• *Edge for Scholars* online grant writing workshop • Pre-submission grant application reviews by experienced external reviewers in the AD/ADRD field • Mock grant reviews
Research Design	• Formulating research questions and hypotheses • Types of research designs • Ethics in research design	• 1:1 meetings with the HESP Data Scientists to plan out each Scholar's research project • HESP Professional Development Series: Open forum discussion with HESP Data Scientists
Data Management & Analysis	• Data storage and organization • Data sharing and collaboration • Data visualization for data analysis	• HESP Seminar: Data Scientist presentation on Navigating the ADNI and HABS-HD data sets • HESP Seminar: What is a DSMB and Do I Need One for My Project?
Implicit Bias/Cultural Competence	• Implicit bias; Overcoming stereotypes • How to handle microaggressions • Addressing language barriers	• HESP Professional Development Series: Journal Club article discussion—How Does Implicit Bias Affect Research? • HESP Seminar: Culturally-Informed Care—Improving Outcomes in Diverse Populations
Job Search & Interview	• How to prepare for interviews • Learning how to negotiate	• Director's Round-Up[a]: Job Interviews and Considerations
Establishing your Laboratory	• Developing a budget • Attracting the right talent	• Director's Round-Up[a]: Prepare to Lead—Building and Managing Your Team
Getting Funded	• Why titles matter • Following the 3-paper rule for success	• HESP Seminar: NIA Training Officer presentation on NIA Career Development Grants/Opportunities
Promotion & Tenure	• Understanding institution-specific tenure requirements • Following your Individualized Career Development Plan	• Director's Round-Up[a]: How to Plan for Your Career and Financial Success • HESP Seminar: Now, I am Tenured. What Next?

Abbreviations: ADNI, Alzheimer's Disease Neuroimaging Initiative; DSMB, Data and Safety Monitoring Board; HABS-HD, Health and Aging Brain Study: Health Disparities; HESP, Health Equity Scholars Program; NIA, National Institute on Aging; PI, Principal Investigator.

[a]See Section 2.1.4 for more information on the Director's Round-Up conversation hours with the ADNI and HABS-HD Principal Investigators.

TABLE 2 Core Content Areas.

Core Content Areas	Sample Topics Addressed
Biomarkers	• CSF biomarkers: Utility, limitations, and applications in research and clinical use • Operationalizing the ATN research framework in preclinical cohorts • Characterizing plasma AD biomarkers in ethnoculturally diverse participants
Biostatistics	• Fundamentals of data analysis and data management • Experimental design in basic and clinical science • Computational approaches for big data/precision medicine • Maximizing the utility of large, shared data sets • Mixed methods approach to developing and refining research questions
Clinical Research	• Building and maintaining longitudinal cohorts • Understanding the role of the exposome in clinical manifestation of AD/ADRDs • Differential diagnosis of the AD/ADRDs • Improving clinical outcomes through attention to sex/gender and ethnicity in research • Risk and resilience to AD/ADRDs • Rigor and reproducibility in human subjects research
Community-Engaged Research	• Principles of community-based participatory research • Building trust and becoming a culturally-informed investigator • Effective strategies for engagement and inclusion of historically excluded groups
Genetics/Omics	• Biological underpinnings of aging/dementia • Bioinformatics approaches to quality control and analysis of omics data • Disease prediction using omics approaches • Genetic risk factors for Alzheimer's disease and other dementias • Omics-based drug discovery
Health Equity Research	• NIA Health Disparities Research Framework • Empirically supported, culturally-informed, CER approaches • Impacts of social determinants of health on cognitive aging and AD/ADRD risk
Neuroimaging	• Basics of MRI and molecular imaging • Neuroimaging and the ATN research framework • Novel PET methods for tagging activated microglia and synapses • Connectomic analyses
Neuropathology	• Ethnoracial differences in the clinical manifestation of AD neuropathology • Biochemical, cellular, and molecular mechanisms of neurodegeneration • Staging AD neuropathology

(Continues)

TABLE 2 (Continued)

Core Content Areas	Sample Topics Addressed
Neuropsychology	• Theoretical foundations of neuropsychological assessment • Cultural considerations in test interpretation among older adults from historically excluded and minoritized groups • Exploring the NIH Toolbox • Cognitive change in repeated longitudinal assessment • The impact of sociocultural factors on cognitive decline • Polypharmacy and cognitive function

Abbreviations: AD, Alzheimer's disease; ADRD, Alzheimer's disease and related dementias; ATN, Amyloid, Tau, and Neurodegeneration; CER, Community-engaged research; CSF, Cerebrospinal fluid; MRI, Magnetic resonance imaging; NIA, National Institute on Aging; NIH, National Institutes of Health; PET, Positron emission tomography.

specific content areas. At the end of the hour, the presenter departs and the Scholars spend another 30 minutes with HESP Co-Leads and Program Managers to debrief about the presentation and conduct "housekeeping business."

Meetings with their local, primary mentor at their home institution form the second pillar of the tailored mentoring approach. These mentors are usually mid- to late-career scientists who are recognized experts in their fields. They have substantive experience in research, teaching, and service in areas relevant to our program. Importantly, they have a strong track record in mentoring, making them ideal guides for our Scholars. Scholars meet regularly (in some cases, as frequently as weekly) with their primary mentor per the schedule outlined in their career development plan. These meetings serve several functions, depending on the Scholar's career needs as specified in their application but are usually for the purposes of monitoring progress on their project and receiving career guidance. In addition to these local meetings, HESP Scholars and their mentors meet twice each year with HESP Leadership. These meetings are intended to provide the Scholar with additional mentorship and 1:1 time with HESP Leadership, feedback on Scholar's research project and career progression, and support for any barriers to progress. A key component of these meetings is the opportunity it gives the Scholar to provide HESP Leadership with feedback about the program and curriculum. It is not unusual for the deliberations at these meetings to result in modifications to Scholar's Individual Development Plan.

Third, Scholars meet monthly for a recently-launched (February 2024) *HESP Professional Development Series*. This monthly group meeting, led by HESP Scientists, covers a rotating cadre of topics designed to promote peer support, engagement, and the various "soft skills" needed for career success. The format is more relaxed and conversational (relative to the *HESP Seminar Series*), and activities/topics have included journal club discussions, establishing collaborations, navigating professional barriers, preserving work–life balance, team science, academic job market applications, interviewing for positions

in academia and industry, and developing lab management leadership and operational skills. HESP Scientists are also available for 1:1 meetings to provide insight and feedback on scientific and professional development matters.

Fourth, the HESP hosts quarterly virtual roundtable conversations, known as the *Director's Round-Up*, which are led by the Principal Investigators (PIs) of the ADNI and HABS-HD projects. These conversations aim to offer additional mentoring to Scholars, focusing on topics related to best practices and common pitfalls in research. During these interactive sessions, PIs candidly share their past experiences, including successes and failures, as well as the motivations driving their work in the field of AD/ADRD. These sessions spur questions from eager Scholars seeking guidance on navigating the intricacies of academia.

Each year, Scholars are invited to attend one of the quarterly ADNI4 CSPB meetings, offering them direct insight into culturally-informed CER efforts in practice and a valuable opportunity to observe the ADNI CSPB's work firsthand. During these meetings, Scholars are given opportunities to present their research findings and are encouraged to actively engage in discussions with CSPB members. Key topics of discussion, all examined through a health equity lens, include ADNI4 enrollment updates, Engagement Core recruitment strategies, effectiveness of ADNI4 digital marketing campaign, local activities of ADNI4 Hub Sites, recruitment–retention work being done by the ADNI4 Community Research Navigators, collaborative dissemination efforts (e.g., papers), authentic ways of giving back to the community, and review of study materials submitted by other ADNI4 Cores (e.g., Neuropathology Core) for clarity, readability, and cultural sensitivity. Scholars also experience personal stories shared by the CSPB members some of whom are ADNI4 study participants. In addition, Scholars contribute new ideas such as suggesting items to use for outreach/promotional materials for community events and engagement.

Through these shared training and mentoring experiences, HESP aims to foster camaraderie, collaboration, and professional networks among Scholars, as well as between Scholars and leaders in the AD/ADRD field. When their official tenure in the program has concluded, Scholars are encouraged to remain engaged with the HESP community, and many indeed do so, thereby embodying the ethos of, "Once a HESP Scholar, always a HESP Scholar."

2.1.5 | Financial Support and Resources

HESP Scholars receive an annual stipend specific to their educational/career level. The current rates in 2024 are as follows: $95,000 for early career faculty, $70,000 for postdoctoral fellows, and $45,000 for graduate/medical students. One distinguishing feature of the HESP is the flexibility to utilize the stipend with minimal restrictions. Scholars can utilize their funds for salary, pilot studies, grant writing workshops, tuition, books, publication fees, or any other legitimate academic need outlined (and approved) in their application. In addition to their annual stipend, each Scholar receives a travel allowance of $3,000 to attend the annual ADNI Steering Committee Meeting or the HABS-HD

Investigators' Meeting, as well as other scientific conferences of their choice.

The HESP offers several additional resources to support the Scholars' career success. HESP Scholars have access to both the ADNI and HABS-HD data sets and resources, as well as data scientists ready to assist the Scholars with navigating the data and performing data analyses, as needed. Notably, HESP offers Scholars the opportunity for pre-submission review of their grant applications by experienced external reviewers. The goal of this service is to give Scholars an opportunity to have their grant applications reviewed, using NIH style and standards, by senior scientists in the AD/ADRD field, and to use the critique to improve their grant proposals prior to formally submitting the grant to the NIH or other funding agencies. Scholars are highly encouraged to make use of this resource, and they have reported finding it instrumental in submitting a strengthened application to funding agencies. All expenses for this external review are covered by the HESP.

As mentioned above, Scholars are provided a travel allocation to support attendance at either the annual ADNI Steering Committee Meeting or the HABS-HD Investigators' Meeting, respective to their program. As also mentioned, Scholars attend the virtual ADNI4 CSPB meetings.[5] The purpose of these exposures is to deepen the Scholars' immersion in the field of AD/ADRD, while providing them invaluable opportunities to network and collaborate with leaders and experts in the field.

3 | PROGRAM EVALUATION

To ensure continued improvements to program quality and impact, HESP undergoes an independent, confidential, and rigorous annual program evaluation through the Wisconsin Evaluation Collaborative (WEC) within the Wisconsin Center for Education Research (WCER) in the School of Education at the University of Wisconsin–Madison. The WEC provides culturally responsive program evaluations for educational organizations, state agencies, professional associations, and Cooperative Educational Service Agencies (CESAs).[8] More specifically, the WEC conducts confidential, standardized pre–post surveys, and exit interviews with HESP Scholars to collect valuable feedback for program improvement and refinement, with a focus on the following areas: (1) Scholar satisfaction, (2) career progression, and (3) the impact of the program on the Scholars' effectiveness as research mentors and leaders. The goal of the evaluation is to determine whether participation in the HESP has led to increased peer-reviewed publications and allied deliverables, proficiency in identified competencies, greater mastery of content areas, career advancement, and related impacts.

Scholars' scientific achievements, including grants and scholarships, conference presentations, academic promotions, publications, awards/honors, and other notable leadership/membership in groups related to AD/ADRD are tracked by the HESP Project Managers. The Scholars' milestones are showcased through website features, email blasts, and live announcements during regularly scheduled HESP meetings. This validates the work of the Scholars, builds confidence, and reinforces and motivates them to keep working towards their goals.

TABLE 3   Descriptive Characteristics of HESP Scholars.

	HESP Scholars (N = 16)	ADNI Subgroup (n = 10)	HABS-HD Subgroup (n = 6)
Education Type			
Bachelor's Degree	2	1	1
Master's Degree	3	2	1
Master of Public Health	1	1	0
MD	2	2	0
PhD	8	4	4
Discipline			
Bioinformatics[a]	1	1	0
Cellular & Molecular Pathology	1	0	1
Health Promotion Sciences	1	1	0
Neurology	4	2	2
Neuropsychology	3	2	1
Neuroscience/Medical Neuroscience	5	4	1
Pharmacology[b]	1	1	0
Psychology	1	0	1
Psychiatry/Behavioral Sciences	1	1	0
Trainee Level			
Graduate Student	6	4	2
Postdoctoral Fellow	5	3	2
Early Career Faculty	5	3	2

Abbreviations: ADNI, Alzheimer's Disease Neuroimaging Initiative; HABS-HD, Health and Aging Brain Study: Health Disparities; HESP, Health Equity Scholars Program; MD, Doctor of Medicine; PhD, Doctor of Philosophy.
[a]Scholar also reported a second discipline in Medical Neuroscience.
[b]Scholar also reported a second discipline in Neuroscience.

4 | OUTCOMES

Since launching its inaugural cohort in February 2023, the HESP has admitted a total of 16 Scholars into the program, comprising 10 ADNI Scholars (five per cohort) and six HABS-HD Scholars (three per cohort). Originally designed to admit one Scholar per year at each of the three career stages (early career faculty, postdoctoral fellow, and graduate/medical student), for both the ADNI and HABS-HD programs, the ADNI program exceeded this objective by admitting two additional Scholars due to the high caliber of applicants and the availability of additional funding to support the initiative. Table 3 provides basic descriptives on the 16 HESP Scholars admitted into the program to date. Both Cohorts I and II HESP Scholars have attained notable achievements such as a residency match, five promotions, 13 AD/ADRD leadership or group activities, 16 awards or honors, 23 grants and scholarships, 24 peer-reviewed publications, and 42 confer-

TABLE 4   Scholar Accomplishments.

Accomplishment Type	Number Reported
Conference presentations	42
Publications	24
Grants and Scholarships	23
Awards and Honors	16
Other[a]	13
Promotions	5
Residency Match	1

Abbreviations: AD, Alzheimer's disease; ADRD, Alzheimer's disease and related dementias.
[a]Other refers to leadership or membership in AD/ADRD organizations.

ence presentations. These accomplishments, which attest to the career success of the Scholars, are summarized in Table 4.

In January 2024, the inaugural cohort of five ADNI Scholars, along with one HABS-HD Scholar (who graduated a year early due to a fortuitous job opportunity), completed the program successfully. The WEC conducted a confidential exit survey and interview of these six graduating Scholars. Five of the six participated, resulting in an 83% response rate. Scholars were asked to rate (on a scale of 0 to 4, with 0 being Novice and 4 being Expert) their level of proficiency, with respect to HESP competency topics, before starting the program and after completion. The data revealed that the competencies that were most impacted by the HESP include: getting funded, grant writing, promotion & tenure, implicit bias/cultural competence, leadership skills, and job search and interview. On average, Scholars' ratings in these areas moved from "competent" to "proficient" after completion of the program (see Table 5). Scholars were also asked to rate their mastery of core HESP content areas before and after the program, using the same 5-point scale. They showed the most growth in the following areas: CER, health equity research, clinical research/practice, and biomarkers—all moving from "competent" to "proficient" after the program (Table 6).

Beyond their objective productivity (e.g., manuscripts and grants), the HESP's influence on the Scholars' career is also captured in the personal reflections they provided during their exit interviews. One Scholar shared that "the topics that are covered in this program are things that are not often thought about when it comes to our formal training. I got a PhD and in most of my formal training the idea of looking at health disparities was sort of a cursory part of your curriculum, but it wasn't a focus." Another Scholar stated, "The biggest thing that it has led to was the submission of my K01 award…I think if I hadn't done the program, I wouldn't have been able to do it. I wouldn't have gotten it done so quickly." Scholars further reflected on how the HESP contributed to their career development by saying, "[HESP is] helping me try to publish in higher impact journals," while another Scholar remarked, "…the program helped me on a personal level in the sense that it's given me leverage to be able to transition to a new [program director] position." Echoing these sentiments, another

TABLE 5 Average Competency Scores Before and After HESP (*N* = 5).

Competency	Before HESP	After HESP	Change
Getting Funded	1.8	2.8	+1
Grant Writing	1.8	2.6	+0.8
Promotion & Tenure	1.2	2	+0.8
Implicit Bias/Cultural Competence	2.4	3	+0.6
Leadership Skills	2	2.6	+0.6
Job Search & Interview	1.8	2.4	+0.6
Mentor–Mentee Relationship	2.4	2.8	+0.4
Establishing Your Laboratory	1.4	1.8	+0.4
Professionalism	3.2	3.4	+0.2
Team Science	2.8	3	+0.2
Research Design	2.6	2.8	+0.2
Data Management and Analysis	2.4	2.6	+0.2
Responsible Conduct of Research	2.8	2.8	0

Note: Rating was done on a 5-point scale: Novice (0), Beginner (1), Competent (2), Proficient (3), Expert (4). Competencies are listed in order of impact (i.e., change score), from greatest to least.
Abbreviation: HESP, Health Equity Scholars Program.

TABLE 6 Average Content Area Knowledge Scores Before and After HESP (*N* = 5).

Core Content Area	Before HESP	After HESP	Change
Community-Engaged Research	1.6	2.8	+1.2
Healthy Equity Research	2	3	+1
Clinical Research/Practice	2.8	3.4	+0.6
Biomarkers	2	2.6	+0.6
Biostatistics	2.2	2.6	+0.4
Neuroimaging	2.2	2.4	+0.2
Neuropsychology	2.8	2.8	0
Neuropathology	1.6	1.6	0
Genetics/Omics	0.8	0.8	0

Note: Rating was done on a 5-point scale: Novice (0), Beginner (1), Competent (2), Proficient (3), Expert (4). Content areas are listed in order of impact (i.e., change score), from greatest to least.
Abbreviation: HESP, Health Equity Scholars Program.

Scholar shared, "It definitely contributes to my promotion to instructor, which happened earlier than most people. The majority of people [at my university] take a lot longer to get promoted from postdoc to instructor." Together, these reflections illustrate the profound and multifaceted impact of the program.

In addition to the formal program evaluation conducted by WEC, the HESP has garnered informal qualitative feedback from Scholars through engagements with HESP Leadership and team members. This feedback has been predominantly positive, featuring constructive suggestions aimed at enhancing program efficacy. Consequently, these insights have prompted adaptations to better align the program with the training needs of Scholars. For instance, Scholars expressed a desire for earlier access to HESP Data Scientists and assistance with navigating the ADNI and HABS-HD data sets. In response, program leadership has decided to offer a dedicated seminar on this topic earlier in the program schedule, particularly as each new cohort commences its activities. Another key piece of feedback received was to allow more time for the HESP Scholars to engage in discussion with each other, the Program Co-Leads, and the HESP Scientists to solicit feedback on their research project, troubleshoot issues they encounter, and learn from their peer's academic and career experiences. As a result, the length of the *HESP Seminar Series* was extended by an additional 30 minutes and the *HESP Professional Development Series* was launched in January 2024, as described above in the Tailored Mentoring section.

5 | DISCUSSION

The HESP was designed to address the pressing need for a diverse and culturally competent workforce in AD/ADRD research and care. The HESP offers tailored, mentored training to Scholars from underrepresented backgrounds or those passionate about health equity research so that they may develop into independent researchers capable of studying, diagnosing, and treating older adults from URPs. Through its rigorous selection process, tailored training activities, and ongoing program evaluation, the HESP strives to cultivate a workforce that is well equipped to address health disparities in AD/ADRD research and care. This initiative is vital to advancing understanding and treatment of AD/ADRDs among historically marginalized populations and ensuring equitable access to quality care. The first cohort of HESP Scholars recently graduated, and the outcomes data indicate that they achieved notable career milestones, including presenting at conferences, publishing in peer-reviewed journals, securing grants, receiving awards and accolades, as well as getting promotions. This record of Scholar accomplishments suggests that the HESP is making strides in recruiting and training aspiring scientists committed to advancing AD/ADRD research and dedicated to addressing the inequities in AD/ADRDs.

Although the HESP program has already reached key milestones and outcomes, there are important limitations and future directions to consider. First, the confidential survey data from WEC revealed progress in certain competencies, such as securing funding and grant writing, as well as in core content areas like CER and clinical research, there are also competency areas, such as responsible conduct of research, and content areas like genetics/omics, where the level of proficiency or mastery remains unchanged. This underscores the need for careful consideration and continual refinement moving forward. One potential contributing factor to the reported lack of improvement is inadequate

exposure to these topics. To avoid imposing too much of a time burden on the Scholars (so that they can also focus on other professional commitments), the decision was made early on to only hold the *HESP Seminar Series* once a month. However, toward the end of the first year, it became apparent that 12 meetings per year would not be sufficient contact hours for the breadth and depth of training that was planned, especially with respect to competencies and core content. Therefore, the HESP Leadership made the decision to add a second didactic, the *HESP Professional Development Series*, which launched in January 2024. It would be of great interest to see if having two didactics each month (the *HESP Seminar Series* and the *HESP Professional Development Series*) results in more areas of improvement when the next exit surveys and interviews are conducted at the end of the 2023–2024 academic year. In the interim, we are also exploring whether other pedagogical changes might be of use, such as incorporating hands-on workshops, diversifying instructional materials to cater to different learning styles, and fostering closer interdisciplinary collaborations among the Scholars. Furthermore, the content areas and competencies that exhibited the least improvement in the present survey will be the focus of targeted instruction and exposure in the next academic year.

A second potential limitation of the HESP program is that our current monitoring of Scholar outcomes is manual and labor intensive, which could lead to failure to capture key data. As we move forward, we will explore resources to increase the efficiency and accuracy of our outcome monitoring with dedicated software (e.g., the Vanderbilt Flight Tracker). The third limitation that is worth highlighting is that we are presently focused on proximal (i.e., short-term) outcomes. Although these are essential for understanding the immediate impact of the HESP, it would be critical to also document long-term outcomes as the program matures and Scholars progress in their career. To meet this need, we plan to start requesting updated curriculum vitae from all Scholars (past and present) every 6 months. This would position us to keep good track of the Scholars' career advancements, evolving grant portfolio, and research productivity, thereby gaining invaluable insights into the long-term impact of the program on these trainees.

In conclusion, we believe that the HESP is a unique program where emerging scientists who are either from minoritized communities and/or have an interest in brain health equity are provided the intellectual, material, and financial resources necessary for cultivating a successful research career. We have created a stimulating environment where Scholars can actively engage with and learn from AD/ADRD leaders, and one another, with the ultimate goal of addressing the nation's need for an ethnoculturally and linguistically diverse and culturally competent workforce. As we celebrate the impressive successes of HESP Scholars to date, we are also mindful of the areas of ongoing programming growth. We look to the future with a firm commitment to building on this strong start and continuing to support and shape the next generation of URP leaders in the AD/ADRD field.

CONFLICT OF INTEREST STATEMENT

Author disclosures are available in the Supporting Information.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.