The U.S. Air Force’s Diversity and Inclusion Task Force was established to specifically assess ways of improving diversity, equity, and inclusion within the Department of the Air Force (DAF). The task force asked the RAND Corporation to explore several topics that resulted in deep-dive projects. One of the topics was assessing the efficacy of making Tuskegee University in Alabama a “feeder for the Air Force” to assist with increasing racial and ethnic diversity in officer accessions. Our first order of business was to explore, codify, and define the use of the term “feeder” in the Air Force context. The results of the exploration revealed that there is no official regulatory definition for the use of the term. Even if used as a term of art, it is still necessary to define and codify the term for the purposes of increasing diversity in accessions in a meaningful way.
Imagining an Air Force Feeder System

Google defines one of the uses of the term *feeder* to mean “a person or thing that supplies something” and further provides the specific application of this word as follows: “a school, sports team, etc. from which members move on to one more advanced . . . a feeder school for Florida State University” (Google, undated).\(^1\) Having determined the term *feeder* as appropriate for what the U.S. Air Force was considering, we then focused on codifying how the term might be used in and applied in a U.S. Air Force setting based on the specific request of exploring designating Tuskegee University as a potential feeder.

To that end, we determined that the best application of the term with respect to developing policy would be in the context of marketing and outreach. The U.S. Air Force should develop a named program that establishes partner relationships with colleges and universities as feeders to bolster marketing and outreach. We further determined that the application should transcend consideration of Tuskegee University alone, and that other institutions should also be included in the feeder program. Furthermore, the concept should not be relegated to just minority-serving institutions, such as historically black colleges and universities (HBCUs), as potential feeders for increasing diversity in the ranks. A common strategy in this effort for increasing diversity is to focus solely on HBCUs; however, numerous other colleges and universities produce minority graduates. Some of these ignored minority candidates are high-performing attendees of other accredited or high-profile institutions. We considered a broader group of colleges and universities to maximize the opportunities of reaching high-performing minority students at institutions beyond those attending HBCUs.

With respect to establishing a feeder system as a broadened marketing and outreach program, it is noteworthy that several colleges and universities have existing feeder relationships with the U.S. Air Force by definition but not in name. For example, the Air Force Reserve Officer Training Corps (AFROTC) program has relationships with several colleges and universities, including Tuskegee. Correspondingly, the request for considering Tuskegee as a feeder should connote something larger than the official pipelines for precommissioning that exist. By definition as discussed earlier, several colleges and universities currently feed the U.S. Air Force in terms of accessions. Taking this into account, we explored broadening the existing feeder relationship and the base of the current colleges and universities that could already be considered feeders. In this Perspective, we discuss how the U.S. Air Force should broaden the feeder concept into an officially named program—whether the term feeder is included in the designation or not—as a branding mechanism to market itself to more minority candidates.
Objective

In this Perspective, we provide conceptual design considerations for implementing a feeder system as an enhanced marketing and outreach program in the U.S. Air Force. The next section discusses existing feeder-like components of some institutions that could make them illustrative as feeder prototypes. We then explore considerations for the feeder system as a whole and possible criteria for evaluating candidate feeder schools. Finally, we discuss implementation concerns and distinguish the feeder program from other existing relationships, such as AFROTC.

The Corps of Cadets and AFROTC Programs as Feeder School Prototypes

Two predominant feeder relationships already exist that the DAF could leverage as prototypes—one with institutions with AFROTC programs, and the other being institutions with Corps of Cadets. Tuskegee University serves as a perfect model for considering institutions with existing AFROTC programs. For example, Tuskegee’s AFROTC program benefits from the institution’s reputation and demonstrated strength in producing high-performing diverse graduates as an HBCU. The DAF should also consider colleges and universities with similar characteristics (e.g., diverse student body, existing military presence on campus) that are known for producing high-quality graduates in the fields that are most desirable to the DAF, such as aerospace and cyber-related programs, as prime candidates for feeder school designation. Note that opportunities for increasing diversity in officer accessions also exist beyond schools with standing AFROTC programs.

Colleges and universities with Corps of Cadets programs offer another model of institutions with an existing military presence. Texas A&M and the Virginia Polytechnic Institute and State University (also known as Virginia Tech or VT) are the only large public universities with full-time Corps of Cadets (excluding the five U.S. service academies). Although distinct from AFROTC, the Corps of Cadets provides an optional, military-oriented “full-time leader development program,” and VT students who aspire to join AFROTC (or the Reserve Officers’ Training Corps [ROTC] of any other service) must first join the Corps. In this way, the two programs sustain a symbiotic, or feeder, relationship—the Corps feeds AFROTC, and AFROTC creates a pipeline for commissioned officers. Combined with VT leadership’s enduring support and attention to civilian-cadet relationships, the university is thus able to preserve and promote its senior military college tradition, and the military services retain a key officer pipeline (VT Corps of Cadets, undated-b).

The Corps of Cadets and AFROTC models each illustrate potential prototypes in the Air Force feeder institution.
Designing a Feeder System

Establishing feeder relationships is an innovative approach that requires little effort in terms of program content, design, and resources. The feeder program could significantly increase overall diversity in officer accessions through the fostering of partner relationships with targeted institutions that have an existing relationship and those that currently lack military presence on campus.

When designing the feeder program as a broadened approach to outreach and marketing, it is important for the U.S. Air Force to distinguish the feeder system from some of its potential components (i.e., what makes a feeder institution distinct from an AFROTC program or senior military college, without excluding those institutions). The ability to broaden marketing and outreach efforts without requiring significant resources is the defining feature of a feeder program that separates it from such existing efforts as AFROTC and Corps of Cadets. Next, we explore some features that a feeder system might have and what the designation would entail and provide for both the DAF and participating colleges or universities. The next several subsections discuss potential program attributes by order of level of effort from least to most involved.

Potential Low-Effort Program Activities

In terms of inputs, feeder relationships might involve formal or informal recognition as simple as bestowing the title of “feeder school,” and mutual endorsements by both the DAF and the institutions. The feeder designation could be listed on both the DAF and participating institution websites, social media accounts, and other forms of existing marketing and advertising. The DAF, for example, could publish and maintain an online directory of feeder schools known for assisting the U.S. Air Force in its goal to increase diversity in officer accessions. Participating colleges and universities could also display recognition as a feeder in similar...
fashion as they currently display other accreditations and awards. The DAF would receive increased exposure to high-performing minority students and the institutions would receive recognition that could be leveraged for prospective student outreach.

**Potential Higher-Effort Program Activities**

Feeder program activities with slightly higher levels of effort might include making DAF leadership available for keynote appearances and supporting partnership activities (e.g., mutual recruiting between the institution and the DAF). The feeder program would be an additive and targeted injection into existing marketing and outreach activities. It is also noteworthy that in almost all cases, DAF personnel (e.g., recruiters, area installations, ROTC departments) to support these activities are already local to the institution.

**Symbiotic Feeder Relationships Foster Mutual Benefits**

Having discussed and demonstrated some of the modest efforts it will take to design a feeder program, it is important to provide the conceptual underpinnings and the vision that should shape the program. Three principles underlie the definition of a feeder system for the DAF: (1) mutually assured construction, (2) cost-effectiveness, and (3) the program’s additive nature that broadens existing marketing and outreach efforts.

A feeder system does not necessarily incur the costs associated with establishing an official DAF program; it could operate effectively in the unofficial space by integrating into established recruiting arms. For example, regional AFROTC directors might solicit voluntary entries from colleges and universities for competitive feeder recognition at minimal dollar cost to the DAF (e.g., presentation of certificate, online publication in a periodic DAF news release). Efforts to increase diversity in the military are far from new, but a useful feeder system is novel. Rather than replacing established recruiting and outreach programs, a feeder system should leverage and synergize them.

**Mutual Benefits of Establishing a Feeder Program**

Formalizing the feeder program as broadened marketing and outreach strategy is a modest approach in terms of level of effort; however, it might have significant benefits for both the DAF and colleges or universities (see Table 1).

---

**TABLE 1**

**Symbiotic Relationship Between the “Feeder” and the “Fed”**

<table>
<thead>
<tr>
<th>Benefits for the DAF</th>
<th>Benefits for a Feeder Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widening the aperture for where college students,</td>
<td>Fulfilling the institution’s desires to be patriotic and</td>
</tr>
<tr>
<td>including minorities, are recruited</td>
<td>military-friendly</td>
</tr>
<tr>
<td>Increasing access to high-performing diverse students</td>
<td>Increasing the number of graduate job placements,</td>
</tr>
<tr>
<td>in required or short-filled academic disciplines</td>
<td>which is used for prospective student marketing</td>
</tr>
<tr>
<td>Developing and sustaining partner relationships with</td>
<td>Being recognized with the distinction of designation</td>
</tr>
<tr>
<td>colleges and universities</td>
<td>as a feeder college or university through DAF endorsement</td>
</tr>
<tr>
<td>Bolstering brand recognition of the U.S. Air Force in</td>
<td>Developing symbiotic recruitment partnerships</td>
</tr>
<tr>
<td>more segments of society</td>
<td></td>
</tr>
</tbody>
</table>
Colleges and universities designated as feeders would cost-effectively extend DAF’s outreach by capitalizing on institutions’ substantial network effects.

Colleges and universities designated as feeders would cost-effectively extend DAF’s outreach by capitalizing on institutions’ substantial network effects. Having colleges and universities display a military feeder designation might help combat potential perceptions that joining AFROTC or commissioning in the military is a fallback plan for high-performing racially and ethnically diverse college graduates. Similarly, receiving a feeder designation provides national recognition to the institution, and leverages the network effects of traditional DAF recruiting to generate interest in the institution by diverse service-oriented college applicants. This symbiotic reputation-building becomes not only self-sustaining but self-promoting.

Exploring Evaluative Factors for Feeder Designation

Institutions with existing military presence with high-performing diverse students in science and technology-related programs are ideal feeders. Universities with no prior military presence or a reluctance to establish AFROTC programs would not be natural military feeders, nor would those that lack a significantly diverse student body or top-performing science, technology, engineering, and mathematics (STEM) programs. Next, we explore (1) some factors that could make institutions, such as Tuskegee or VT, useful prototypes and (2) potential criteria to find promising new feeders.

- **Cultural proximity.** This concept encompasses the traditional propensity of a college or university for attracting and commissioning high-quality military officers. It includes such components as the presence of an established and supported Corps of Cadets (as at Texas A&M or VT), the quality of any existing AFROTC units, and the cultural ties between an educational institution and military service (as with Tuskegee or the senior military colleges).
- **Institutional interest.** This concept captures the degree of inclination in the university’s leadership to develop or maintain a close relationship with the military services. In contrast to cultural proximity, which focuses on an institution’s long-standing culture and tradition, this institutional interest relates to the attitudes of current university leadership. For example, schools that indicate a desire to establish or grow a Corps of Cadets or AFROTC unit would show high institutional interest. Col-
leges and universities with existing AFROTC units should still be evaluated in this area, because the continued support of university leadership is crucial to the quality of the program itself and the candidate pool. Combined with the above, these areas can generally be thought of as an institution’s “military friendliness.”

- **Student propensity to serve.** This area relates to the degree of openness to military service present in the college’s or university’s student body and applicant pool (in contrast to institutional interest, which captures the attitudes of university leadership). Sociological research has shown that, starting as early as middle school, trust in institutional authority is lower among racial and ethnic minorities compared with white Americans (Yeager et al., 2017). General attitudes toward educational institutions, law enforcement, or similar authorities could transfer to perceptions of the military. Conversely, a spring 2019 report from the Office of People Analytics (OPA) shows that black and Hispanic students have the highest propensity to serve, with the former reporting the most difficulty finding a full-time job (OPA, 2019). Thus, tangible benefits of military service (e.g., financial, educational, experiential) may be tied to racial and ethnic minority groups’ high propensity to serve. Geography is another significant factor in assessing propensity. In fiscal year 2017, four of the nine census regions in the United States showed at least a 2-percentage-point gap between their shares of youth population and new enlistees. The West South Central and South Atlantic regions had more accessions relative to population; whereas the East North Central and Middle Atlantic regions were underrepresented. The OPA surveys and geographic breakdowns are examples of data sources that the DAF can leverage to inform a targeting strategy for potential feeders.

- **Educational quality and relevance.** This area describes the quality of the institution’s academic programs for degrees that are relevant to the DAF. As the needs of the DAF change, and academic programs rise and fall, it would be important to work in concert with colleges and universities desirous of maintaining feeder status to establish plans to meet near- and long-term recruitment objectives to optimize the ability of the feeder institutions to produce officers with desired skills to be relevant. Currently, such programs likely include aeronautical engineering, space, and cyber-related fields.

- **Minority student strength.** This area captures the prevalence of high-performing, professionally
High-performing minority students attend colleges and universities across the country and often receive several competitive non-military offers. Competitive minority students with the potential to excel in AFROTC and as officers. Although colleges and universities with a minority-majority student body (where the proportion of non-white students exceeds 50 percent) are likely to be strong in this area—including HBCUs and Hispanic-serving institutions (HSIs)—they should not comprise an exclusive list. High-performing minority students attend colleges and universities across the country and often receive several competitive non-military offers. Massachusetts Institute of Technology (MIT) is a prime example of an institution with top-performing diverse graduates from programs relevant to the DAF that is neither an HBCU nor HSI. Even institutions without a traditional military orientation (those with medium-low cultural proximity) but known for producing top graduates from diverse backgrounds that find work at federal agencies, such as NASA or the U.S. Department of Energy, could show promise to be a feeder.

It is important to note that these evaluative factors are not meant to exclude institutions with low scores in these areas or imply that colleges and universities with high scores across the board will be the best feeders. Rather, they indicate topical considerations that are pertinent to the discussion of whether an institution shows promise as a feeder. The greatest returns on investment might come from targeting colleges and universities that score highly in all but one or two factors. For example, an accredited or high-profile institution that lacks institutional interest in military presence on campus or geopolitical inclination could become a key diversity-officer pipeline if feeder designation is accompanied by tailored community outreach. In the next sections, we synthesize key considerations in establishing a feeder system into thematic considerations for the DAF.

**Next Steps for the DAF to Consider When Choosing to Establish a Feeder System**

A fundamental prerequisite to officer accession is obtaining a bachelor’s degree. Thus, the educational quality of an institution must be scrutinized if it is to be considered a feeder; this is especially true for those degree programs with the greatest DAF manpower demand. The U.S. Air Force will need to make trade-off determinations when determining which colleges and universities to target as potential feeders—for example, between institutions that have student bodies with significant minority student populations and those known to be military-friendly.
Best Undergraduate Aerospace, Aeronautical, and Astronautical Engineering and Cyber-Related Programs

The 2020 college rankings from *U.S. News & World Report* of the best 11 colleges and universities with aerospace, aeronautical, and astronautical engineering and cyber-related degree programs—all fields highly applicable to the technical skills and expertise required by the DAF—are included in Table 2.8

However, we are not suggesting that the DAF create a list of top aerospace and cybertechnology schools and use that solely to target high-performing minority students. Rather, educational quality and relevance are some of several factors that the DAF should consider when targeting higher-education institutions for feeder designation. There are high-quality minority students at colleges and universities that are neither HBCUs/HSIs nor listed in Table 2. The DAF will need to balance program quality and relevance and minority representation on campus with the other factors.

Leverage Feeder Prototypes at Existing Colleges and Universities

In establishing what is essentially a new recognition program, a key concern is to give it some sort of weight; if being deemed a feeder does not impart prestige or provide measurable results to the college or university and the DAF, the program is likely to wither quickly. To that end, it is helpful to start with those that already exist in this unofficial feeder space—the low-hanging fruit that require minimal mental gymnastics to be perceived as military feeders.

Key indicators might include hosting a large and/or established AFROTC detachment, maintaining a full-time

The educational quality of an institution must be scrutinized if it is to be considered a feeder; this is especially true for those degree programs with the greatest DAF manpower demand.

COrps of Cadets, or having exceptional cultural or historical ties to military service. By launching a core network of unofficially official feeders, the program is able to grow legs in a relatively low-risk environment before searching for new feeders in potentially neutral or hostile waters. Such relationships are also likely to be most flexible to program tweaks and changes implemented as a result of the soft launch.

Find New Feeder Colleges and Universities with Diverse Student Bodies That Produce Graduates with Skillsets Desired by the DAF

The long-term potential of a feeder program lies in what it is able to achieve beyond simply tacking on to existing organizations. For example, once the program is established and respected in the national arena, the aperture can
widen beyond our prototypical models. The best future feeders might be the ones that today lack a Corps of Cadets, an AFROTC detachment, or even a signaled interest in developing relationships with the military. But any college or university that has a track record for producing top-quality graduates—especially minority graduates—with even a moderate inclination toward government service presents an opportunity for targeted outreach. Perhaps the greatest return on a feeder system lies in affording the DAF another cost-effective foothold in the college talent marketplace, finding more untapped potential for quality officer candidates, and, ultimately, increasing the diversity of officer accessions.

### TABLE 2
Best Undergraduate Colleges and Universities with DAF-Applicable Programs

<table>
<thead>
<tr>
<th>College/University</th>
<th>Location</th>
<th>Aero-Related Rank</th>
<th>Cyber Rank</th>
<th>Enrollment</th>
<th>Existing AFROTC and/or Corps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts Institute of Technology</td>
<td>Cambridge, Mass.</td>
<td>1</td>
<td>1</td>
<td>4,361</td>
<td>Det. 365 (host)</td>
</tr>
<tr>
<td>Georgia Institute of Technology</td>
<td>Atlanta, Ga.</td>
<td>2</td>
<td>4</td>
<td>16,561</td>
<td>Det. 165 (host)</td>
</tr>
<tr>
<td>California Institute of Technology</td>
<td>Pasadena, Calif.</td>
<td>3</td>
<td>—</td>
<td>901</td>
<td>—</td>
</tr>
<tr>
<td>Embry-Riddle Aeronautical University</td>
<td>Daytona Beach, Fla.</td>
<td>4</td>
<td>—</td>
<td>6,399</td>
<td>Det. 157 (host)</td>
</tr>
<tr>
<td>Purdue University, West Lafayette</td>
<td>West Lafayette, Ind.</td>
<td>4</td>
<td>10</td>
<td>34,920</td>
<td>Det. 220 (host)</td>
</tr>
<tr>
<td>Stanford University</td>
<td>Stanford, Calif.</td>
<td>6</td>
<td>4</td>
<td>6,366</td>
<td>Det. 045 (partner)</td>
</tr>
<tr>
<td>The University of Texas at Austin</td>
<td>Austin, Tex.</td>
<td>7</td>
<td>8</td>
<td>40,048</td>
<td>Det. 825 (host)</td>
</tr>
<tr>
<td>University of Michigan, Ann Arbor</td>
<td>Ann Arbor, Mich.</td>
<td>8</td>
<td>7</td>
<td>30,318</td>
<td>Det. 390 (host)</td>
</tr>
<tr>
<td>University of Illinois Urbana-Champaign</td>
<td>Champaign, Ill.</td>
<td>9</td>
<td>6</td>
<td>33,683</td>
<td>Det. 190 (host)</td>
</tr>
<tr>
<td>University of Colorado Boulder</td>
<td>Boulder, Colo.</td>
<td>10</td>
<td>—</td>
<td>30,300</td>
<td>Det. 105 (host)</td>
</tr>
<tr>
<td>Texas A&amp;M University, College Station</td>
<td>College Station, Tex.</td>
<td>11</td>
<td>—</td>
<td>55,568</td>
<td>Det. 805 (host) and Corps of Cadets</td>
</tr>
<tr>
<td>Carnegie Mellon University</td>
<td>Pittsburgh, Pa.</td>
<td>—</td>
<td>2</td>
<td>6,947</td>
<td>Det. 730 (partner)</td>
</tr>
<tr>
<td>University of California, Berkeley</td>
<td>Berkeley, Calif.</td>
<td>—</td>
<td>3</td>
<td>30,853</td>
<td>Det. 085 (host)</td>
</tr>
<tr>
<td>Cornell University</td>
<td>Ithaca, N.Y.</td>
<td>—</td>
<td>9</td>
<td>15,182</td>
<td>Det. 520 (host)</td>
</tr>
<tr>
<td>Princeton University</td>
<td>Princeton, N.J.</td>
<td>—</td>
<td>11</td>
<td>5,428</td>
<td>Det. 485 (partner)</td>
</tr>
</tbody>
</table>

NOTES: Aero-Related = This term includes aerospace, aeronautical, and astronautical engineering programs; Det. = Detachment.
Notes

1 Authors searched the term feeder in Google.com, and this definition was what was returned.

2 For more information about Tuskegee University’s ROTC programs, see Tuskegee University, undated.

3 For more information about the history of each school’s Corps of Cadets program, see Texas A&M University Corps of Cadets, undated; and VT Corps of Cadets, undated-b.

4 For more information about the mission and philosophy of the university’s Corps of Cadets, see Virginia Tech Corps of Cadets, undated-a.

5 A 2016 article in the New England Journal of Public Policy examined the reason black women join the military at higher rates than other racial and ethnic groups, and the author concluded that many black women are attracted to the military because they have few economic opportunities in the civilian labor market and lack an adequate social safety net (see Melin, 2016). According to Army recruiters, “many young Americans see the Army as a last resort, not a top choice for their future” (Myers, 2017). Moreover, “most high schools have no more than a few enlisted students, particularly in high-performing districts where . . . joining the military has sometimes been seen as a step below enrolling in community college” (Hu, 2010). This quote from a 2010 New York Times article highlights that this perception is prevalent as high school graduates contemplate their next life steps. Such perceptions might become heightened as high-performing students enter college.

6 For an example of a way to objectively evaluate a school’s military friendliness, see Military Friendly, undated.

7 These data are based on Figure 3a from the March 2020 Inspired to Serve final report. For more information, see National Commission on National, Military, and Public Service, 2020.

8 To see ranking results for aero-related programs, see U.S. News & World Report, 2020a. For cyber-related ranking results, see U.S. News & World Report, 2020b.

References


Myers, Megan, “Top Recruiter: Just 136,000 Out of 33 Million Young Americans Would Join the Army,” Army Times, October 12, 2017.


Tuskegee University, “Military Science,” webpage, undated. As of July 15, 2021: https://www.tuskegee.edu/programs-courses/colleges-schools/military-science


Virginia Tech Corps of Cadets, homepage, undated-a. As of July 16, 2021: https://vtcc.vt.edu/


VT Corps of Cadets—See Virginia Tech Corps of Cadets.

About the Authors

Dwayne M. Butler is a senior management scientist and professor of policy analysis at the RAND Corporation with substantive knowledge or experience in leadership; human capital management; diversity, equity, and inclusion; organizational theory; educational theory with particular focus on adult and continuing education; strategic planning; strategic communications; and vocational psychology. He received an Ed.D. and B.A.s in Spanish and economics. He also has a Ph.D. in organizational psychology and an M.S. in administration.

Sarah W. Denton is a policy analyst II in the RAND Corporation’s Defense and Political Sciences unit and also serves as a business market analyst in RAND’s National Security Research Division. She has an M.A. in philosophy with a concentration in ethics and public affairs and two B.A.s in political science and philosophy.

Ignacio A. Lara is a Ph.D. student at the Pardee RAND Graduate School, an assistant policy researcher at the RAND Corporation, and an active-duty U.S. Air Force officer. He has a B.S. in operations research.
About This Perspective

This Perspective responds to a direct question posed to RAND Project AIR FORCE (PAF) by a Department of the Air Force task force formed in June 2020 in support of the U.S. Air Force and U.S. Space Force to address the issue of racial, ethnic and other demographic disparities and their impact on the force. PAF researchers were tasked with exploring several topics that resulted in deep-dive projects. One of the topics was an assessment on the efficacy of designating Tuskegee University as a feeder for the Air Force to assist with increasing racial and ethnic diversity in officer accessions.

Several colleges and universities currently feed the U.S. Air Force in terms of accessions. Taking this into account, the authors explored broadening the existing feeder relationship base beyond the current schools that could be considered feeders. The authors also discuss how the U.S. Air Force should broaden the feeder concept into an official named program as a branding mechanism to market itself to more minority candidates.

This work was conducted within the Workforce, Development, and Health program of RAND Project AIR FORCE as part of the fiscal year 2020 project, “Analytical Support for Department of Air Force Diversity Taskforce.”

The views expressed in this document represent the personal views of the author and are not necessarily the views of the Department of Defense or of the Department of the Air Force.

Funding

Funding for this research was made possible through the concept formulation provision of the Department of the Air Force–RAND Sponsoring Agreement. PAF uses concept formulation funding to support a variety of activities, including research plan development; direct assistance on short-term, decision-focused Department of the Air Force requests; exploratory research; outreach and communications initiatives; and other efforts undertaken in support of the development, execution, management, and reporting of PAF’s approved research agenda.

RAND Project AIR FORCE

RAND Project AIR FORCE (PAF), a division of the RAND Corporation, is the Department of the Air Force’s (DAF’s) federally funded research and development center for studies and analyses, supporting both the United States Air Force and the United States Space Force. PAF provides the DAF with independent analyses of policy alternatives affecting the development, employment, combat readiness, and support of current and future air, space, and cyber forces. Research is conducted in four programs: Strategy and Doctrine; Force Modernization and Employment; Resource Management; and Workforce, Development, and Health. The research reported here was prepared under contract FA7014-16-D-1000.

Additional information about PAF is available on our website: www.rand.org/paf/

The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

Research Integrity

Our mission to help improve policy and decisionmaking through research and analysis is enabled through our core values of quality and objectivity and our unwavering commitment to the highest level of integrity and ethical behavior. To help ensure our research and analysis are rigorous, objective, and nonpartisan, we subject our research publications to a robust and exacting quality-assurance process; avoid both the appearance and reality of financial and other conflicts of interest through staff training, project screening, and a policy of mandatory disclosure; and pursue transparency in our research engagements through our commitment to the open publication of our research findings and recommendations, disclosure of the source of funding of published research, and policies to ensure intellectual independence. For more information, visit www.rand.org/about/principles.

RAND’s publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.

Limited Print and Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law. This representation of RAND intellectual property is provided for noncommercial use only. Unauthorized posting of this publication online is prohibited. Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please visit www.rand.org/pubs/permissions.html.

For more information on this publication, visit www.rand.org/t/PEA909-3.

© 2021 RAND Corporation