Cover Letter

Subject: National Interest Waiver Petition

Dear Sir/Madam,

I am writing to respectfully submit my petition for a **National Interest Waiver (NIW)** under the employment-based, second preference (EB-2) immigrant visa category.

Included in this petition package are the following documents, which collectively attest to the national interest of my work and my qualifications for a National Interest Waiver:

1. **The check ($715) payable to the U.S. Department of Homeland Security for I-140 Application fee**
2. **The check ($2,805) payable to the U.S. Department of Homeland Security for I-907 Premium Processing fee**
3. **The check ($300) payable to the U.S. Department of Homeland Security for Asylum Program fee**
4. **Application Forms:**
    a. **Form G-1145**
    b. **Form I-907**
    c. **Form I-140**
    d. **ETA Form 9089**
    e. **Appendix A**
    f. **ETA 9089 Final Determination**
5. **Photocopies of the Passport, F-1 Visa, Form I-20, Form I-94**
6. **NIW Petition Letter**
7. **Index of Exhibits**
8. **Exhibits**

Thank you for your time and consideration.

Sincerely,

First Last

G-1145, E-Notification of Application/Petition Acceptance
https://www.uscis.gov/g-1145
https://www.uscis.gov/sites/default/files/document/forms/g-1145.pdf

I-907, Request for Premium Processing Service
https://www.uscis.gov/i-907
https://www.uscis.gov/sites/default/files/document/forms/i-907.pdf

I-140, Immigrant Petition for Alien Workers
https://www.uscis.gov/i-140
https://www.uscis.gov/sites/default/files/document/forms/i-140.pdf

Form ETA-9089, Application for Permanent Employment Certification
https://www.dol.gov/agencies/eta/foreign-labor/forms
https://www.dol.gov/sites/dolgov/files/ETA/oflc/pdfs/ETA-9089%20Application%20-%20508%20Compliant%20-%20Expires%2010-31-2025.pdf

Form ETA-9089, Appendix A
https://www.dol.gov/agencies/eta/foreign-labor/forms
https://www.dol.gov/sites/dolgov/files/ETA/oflc/pdfs/ETA-9089-%20Appendix%20A%20-%20508%20Compliant%20-Expires%2010-31-2025.pdf

ETA-9089, Final Determination
https://www.dol.gov/agencies/eta/foreign-labor/forms
https://www.dol.gov/sites/dolgov/files/ETA/oflc/pdfs/ETA-9089%20Final%20Determination%20-Compliant.pdf

Passport

Visa

i-20

i-94

U.S. Department of Homeland Security
Citizenship and Immigration Services

RE: EB-2 Petition for Permanent Residency with request for a National Interest Waiver

Petitioner/Beneficiary: Mr. First Last
Type of Petition: Form I-140
Classification Sought: INA §203(b)(2)(B)

National Interest Waiver Petition Letter

Dear Immigration Officer:

This petition is respectfully submitted in support of Mr. First Last 's application for classification as a qualified immigrant under the preference of advanced degree professional/alien of exceptional ability. The evidence submitted herewith will specifically demonstrate that Mr. First Last qualifies for a National Interest Waiver under the standards set by Matter of Dhanasar, 26 I&N Dec. 884 (AAO 2016).

Specifically, the evidence submitted will prove that:
1. Mr. First Last is a member of the professions holding an advanced degree;
2. Mr. First Last 's proposed endeavor has both substantial merit and national importance;
3. Mr. First Last is well positioned to advance the proposed endeavor; and
4. On balance, it would be beneficial to the United States to waive the requirements.

Note that the standard of proof for petitions filed for National Interest Waiver cases is the "preponderance of the evidence" standard. See Matter of Dhanasar, 26 I&N Dec. 884, 889 (AAO 2016). Thus, if the petitioner submits relevant, probative, and credible evidence that leads USCIS to believe that the claim is "more likely than not" or "probably true," the petitioner has satisfied the standard of proof. Matter of E-M-, 20 I&N Dec. 77, 79-80 (Comm'r 1989); see also U.S. v. Cardoza-Fonseca, 480 U.S. 421 (1987) (discussing "more likely than not" as a greater than 50% chance of an occurrence taking place).

Exhibit Commands Usage Examples (Remove This Section in Final Submission)

1. Create an exhibit with an index and label

```
\exhibittext{cv}{1}{CV of Mr. XXXX.}
```

where "cv" is the label, "1" is the index, and "CV of Mr. XXXX." is the text after the index. It'll be like ***(Exhibit 1, CV of Mr. XXXX.)*** .

2. Create an exhibit with an index only

```
\exhibittext{cv-without-lalel}{2}{}.
```

It'll be like ***(Exhibit 2)*** .

3. Refer to an existing exhibit Fully

```
\refexhibit{cv}.
```

It'll be like ***Exhibit 1, CV of Mr. XXXX.*** . Note that there are no parentheses here.

4. Refer to an existing exhibit's index

```
\refexhibitnum{cv}.
```

It'll be like ***(Exhibit 1)***.

1. MR. First Last IS A MEMBER OF THE PROFESSIONS HOLDING AN ADVANCED DEGREE

(Exhibit 3-1, the Master of Science degree in Computer Science of Mr. First Last.) Moreover, Mr. First Last had a good academic outstanding with a high GPA of 4.0 ***(Exhibit 3-2, the Official Transcript of Mr. First Last.)*** .

2. MR. First Last 'S PROPOSED ENDEAVOR

3. SUBSTANTIAL MERIT AND NATIONAL IMPORTANCE

3.1. Mr. First Last 's Proposed Endeavor Has Substantial Merit

On February 12, 2024, the White House Office of Science and Technology Policy (OSTP) released an updated list of critical and emerging technologies that are potentially significant to U.S. national security. ***(Exhibit 9, Critical and Emerging Technologies List 2024 Update.)***

3.2. Mr. First Last 's Proposed Endeavor Has National Importance

4. MR. First Last IS WELL POSITIONED TO ADVANCE THE PROPOSED ENDEAVOR

Dhanasar indicates that the second prong of the analysis must consider whether the petitioner is well positioned to advance the proposed endeavor (Dhanasar, at 890). This multifactorial assessment includes an evaluation of the petitioner's education, skills, knowledge, and record of success in related efforts; a model or plan for future activities; any progress made toward achieving the proposed endeavor; and the interest of potential customers, users, investors, or other relevant entities or individuals (Id.). Importantly, Dhanasar points out the inherent difficulty in "forecasting feasibility or future success", even in the presence of a cogent plan and competent execution; therefore, petitioners are not required to show that their proposed endeavor is more likely than not to succeed (Id.). ***(Exhibit 22, the Matter of DHANASAR, Petitioner, 26 I&N Dec. 884 (AAO 2016))***

4.1. Education, Skills, and Knowledge

4.2. Mr. First Last has been recognized by the academia

4.3. Record of Success in Related or Similar Efforts and Interest of Potential Customers, Users, Investors, and Other Relevant Individuals

4.3.1. Mr. First Last 's research has been published in some of the top conferences and journals in the field

4.3.2. Researchers from around the world have applied upon Mr. First Last 's research to further their own research

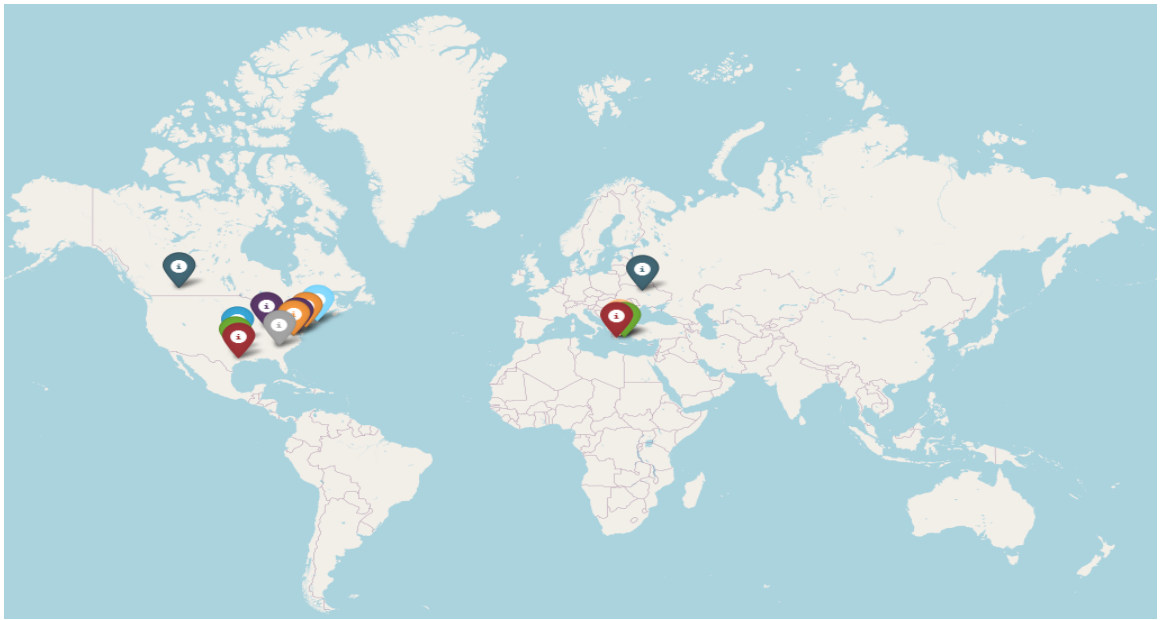

Figure 1: The worldwide citation map of Mr. First Last 's work.

The citation map can be generated from this Github Repo[1].

4.3.3. Mr. First Last served as a reviewer of others' research work

4.3.4. Mr. First Last is the awardee of the Fellowships for Graduate Research

4.3.5. Mr. First Last 's research is highly novel and influential in the field

4.3.6. Mr. First Last 's significant original contributions are evident from renowned media

4.3.7. Mr. First Last continuously contributes to U.S. National Science Foundation (NSF) projects

4.3.8. Mr. First Last 's research and innovations are extensively adopted by users, researchers, and companies

4.3.9. Progress toward achieving the proposed endeavor

4.3.10. Plan for future activity in the field

5. ON BALANCE, IT WOULD BE BENEFICIAL TO THE UNITED STATES TO WAIVE THE REQUIREMENTS

5.1. The Significant Benefit of Waiving the Labor Certification Requirement

5.2. National Interest and Public Benefit

5.3. Economic Impact and Industry Growth

5.4. Expertise Beyond Ordinary Training and Value Over Local Workforce

5.5. Transdisciplinary Contributions Beyond a Single Employer

5.6. Non-Competition with Local Workforce

5.7. Reasonability of Waiving PERM and Self-Petition

5.8. Timely Contribution to Emerging Technologies

5.9. Unique Expertise and Critical Need

Considering the above factors and the evidence presented therein, Mr.First Last satisfies this prong.

6. CONCLUSION

As the documentary evidence and corroborating testimony from experts in the field establish, Mr.First Last is ***a member of the professions holding an advanced degree***. He proposes to continue his research on **SOMETHING**, both of which are included in the ***2024 Update of the White House Released Critical and Emerging Technologies List***. His endeavor is clearly with ***substantial merit*** and ***national importance***. Mr. First Last 's education, experience, expertise, record of publication and citation, media appearance, industry and academic recognition, and history of successful research in the field all indicate that Mr.First Last is ***well positioned to***

[1]https://github.com/ChenLiu-1996/CitationMap

advance the proposed endeavor. These facts establish that it is beneficial to the United States to waive the requirements of a job offer and labor certification.

Index of Exhibits

Exhibit Commands Usage Examples (Remove This Section in Final Submission)

1. Create an entry by referring to the index in body.tex

```
\labelexhibit{cv}{CV of Mr. First Last}{cv}
```

where "cv" is the label in the body.tex (that will be replaced by its index), "CV of Mr. First Last" is the text, and "cv" at the end is the label for this entry. It'll be like

Exhibit 1 CV of Mr. First Last

2. Create an entry by creating a new index

```
\labelexhibit{2}{CV of Mr. First Last}{2}
```

where "2" is the index showing in "Exhibit 2", "CV of Mr. First Last" is the text, and "2" at the end is the label for this entry (that can be referred to in exhibits.tex). It'll be like

Exhibit 2 CV of Mr. First Last

This is helpful when creating a parent entry to encompass some existing children exhibits in body.tex. For example,

```
\labelexhibit{3}{Master of Science Degree in Computer Science of Mr. First Last}{3}

\labelexhibitsub{ms-in-cs}{Diploma Copy}{ms-in-cs}

\labelexhibitsub{ms-in-cs-gpa}{Official Transcript}{ms-in-cs-gpa}
```

will be like

Exhibit 3 Master of Science Degree in Computer Science of Mr. First Last

3-1 Diploma Copy

3-2 Official Transcript

The labels "ms-in-cs" and "ms-in-cs-gpa" are in the body.tex, while "3" is not.

More examples are coming below.

Exhibit 4 Recommendation Letter from Prof. SOMEONE

Note that the following documents are widely in use for the NIW application, so I have included them here.

Exhibit 9 Critical and Emerging Technologies List 2024 Update

Exhibit 22 Matter of DHANASAR, Petitioner, 26 I&N Dec. 884 (AAO 2016)

Exhibit Commands Usage Examples (Remove This Section in Final Submission)

1. Create a cover page for an exhibit

```
\refexhibitlabel{cv}
\includepdf[pages=-]{cv.pdf}
```

where "cv" is the label in the index_of_exhibits.tex, "cv.pdf" is under exhibits/. It will create a cover page followed by the cv.pdf.

Define pages to be included:

- All pages

  ```
  \includepdf[pages=-]{cv.pdf}
  ```

- One page (1st page)

  ```
  \includepdf[pages=1]{cv.pdf}
  ```

- Range ([2,3])

  ```
  \includepdf[pages=2-3]{cv.pdf}
  ```

- Some pages

  ```
  \includepdf[pages={1,2}]{cv.pdf}
  ```

2. Create a cover page for a parent exhibit and some child exhibits

```
\refexhibitlabel{3}

\refexhibitsublabel{ms-in-cs}

\refexhibitsublabel{ms-in-cs-gpa}

\includepdf[pages=-]{ms-in-cs.pdf}
\includepdf[pages=-]{ms-in-cs-gpa.pdf}
```

where "3", "ms-in-cs", and "ms-in-cs-gpa" are the labels in the index_of_exhibits.tex, "ms-in-cs.pdf" and "ms-in-cs-gpa.pdf" are under exhibits/. It will create a cover page followed by the two pdf files. Note the space between ‘refexhibitlabel‘ and refexhibitsublabel.

Exhibit 3

Master of Science Degree in Computer Science of Mr. First Last

Exhibit 3-1 Diploma Copy

Exhibit 3-2 Official Transcript

Exhibit content

Exhibit content

Exhibit content

More examples are coming below.

Exhibit 4

Recommendation Letter from Prof. SOMEONE

Recommendation Letter

Recommendation Letter

Exhibit 9

Critical and Emerging Technologies List 2024 Update

CRITICAL AND EMERGING TECHNOLOGIES LIST UPDATE

A Report by the

FAST TRACK ACTION SUBCOMMITTEE ON CRITICAL AND EMERGING TECHNOLOGIES

of the

NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

February 2024

About the National Science and Technology Council

The National Science and Technology Council (NSTC) is the principal means by which the Executive Branch coordinates science and technology policy across the diverse entities that make up the Federal research and development enterprise. A primary objective of the NSTC is to ensure that science and technology policy decisions and programs are consistent with the President's stated goals. The NSTC prepares research and development strategies that are coordinated across Federal agencies aimed at accomplishing multiple national goals. The work of the NSTC is organized under committees that oversee subcommittees and working groups focused on different aspects of science and technology. More information is available at http://www.whitehouse.gov/ostp/nstc.

About the Office of Science and Technology Policy

The Office of Science and Technology Policy (OSTP) was established by the National Science and Technology Policy, Organization, and Priorities Act of 1976 to provide the President and others within the Executive Office of the President with advice on the scientific, engineering, and technological aspects of the economy, national security, homeland security, health, foreign relations, the environment, and the technological recovery and use of resources, among other topics. OSTP leads interagency science and technology policy coordination efforts, assists the Office of Management and Budget with an annual review and analysis of Federal research and development in budgets, and serves as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal Government. More information is available at http://www.whitehouse.gov/ostp.

About the Fast Track Action Subcommittee on Critical and Emerging Technologies

The NSTC established this Fast Track Action Subcommittee in 2020 to identify critical and emerging technologies to inform national security-related activities. In support of this work, the Subcommittee coordinated across the NSTC and the National Security Council (NSC) to identify priority critical and emerging technology subfields, updated no less than every two years.

About this Document

This document identifies critical and emerging technologies.

Copyright Information

NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

Chair

Arati Prabhakar, Director, Office of Science and Technology Policy

Executive Director

Kei Koizumi, Acting Executive Director, National Science and Technology Council, Principal Deputy Director for Policy, OSTP

FAST TRACK ACTION SUBCOMMITTEE ON CRITICAL AND EMERGING TECHNOLOGIES

Co-Chairs

Hila Levy, Office of Science and Technology Policy

Garrett Berntsen, National Security Council (through December 2023)

Tantum (Teddy) Collins, National Security Council (from December 2023)

Members

Department of Agriculture

Department of Commerce

Department of Defense

Department of Energy

Department of Health and Human Services

Department of Homeland Security

Department of the Interior

Department of Justice

Department of State

Department of Transportation

National Aeronautics and Space Administration

National Science Foundation

National Security Agency

National Security Council staff

National Space Council staff

Office of the Director of National Intelligence

Office of Management and Budget

Office of Science and Technology Policy

Table of Contents

Abbreviations and Acronyms

AI	artificial intelligence
CET	critical and emerging technology(ies)
NSTC	National Science and Technology Council
OSTP	Office of Science and Technology Policy
RF	radio frequency

Overview

Critical and emerging technologies (CETs) are a subset of advanced technologies that are potentially significant to U.S. national security. The 2022 *National Security Strategy* identifies three national security interests: protect the security of the American people, expand economic prosperity and opportunity, and realize and defend the democratic values at the heart of the American way of life.[1] The NSTC established this Fast Track Action Subcommittee in 2020 to identify critical and emerging technologies to inform national security-related activities. This list identifies CETs with the potential to further these interests and builds on the October 2020 *National Strategy for Critical and Emerging Technologies,* which contains an initial list of priority CETs.[2] This updated document expands upon that original CET list and the February 2022 update by identifying subfields for each CET with a focus, where possible, on core technologies that continue to emerge and modernize, while remaining critical to a free, open, secure, and prosperous world. While enabling or supporting technologies are sometimes referenced, other enabling capabilities, like a modernized, technically capable workforce, are excluded. Though certain enabling capabilities are not explicitly included, they remain critical to the promotion and protection of all CETs.

Though not a strategy document, this updated CET list may inform government-wide and agency-specific efforts concerning U.S. technological competitiveness and national security. This list may also inform future efforts to prioritize across CETs and their component subfields; however, *this list should not be interpreted as a priority list for either policy development or funding*. Instead, this list should be used as a resource to: inform future efforts that promote U.S. technological leadership; cooperate with allies and partners to advance and maintain shared technological advantages; develop, design, govern, and use CETs that yield tangible benefits for society and are aligned with democratic values; and develop U.S. Government measures that respond to threats against U.S. security. Departments and agencies may consult this CET list when developing, for example, initiatives to research and develop technologies that support national security missions, compete for international talent, and protect sensitive technology from misappropriation and misuse.

To generate this updated CET list, the Office of Science and Technology Policy (OSTP) facilitated an extensive interagency deliberative process through the National Science and Technology Council (NSTC) and in coordination with the National Security Council (NSC). The responsible NSTC subcommittee included subject matter experts from 18 departments, agencies, and offices in the Executive Office of the President, who identified CET subfields that their home organizations determined may be critical to U.S. national security. As such, this updated CET list, which was coordinated through both the NSTC and the NSC, reflects an interagency consensus on updates to the 2022 CETs.

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[1] https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf

[2] https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/10/National-Strategy-for-CET.pdf

Critical and Emerging Technologies List

The following critical and emerging technology areas are of particular importance to the national security of the United States:

- Advanced Computing
- Advanced Engineering Materials
- Advanced Gas Turbine Engine Technologies
- Advanced and Networked Sensing and Signature Management
- Advanced Manufacturing
- Artificial Intelligence
- Biotechnologies
- Clean Energy Generation and Storage
- Data Privacy, Data Security, and Cybersecurity Technologies
- Directed Energy
- Highly Automated, Autonomous, and Uncrewed Systems (UxS), and Robotics
- Human-Machine Interfaces
- Hypersonics
- Integrated Communication and Networking Technologies
- Positioning, Navigation, and Timing (PNT) Technologies
- Quantum Information and Enabling Technologies
- Semiconductors and Microelectronics
- Space Technologies and Systems

Critical and Emerging Technology Subfields

Each identified CET area includes a set of key subfields that describe its scope in more detail.

Advanced Computing

- Advanced supercomputing, including for AI applications
- Edge computing and devices
- Advanced cloud services
- High-performance data storage and data centers
- Advanced computing architectures
- Advanced modeling and simulation
- Data processing and analysis techniques
- Spatial computing

Advanced Engineering Materials

- Materials by design and material genomics
- Materials with novel properties to include substantial improvements to existing properties
- Novel and emerging techniques for material property characterization and lifecycle assessment

Advanced Gas Turbine Engine Technologies

- Aerospace, maritime, and industrial development and production technologies
- Full-authority digital engine control, hot-section manufacturing, and associated technologies

Advanced and Networked Sensing and Signature Management

- Payloads, sensors, and instruments
- Sensor processing and data fusion
- Adaptive optics
- Remote sensing of the Earth
- Geophysical sensing
- Signature management
- Detection and characterization of pathogens and of chemical, biological, radiological and nuclear weapons and materials
- Transportation-sector sensing
- Security-sector sensing
- Health-sector sensing
- Energy-sector sensing
- Manufacturing-sector sensing
- Building-sector sensing
- Environmental-sector sensing

Advanced Manufacturing

- Advanced additive manufacturing
- Advanced manufacturing technologies and techniques including those supporting clean, sustainable, and smart manufacturing, nanomanufacturing, lightweight metal manufacturing, and product and material recovery

Artificial Intelligence (AI)

- Machine learning
- Deep learning
- Reinforcement learning
- Sensory perception and recognition
- AI assurance and assessment techniques
- Foundation models
- Generative AI systems, multimodal and large language models
- Synthetic data approaches for training, tuning, and testing
- Planning, reasoning, and decision making
- Technologies for improving AI safety, trust, security, and responsible use

Biotechnologies

- Novel synthetic biology including nucleic acid, genome, epigenome, and protein synthesis and engineering, including design tools
- Multi-omics and other biometrology, bioinformatics, computational biology, predictive modeling, and analytical tools for functional phenotypes
- Engineering of sub-cellular, multicellular, and multi-scale systems
- Cell-free systems and technologies
- Engineering of viral and viral delivery systems
- Biotic/abiotic interfaces
- Biomanufacturing and bioprocessing technologies

Clean Energy Generation and Storage

- Renewable generation
- Renewable and sustainable chemistries, fuels, and feedstocks
- Nuclear energy systems
- Fusion energy
- Energy storage
- Electric and hybrid engines
- Batteries
- Grid integration technologies
- Energy-efficiency technologies
- Carbon management technologies

Data Privacy, Data Security, and Cybersecurity Technologies

- Distributed ledger technologies
- Digital assets
- Digital payment technologies
- Digital identity technologies, biometrics, and associated infrastructure
- Communications and network security
- Privacy-enhancing technologies
- Technologies for data fusion and improving data interoperability, privacy, and security
- Distributed confidential computing
- Computing supply chain security
- Security and privacy technologies in augmented reality/virtual reality

Directed Energy

- Lasers
- High-power microwaves
- Particle beams

Highly Automated, Autonomous, and Uncrewed Systems (UxS), and Robotics

- Surface
- Air
- Maritime
- Space
- Supporting digital infrastructure, including High Definition (HD) maps
- Autonomous command and control

Human-Machine Interfaces

- Augmented reality
- Virtual reality
- Human-machine teaming
- Neurotechnologies

Hypersonics

- Propulsion
- Aerodynamics and control
- Materials, structures, and manufacturing
- Detection, tracking, characterization, and defense
- Testing

Integrated Communication and Networking Technologies

- Radio-frequency (RF) and mixed-signal circuits, antennas, filters, and components
- Spectrum management and sensing technologies
- Future generation wireless networks
- Optical links and fiber technologies
- Terrestrial/undersea cables
- Satellite-based and stratospheric communications
- Delay-tolerant networking
- Mesh networks/infrastructure independent communication technologies
- Software-defined networking and radios
- Modern data exchange techniques
- Adaptive network controls
- Resilient and adaptive waveforms

Positioning, Navigation, and Timing (PNT) Technologies

- Diversified PNT-enabling technologies for users and systems in airborne, space-based, terrestrial, subterranean, and underwater settings
- Interference, jamming, and spoofing detection technologies, algorithms, analytics, and networked monitoring systems
- Disruption/denial-resisting and hardening technologies

Quantum Information and Enabling Technologies

- Quantum computing
- Materials, isotopes, and fabrication techniques for quantum devices
- Quantum sensing
- Quantum communications and networking
- Supporting systems

Semiconductors and Microelectronics

- Design and electronic design automation tools
- Manufacturing process technologies and manufacturing equipment
- Beyond complementary metal-oxide-semiconductor (CMOS) technology
- Heterogeneous integration and advanced packaging
- Specialized/tailored hardware components for artificial intelligence, natural and hostile radiation environments, RF and optical components, high-power devices, and other critical applications
- Novel materials for advanced microelectronics
- Microelectromechanical systems (MEMS) and Nanoelectromechanical systems (NEMS)
- Novel architectures for non-Von Neumann computing

Space Technologies and Systems

- In-space servicing, assembly, and manufacturing as well as enabling technologies
- Technology enablers for cost-effective on-demand, and reusable space launch systems
- Technologies that enable access to and use of cislunar space and/or novel orbits
- Sensors and data analysis tools for space-based observations
- Space propulsion
- Advanced space vehicle power generation
- Novel space vehicle thermal management
- Crewed spaceflight enablers
- Resilient and path-diverse space communication systems, networks, and ground stations
- Space launch, range, and safety technologies

Exhibit 22

Matter of DHANASAR, Petitioner, 26 I&N Dec. 884 (AAO 2016)

Matter of DHANASAR, Petitioner

Decided December 27, 2016

U.S. Department of Homeland Security
U.S. Citizenship and Immigration Services
Administrative Appeals Office

USCIS may grant a national interest waiver if the petitioner demonstrates: (1) that the foreign national's proposed endeavor has both substantial merit and national importance; (2) that he or she is well positioned to advance the proposed endeavor; and (3) that, on balance, it would be beneficial to the United States to waive the job offer and labor certification requirements. *Matter of New York State Dep't of Transp*., 22 I&N Dec. 215 (Acting Assoc. Comm'r 1998), vacated.

ON BEHALF OF PETITIONER: Gerard M. Chapman, Esquire, Greensboro, North Carolina

In this decision, we have occasion to revisit the analytical framework for assessing eligibility for "national interest waivers" under section 203(b)(2)(B)(i) of the Immigration and Nationality Act, 8 U.S.C. § 1153(b)(2)(B)(i) (2012). The self-petitioner, a researcher and educator in the field of aerospace engineering, filed an immigrant visa petition seeking classification under section 203(b)(2) of the Act as a member of the professions holding an advanced degree. The petitioner also sought a "national interest waiver" of the job offer otherwise required by section 203(b)(2)(A).

The Director of the Texas Service Center denied the petition under the existing analytical framework, concluding that the petitioner qualifies for classification as a member of the professions holding an advanced degree but that a waiver of the job offer requirement would not be in the national interest of the United States. Upon de novo review, and based on the revised national interest standard adopted herein, we will sustain the appeal and approve the petition.

I. LEGAL BACKGROUND

Subparagraph (A) of section 203(b)(2) of the Act makes immigrant visas available to "qualified immigrants who are members of the professions holding advanced degrees or their equivalent or who because of their exceptional ability in the sciences, arts, or business, will substantially benefit prospectively the national economy, cultural or educational

interests, or welfare of the United States." Under subparagraph (A), immigrant visas are available to such individuals only if their "services in the sciences, arts, professions, or business are sought by an employer in the United States."

Before hiring a foreign national under this immigrant classification, an employer must first obtain a permanent labor certification from the United States Department of Labor ("DOL") under section 212(a)(5)(A)(i) of the Act, 8 U.S.C. § 1182(a)(5)(A)(i) (2012). *See also* 8 C.F.R. § 204.5(k)(4)(i) (2016). A labor certification demonstrates that DOL has determined that there are not sufficient workers who are able, willing, qualified, and available at the place where the alien is to perform such skilled or unskilled labor, and the employment of such alien will not adversely affect the wages and working conditions of workers in the United States similarly employed. In its labor certification application, the employer must list the position's job requirements consistent with what is normally required for the occupation. *See* 20 C.F.R. § 656.17(h)(1) (2016). Moreover, the job requirements described on the labor certification application must represent the actual minimum requirements for the job opportunity. *See* 20 C.F.R. § 656.17(i)(1). That is, the employer may not tailor the position requirements to the foreign worker's qualifications; it may only list the position's minimum requirements, regardless of the foreign worker's additional skills that go beyond what is normally required for the occupation. The employer must then test the labor market to determine if able, willing, or qualified U.S. workers are available with the advertised minimum qualifications. If such U.S. workers are found, the employer may not hire the foreign worker for the position, even if the foreign worker clearly has more skills (beyond the advertised qualifications). If the employer does not identify such U.S. workers and DOL determines that those workers are indeed unavailable, DOL will certify the labor certification. After securing the DOL-approved labor certification, the employer may then file a petition with DHS requesting the immigrant classification.

Under subparagraph (B) of section 203(b)(2), however, the Secretary of Homeland Security may waive the requirement of a "job offer" (namely, that the beneficiary's services are sought by a U.S. employer) and, under the applicable regulations, of "a labor certification." 8 C.F.R. § 204.5(k)(4)(ii).[1] That subparagraph states, in pertinent part, that the

[1] While appearing to limit national interest waivers to only aliens possessing exceptional ability in the sciences, arts, or business, 8 C.F.R. § 204.5(k)(4)(ii) was superseded in part by section 302(b)(2) of the Miscellaneous and Technical Immigration and Naturalization Amendments of 1991, Pub. L. No. 102-232, 105 Stat. 1733, 1743 (continued . . .)

Secretary "may, when the [Secretary] deems it to be in the national interest, waive the requirements of subparagraph (A) that an alien's services in the sciences, arts, professions, or business be sought by an employer in the United States."[2] Section 203(b)(2)(i) of the Act.

USCIS may grant a national interest waiver as a matter of discretion if the petitioner satisfies both subparagraphs (A) and (B). Thus, a petitioner who seeks a "national interest waiver" must first satisfy subparagraph (A) by demonstrating that the beneficiary qualifies as a member of the professions holding an advanced degree or as an individual of exceptional ability. *See* 8 C.F.R. § 204.5(k)(1)–(3) (providing definitions and considerations for making such determinations); *see also* section 203(b)(2)(C) of the Act (providing that possession of requisite academic degree or professional license "shall not by itself be considered sufficient evidence of exceptional ability"). The petitioner must then satisfy subparagraph (B) by establishing that it would be in the national interest to waive the "job offer" requirement under subparagraph (A).[3] *See* 8 C.F.R. § 204.5(k)(4)(ii). This two-part statutory scheme is relatively straightforward, but the term "national interest" is ambiguous. Undefined by statute and regulation, "national interest" is a broad concept subject to various interpretations.

In 1998, under the legacy Immigration and Naturalization Service, we issued a precedent decision establishing a framework for evaluating national interest waiver petitions. *Matter of New York State Dep't of Transp.* ("*NYSDOT*"), 22 I&N Dec. 215 (Acting Assoc. Comm'r 1998).

("MTINA"). Section 302(b)(2) of MTINA amended section 203(b)(2)(B)(i) of the Act by inserting the word "professions" after the word "arts," and thereby made the national interest waiver available to members of the professions holding advanced degrees in addition to individuals of exceptional ability.

[2] Pursuant to section 1517 of the Homeland Security Act ("HSA") of 2002, Pub. L. No. 107-296, 116 Stat. 2135, 2311 (codified at 6 U.S.C. § 557 (2012)), any reference to the Attorney General in a provision of the Act describing functions that were transferred from the Attorney General or other Department of Justice official to the Department of Homeland Security by the HSA "shall be deemed to refer to the Secretary" of Homeland Security. *See also* 6 U.S.C. § 542 note (2012); 8 U.S.C. § 1551 note (2012).

[3] To do so, a petitioner must go beyond showing the individual's expertise in a particular field. The regulation at 8 C.F.R. § 204.5(k)(2) defines "exceptional ability" as "a degree of expertise significantly above that ordinarily encountered" in a given area of endeavor. By statute, individuals of exceptional ability are generally subject to the job offer/labor certification requirement; they are not exempt by virtue of their exceptional ability. Therefore, whether a given petitioner seeks classification as an individual of exceptional ability, or as a member of the professions holding an advanced degree, that individual cannot qualify for a waiver just by demonstrating a degree of expertise significantly above that ordinarily encountered in his field of expertise.

The *NYSDOT* framework looks first to see if a petitioner has shown that the area of employment is of "substantial intrinsic merit." *Id.* at 217. Next, a petitioner must establish that any proposed benefit from the individual's endeavors will be "national in scope." *Id.* Finally, the petitioner must demonstrate that the national interest would be adversely affected if a labor certification were required for the foreign national. *Id.*

Based on our experience with that decision in the intervening period, we believe it is now time for a reassessment. While the first prong has held up under adjudicative experience, the term "intrinsic" adds little to the analysis yet is susceptible to unnecessary subjective evaluation.[4] Similarly, the second prong has caused relatively few problems in adjudications, but occasionally the term "national in scope" is construed too narrowly by focusing primarily on the geographic impact of the benefit. While *NYSDOT* found a civil engineer's employment to be national in scope even though it was limited to a particular region, that finding hinged on the geographic connections between New York's bridges and roads and the national transportation system. Certain locally or regionally focused endeavors, however, may be of national importance despite being difficult to quantify with respect to geographic scope.

What has generated the greatest confusion for petitioners and adjudicators, however, is *NYSDOT*'s third prong. First, this prong is explained in several different ways within *NYSDOT* itself, leaving the reader uncertain what ultimately is the relevant inquiry. We initially state the third prong as requiring a petitioner to "demonstrate that the national interest would be adversely affected if a labor certification were required." *NYSDOT*, 22 I&N Dec. at 217. We then alternatively describe the third prong as requiring the petitioner to demonstrate that the individual "present[s] a national benefit so great as to outweigh the national interest inherent in the labor certification process." *Id.* at 218. Immediately thereafter, we restate the third prong yet again: the petitioner must establish that the individual will "serve the national interest to a substantially greater degree than would an available U.S. worker having the same minimum qualifications."[5] *Id.* Finally, in what may be construed as either a fourth restatement of prong three or as an explanation of how to satisfy it, we state that "it clearly must be established that the alien's past record justifies projections of future benefit to the national interest." *Id.* at 219. A footnote

[4] *Cf., e.g., 24/7 Records, Inc. v. Sony Music Entm't, Inc.*, 514 F. Supp. 2d 571, 575 (S.D.N.Y. 2007) ("'Intrinsic value' is an inherently subjective and speculative concept.").

[5] Other, slight variations of the third prong emerge later in the decision. *See NYSDOT*, 22 I&N at 220 ("to a greater extent than U.S. workers"); *see also id.* at 221 ("considerably outweigh").

to this statement clarifies that USCIS seeks "a past history of demonstrable achievement with some degree of influence on the field as a whole." *Id.* at 219 n.6. Although residing in footnote 6, this "influence" standard has in practice become the primary yardstick against which petitions are measured.[6]

Second, and a more fundamental challenge than parsing its several restatements, *NYSDOT*'s third prong can be misinterpreted to require the petitioner to submit, and the adjudicator to evaluate, evidence relevant to the very labor market test that the waiver is intended to forego. The first iteration of prong three, that the national interest would be adversely affected if a labor certification were required, implies that petitioners should submit evidence of harm to the national interest. The third iteration, that the individual will serve the national interest to a substantially greater degree than would an available U.S. worker having the same minimum qualifications, suggests that petitioners should submit evidence comparing foreign nationals to unidentified U.S. workers. These concepts have proven to be difficult for many qualified individuals to establish or analyze in the abstract. It has proven particularly ill-suited for USCIS to evaluate petitions from self-employed individuals, such as entrepreneurs. In *NYSDOT*, we even "acknowledge[d] that there are certain occupations wherein individuals are essentially self-employed, and thus would have no U.S. employer to apply for a labor certification." *Id.* at 218 n.5. Nonetheless, we did not modify the test to resolve this scenario, which continues to challenge petitioners and USCIS adjudicators. Lastly, this concept of harm-to-national-interest is not required by, and unnecessarily narrows, the Secretary's broad discretionary authority to grant a waiver when he "deems it to be in the national interest."

II. NEW ANALYTICAL FRAMEWORK

Accordingly, our decision in *NYSDOT* is ripe for revision. Today, we vacate *NYSDOT* and adopt a new framework for adjudicating national interest waiver petitions, one that will provide greater clarity, apply more flexibly to circumstances of both petitioning employers and self-petitioning

[6] While this "influence" standard rests upon the reasonable notion that past success will often predict future benefit, our adjudication experience in the years since *NYSDOT* has revealed that there are some talented individuals for whom past achievements are not necessarily the best or only predictor of future success.

individuals, and better advance the purpose of the broad discretionary waiver provision to benefit the United States.[7]

Under the new framework, and after eligibility for EB-2 classification has been established, USCIS may grant a national interest waiver if the petitioner demonstrates by a preponderance of the evidence:[8] (1) that the foreign national's proposed endeavor has both substantial merit and national importance; (2) that the foreign national is well positioned to advance the proposed endeavor; and (3) that, on balance, it would be beneficial to the United States to waive the requirements of a job offer and thus of a labor certification. If these three elements are satisfied, USCIS may approve the national interest waiver as a matter of discretion.[9]

The first prong, substantial merit and national importance, focuses on the specific endeavor that the foreign national proposes to undertake. The endeavor's merit may be demonstrated in a range of areas such as business, entrepreneurialism, science, technology, culture, health, or education. Evidence that the endeavor has the potential to create a significant economic impact may be favorable but is not required, as an endeavor's merit may be established without immediate or quantifiable economic impact. For example, endeavors related to research, pure science, and the furtherance of human knowledge may qualify, whether or not the potential accomplishments in those fields are likely to translate into economic benefits for the United States.

In determining whether the proposed endeavor has national importance, we consider its potential prospective impact. An undertaking may have national importance for example, because it has national or even global implications within a particular field, such as those resulting from certain improved manufacturing processes or medical advances. But we do not evaluate prospective impact solely in geographic terms. Instead, we look for broader implications. Even ventures and undertakings that have as their focus one geographic area of the United States may properly be considered to have national importance. In modifying this prong to assess "national

[7] Going forward, we will use "petitioners" to include both employers who have filed petitions on behalf of employees and individuals who have filed petitions on their own behalf (namely, self-petitioners).

[8] Under the "preponderance of the evidence" standard, a petitioner must establish that he or she more likely than not satisfies the qualifying elements. *Matter of Chawathe*, 25 I&N Dec. 369, 376 (AAO 2010). We will consider not only the quantity, but also the quality (including relevance, probative value, and credibility) of the evidence. *Id.*

[9] Because the national interest waiver is "purely discretionary," *Schneider v. Chertoff*, 450 F.3d 944, 948 (9th Cir. 2006), the petitioner also must show that the foreign national otherwise merits a favorable exercise of discretion. *See Zhu v. Gonzales*, 411 F.3d 292, 295 (D.C. Cir. 2005); *cf. Matter of Jean*, 23 I&N Dec. 373, 383 (A.G. 2002).

importance" rather than "national in scope," as used in *NYSDOT*, we seek to avoid overemphasis on the geographic breadth of the endeavor. An endeavor that has significant potential to employ U.S. workers or has other substantial positive economic effects, particularly in an economically depressed area, for instance, may well be understood to have national importance.

The second prong shifts the focus from the proposed endeavor to the foreign national. To determine whether he or she is well positioned to advance the proposed endeavor, we consider factors including, but not limited to: the individual's education, skills, knowledge and record of success in related or similar efforts; a model or plan for future activities; any progress towards achieving the proposed endeavor; and the interest of potential customers, users, investors, or other relevant entities or individuals.

We recognize that forecasting feasibility or future success may present challenges to petitioners and USCIS officers, and that many innovations and entrepreneurial endeavors may ultimately fail, in whole or in part, despite an intelligent plan and competent execution. We do not, therefore, require petitioners to demonstrate that their endeavors are more likely than not to ultimately succeed. But notwithstanding this inherent uncertainty, in order to merit a national interest waiver, petitioners must establish, by a preponderance of the evidence, that they are well positioned to advance the proposed endeavor.

The third prong requires the petitioner to demonstrate that, on balance, it would be beneficial to the United States to waive the requirements of a job offer and thus of a labor certification. On the one hand, Congress clearly sought to further the national interest by requiring job offers and labor certifications to protect the domestic labor supply. On the other hand, by creating the national interest waiver, Congress recognized that in certain cases the benefits inherent in the labor certification process can be outweighed by other factors that are also deemed to be in the national interest. Congress entrusted the Secretary to balance these interests within the context of individual national interest waiver adjudications.

In performing this analysis, USCIS may evaluate factors such as: whether, in light of the nature of the foreign national's qualifications or proposed endeavor, it would be impractical either for the foreign national to secure a job offer or for the petitioner to obtain a labor certification;[10]

[10] For example, the labor certification process may prevent a petitioning employer from hiring a foreign national with unique knowledge or skills that are not easily articulated in a labor certification. *See generally* 20 C.F.R. § 656.17(i). Likewise, because of the nature of the proposed endeavor, it may be impractical for an entrepreneur or (continued . . .)

whether, even assuming that other qualified U.S. workers are available, the United States would still benefit from the foreign national's contributions; and whether the national interest in the foreign national's contributions is sufficiently urgent to warrant forgoing the labor certification process. We emphasize that, in each case, the factor(s) considered must, taken together, indicate that on balance, it would be beneficial to the United States to waive the requirements of a job offer and thus of a labor certification.

We note that this new prong, unlike the third prong of *NYSDOT*, does not require a showing of harm to the national interest or a comparison against U.S. workers in the petitioner's field. As stated previously, *NYSDOT*'s third prong was especially problematic for certain petitioners, such as entrepreneurs and self-employed individuals. This more flexible test, which can be met in a range of ways as described above, is meant to apply to a greater variety of individuals.

III. ANALYSIS

The director found the petitioner to be qualified for the classification sought by virtue of his advanced degrees. We agree that he holds advanced degrees and therefore qualifies under section 203(b)(2)(A). The remaining issue before us is whether the petitioner has established, by a preponderance of the evidence, that he is eligible for and merits a national interest waiver.

The petitioner proposes to engage in research and development relating to air and space propulsion systems, as well as to teach aerospace engineering, at North Carolina Agricultural and Technical State University ("North Carolina A&T"). The petitioner holds two master of science degrees, in mechanical engineering and in applied physics, as well as a Ph.D. in engineering, from North Carolina A&T. At the time of filing the instant petition, he also worked as a postdoctoral research associate at the university. The record reflects that the petitioner's graduate and postgraduate research has focused on hypersonic propulsion systems (systems involving propulsion at speeds of Mach 5 and above) and on computational fluid dynamics. He has developed a validated computational model of a high-speed air-breathing propulsion engine, as well as a novel numerical method for accurately calculating hypersonic air flow. The petitioner intends to continue his research at the university.

The extensive record includes: reliable evidence of the petitioner's credentials; copies of his publications and other published materials that

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self-employed inventor, when advancing an endeavor on his or her own, to secure a job offer from a U.S. employer.

cite his work; evidence of his membership in professional associations; and documentation regarding his research and teaching activities. The petitioner also submitted several letters from individuals who establish their own expertise in aerospace, describe the petitioner's research in detail and attest to his expertise in the field of hypersonic propulsion systems.

We determine that the petitioner is eligible for a national interest waiver under the new framework. First, we conclude that the petitioner has established both the substantial merit and national importance of his proposed endeavor. The petitioner demonstrated that he intends to continue research into the design and development of propulsion systems for potential use in military and civilian technologies such as nano-satellites, rocket-propelled ballistic missiles, and single-stage-to-orbit vehicles. In letters supporting the petition, he describes how research in this area enhances our national security and defense by allowing the United States to maintain its advantage over other nations in the field of hypersonic flight. We find that this proposed research has substantial merit because it aims to advance scientific knowledge and further national security interests and U.S. competitiveness in the civil space sector.

The record further demonstrates that the petitioner's proposed endeavor is of national importance. The petitioner submitted probative expert letters from individuals holding senior positions in academia, government, and industry that describe the importance of hypersonic propulsion research as it relates to U.S. strategic interests. He also provided media articles and other evidence documenting the interest of the House Committee on Armed Services in the development of hypersonic technologies and discussing the potential significance of U.S. advances in this area of research and development. The letters and the media articles discuss efforts and advances that other countries are currently making in the area of hypersonic propulsion systems and the strategic importance of U.S. advancement in researching and developing these technologies for use in missiles, satellites, and aircraft.

Second, we find that the record establishes that the petitioner is well positioned to advance the proposed endeavor. Beyond his multiple graduate degrees in relevant fields, the petitioner has experience conducting research and developing computational models that support the mission of the United States Department of Defense ("DOD") to develop air superiority and protection capabilities of U.S. military forces, and that assist in the development of platforms for Earth observation and interplanetary exploration. The petitioner submitted detailed expert letters describing U.S. Government interest and investment in his research, and the record includes documentation that the petitioner played a significant role in projects funded by grants from the National Aeronautics and Space

Administration ("NASA") and the Air Force Research Laboratories ("AFRL") within DOD.[11] Thus, the significance of the petitioner's research in his field is corroborated by evidence of peer and government interest in his research, as well as by consistent government funding of the petitioner's research projects. The petitioner's education, experience, and expertise in his field, the significance of his role in research projects, as well as the sustained interest of and funding from government entities such as NASA and AFRL, position him well to continue to advance his proposed endeavor of hypersonic technology research.

Third and finally, we conclude that, on balance, it would be beneficial to the United States to waive the requirements of a job offer and thus of a labor certification. As noted above, the petitioner holds three graduate degrees in fields tied to the proposed endeavor, and the record demonstrates that he possesses considerable experience and expertise in a highly specialized field. The evidence also shows that research on hypersonic propulsion holds significant implications for U.S. national security and competitiveness. In addition, the repeated funding of research in which the petitioner played a key role indicates that government agencies, including NASA and the DOD, have found his work on this topic to be promising and useful. Because of his record of successful research in an area that furthers U.S. interests, we find that this petitioner offers contributions of such value that, on balance, they would benefit the United States even assuming that other qualified U.S. workers are available.

In addition to conducting research, the petitioner proposes to support teaching activities in science, technology, engineering, and math ("STEM") disciplines. He submits letters favorably attesting to his teaching abilities at the university level and evidence of his participation in mentorship programs for middle school students. While STEM teaching has substantial merit in relation to U.S. educational interests, the record does not indicate by a preponderance of the evidence that the petitioner would be engaged in activities that would impact the field of STEM education more broadly. Accordingly, as the petitioner has not established by a preponderance of the evidence that his proposed teaching activities meet the "national importance" element of the first prong of the new framework, we do not address the remaining prongs in relation to the petitioner's teaching activities.

[11] Although the director of North Carolina A&T's Center for Aerospace Research ("CAR") is listed as the lead principal investigator on all grants for CAR research, the record establishes that the petitioner initiated or is the primary award contact on several funded grant proposals and that he is the only listed researcher on many of the grants.

IV. CONCLUSION

The record demonstrates by a preponderance of the evidence that: (1) the petitioner's research in aerospace engineering has both substantial merit and national importance; (2) the petitioner is well positioned to advance his research; and (3) on balance, it is beneficial to the United States to waive the requirements of a job offer and thus of a labor certification. We find that the petitioner has established eligibility for and otherwise merits a national interest waiver as a matter of discretion.

In visa petition proceedings, it is the petitioner's burden to establish eligibility for the immigration benefit sought. Section 291 of the Act, 8 U.S.C. § 1361 (2012). The petitioner has met that burden.

ORDER: The appeal is sustained and the petition is approved.