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

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[redacted]

FILE: [redacted] Office: NEBRASKA SERVICE CENTER Date: MAY 24 2005

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IN RE: Petitioner:
Beneficiary: [redacted]

PETITION: Immigrant Petition for Alien Worker as an Alien of Extraordinary Ability Pursuant to Section 203(b)(1)(A) of the Immigration and Nationality Act, 8 U.S.C. § 1153(b)(1)(A)

ON BEHALF OF PETITIONER:

SELF-REPRESENTED

INSTRUCTIONS:

This is the decision of the Administrative Appeals Office in your case. All documents have been returned to the office that originally decided your case. Any further inquiry must be made to that office.

Mari Johnson

for Robert P. Wiemann, Director
Administrative Appeals Office

DISCUSSION: The employment-based immigrant visa petition was denied by the Director, Nebraska Service Center, and is now before the Administrative Appeals Office on appeal. The appeal will be sustained and the petition will be approved.

The petitioner seeks classification as an employment-based immigrant pursuant to section 203(b)(1)(A) of the Immigration and Nationality Act (the Act), 8 U.S.C. § 1153(b)(1)(A), as an alien of extraordinary ability in the sciences. The director determined the petitioner had not established the sustained national or international acclaim necessary to qualify for classification as an alien of extraordinary ability.

Section 203(b) of the Act states, in pertinent part, that:

> (1) Priority Workers. -- Visas shall first be made available . . . to qualified immigrants who are aliens described in any of the following subparagraphs (A) through (C):
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> > (A) Aliens with Extraordinary Ability. -- An alien is described in this subparagraph if --
> >
> > > (i) the alien has extraordinary ability in the sciences, arts, education, business, or athletics which has been demonstrated by sustained national or international acclaim and whose achievements have been recognized in the field through extensive documentation,
> > >
> > > (ii) the alien seeks to enter the United States to continue work in the area of extraordinary ability, and
> > >
> > > (iii) the alien's entry to the United States will substantially benefit prospectively the United States.

As used in this section, the term "extraordinary ability" means a level of expertise indicating that the individual is one of that small percentage who have risen to the very top of the field of endeavor. 8 C.F.R. § 204.5(h)(2). The specific requirements for supporting documents to establish that an alien has sustained national or international acclaim and recognition in his or her field of expertise are set forth in the regulation at 8 C.F.R. § 204.5(h)(3). The relevant criteria will be addressed below. It should be reiterated, however, that the petitioner must show that he has earned sustained national or international acclaim at the very top level.

This petition, filed on July 18, 2003, seeks to classify the petitioner as an alien with extraordinary ability as a researcher in the field of applied mechanics and composite materials. At the time of filing, the petitioner was employed as an Assistant Professor in the Department of Mechanical and Nuclear Engineering at Kansas State University.

The regulation at 8 C.F.R. § 204.5(h)(3) indicates that an alien can establish sustained national or international acclaim through evidence of a one-time achievement (that is, a major, international recognized award). Barring the alien's receipt of such an award, the regulation outlines ten criteria, at least three of which must be satisfied for an alien to establish the sustained acclaim necessary to qualify as an alien of extraordinary ability. We find that the petitioner's evidence satisfies the following three criteria.

Evidence of the alien's participation, either individually or on a panel, as a judge of the work of others in the same or an allied field of specification for which classification is sought.

The petitioner submitted evidence showing that he reviewed two proposals for the National Materials Advisory Board, U.S. National Academies of Science, Engineering, and Medicine. The petitioner also submitted evidence showing that he was invited multiple times to serve as a panelist to review proposals submitted to the National Science Foundation. In addition, the petitioner provided correspondence and e-mails showing that he reviewed academic textbooks published by McGraw-Hill and John Wiley and Sons. The petitioner also reviewed a proposal for the South Carolina Commission on Higher Education. In this case, the petitioner has received multiple requests for his expertise as a reviewer from a wide variety of sources. When taken as a whole, we find that the evidence presented is adequate to satisfy this criterion.

Evidence of the alien's original scientific, scholarly, artistic, athletic, or business-related contributions of major significance in the field.

The petitioner provided several witness letters in support of the petition. We cite representative examples here.

Dr. James Williams, School of Engineering Professor of Teaching Excellence and Professor of Applied Mechanics in the Mechanical Engineering Department, Massachusetts Institute of Technology, states:

> [The petitioner] developed an exact solution for elastic waves scattered by a large number of scatterers, often called a multiple-scattering problem. Scattering is a common phenomenon when a wave, such as light, electromagnetism or sound, encounters an obstacle in its path of propagation; the wave reflects in all directions, known as scattering. . . . [The petitioner's] analytical capability has enabled him to develop a mathematically rigorous solution for such a complicated problem that has remained unsolved by the research community for decades.
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> Based on this solution, [the petitioner] developed an elegant methodology called *scatterer polymerization* that extends the capability of the multiple-scatterer solution. . . . This development broke the barrier of computer memory limitation and became the enabling technology that unlocked the door to large-scale simulations of wave phenomena.
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> * * *
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> [The petitioner] subsequently utilized his theoretical accomplishments and developed a computational system that is capable of analyzing the wave scattering phenomena involving thousands of scatterers using a typical desktop computer. The most remarkable feature about his computational system is that the simulations produced by his methodology are in fact analytically exact solutions to such unimaginably complicated problems. I am aware of no prior system that is

close to such capability and accuracy. Furthermore, through his extensive large-scale simulations, an exciting new wave phenomenon was independently discovered, leading to a new area of material research called phononic materials.

Dr. Y. Jack Weitsman, Distinguished Professor in the Department of Mechanical, Aerospace, and Biomedical Engineering at the University of Tennessee at Knoxville, states:

> [The petitioner's] main research area is wave propagation phenomena in complex systems, with emphasis on fiber-reinforced composite materials. The objective of his research is to develop new techniques that can quantitatively characterize the internal structural of these highly important materials. However, his achievement reaches far beyond that. [The petitioner] has developed a computational system that is capable of performing full-scale "deterministic" simulations of the wave propagation process in a fiber-reinforced composite sample that contains thousands of fibers. The phrase "deterministic" means that the physical and geometrical features of each fiber are considered in full detail regardless of the total number of fibers contained within the composite material. This computational methodology, a significant achievement by itself, is the combined result of two other significant theoretical accomplishments:
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> 1. [The petitioner] developed a theory that provides an exact solution to the most general case of the wave scattering problem, involving an arbitrary number of scatterers in a two dimensional space;
> 2. [The petitioner] developed a truly ingenious scheme to construct the so-called abstract scatterers, which consist of an arbitrary number of real scatterers, thereby overcoming the computational barrier imposed by restricted computer memory available for the analysis of such a highly complex problem.
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> To my knowledge, such a large-scale simulation has never been possible before, and [the petitioner's] accomplishment is certain to advance the research of many investigators in several fields, including composite materials.

Youqui Wang, Associate Professor, Department of Mechanical and Nuclear Engineering, Kansas State University, states:

> Reinforced plastics, a traditional form of composite material, have become widely deployed in mission-critical structural components since the 70's. Diagnosing and servicing these aging structural components has become an urgent technical challenge. The research [the petitioner] conducted addressed this challenge. He first developed a technique that employs thermography to quantitatively characterize foreign inclusions in polymeric composite sandwich panels. This work is based on the very simple idea that internal structure could be revealed by surface temperature distribution when the structure is uniformly heated. This work is a prime example of [the petitioner's] ability to bring enormous insight through rigorous mathematical analysis to some very simple ideas, leading to significant scientific discoveries. Afterwards, [the petitioner] took on the even more challenging task of developing a technique that can detect hidden delamination (cracks) between layers of sandwich panels. It was more of a challenge because delamination might not cause significant temperature

> change, nor become visible. To address this issue, [the petitioner] used ultrasonic techniques, which is more sensitive to cracks. Through his analysis of the wave propagation process in multiple-layered panels, [the petitioner] was able to identify some traits in the detectable signals and precisely locate the site of the delamination. This work has resulted in a series of publications in one of the industries [sic] leading publications *Materials Evaluation* (2001, 2002, 2003), as a guide to industry.

Dr. Raymond Nagem, Associate Professor of Aerospace and Mechanical Engineering, Boston University, asserts that the petitioner's "*scatterer polymerization methodology* is a major advance in the practical implementation of large-scale simulations involving thousands of scatterers."

Dr. Wei Tong, Associate Professor, Department of Mechanical Engineering, Yale University, states:

> [The petitioner] established exact solutions of general wave scattering problems and developed a methodology called *scatterer polymerization* that further extends the capability of a solution he developed earlier. Furthermore he utilized his theoretical developments to conduct full-scale simulations of wave stop-band phenomenon in fiber reinforced composite materials. [The petitioner] was among the first to report the finding of the stop-band phenomenon (now commonly called band gap phenomenon) in composite materials. These original and highly insightful findings by [the petitioner] have placed him at the cutting edge of a whole new research area of photonic and phononic materials that span many disciplines such as acoustics, oceanography, as well as electromagnetic waves.

Cleo Neal, Manufacturing Engineer, Raytheon Aircraft Company, describes the petitioner as "a leading expert in various nondestructive testing (NDT) techniques, including ultrasonic and thermographic methods."

Dr. H. N. Hashemi, Professor of Mechanical Engineering, Northeastern University, states:

> [The petitioner] developed a thermographic technique to detect the foreign inclusions in sandwich panels. . . . The significance of [the petitioner's] test procedure is that it can not only quantitatively determine the material properties of the inclusion so that the exact material can be identified, but also pin-point the exact location of the inclusion within the structure. His work extends the thermography beyond its traditional qualitative regime to a new quantitative regime.
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> In the late 1980's [the petitioner] proposed a criterion to predict material failure and crack growth direction in composite materials. His criterion, which was later proven . . . by his colleagues and other researchers around the world, has become one of the indispensable tools in understanding the fracture and fatigue behaviors in composite materials.

Dr. Bingmei Fu, Assistant Professor of Mechanical Engineering at the University of Nevada Las Vegas, states:

> [The petitioner's] extraordinary contribution to this field includes two theoretical developments, namely the multiple-scattering theory, and the scatterer polymerization methodology, and a large-scale deterministic simulation system. His multiple scattering theory offers the exact solution for the wave scattering by any numbers of scatterers, an unimaginable complicated system that no one had thought solvable before. His scatterer polymerization methodology helped reduced the problem size to be manageable by a regular computer yet maintains the mathematical rigor of the multiple scattering theory. With the combination of these theoretical developments, [the petitioner] developed a computational system that can perform simulations of wave scattering process by thousands of scatterers in the deterministic manner . . . .

The record includes additional letters of support from researchers at the University of Delaware, the Chinese Academy of Sciences, and Intel Corporation.

The petitioner also submitted copies of numerous journal articles that cite his published findings. The large number of citations presented by the petitioner shows that many other researchers have acknowledged his influence and found his work to be significant. Such evidence bolsters the witnesses' claims that the petitioner's findings are of major significance in the field of applied mechanics and composite materials.

In this case, the record adequately demonstrates the petitioner's contributions are important not only to the research institutions where he has worked, but throughout the greater field. Scientific experts from throughout the United States have acknowledged the value of the petitioner's work and its significance to the greater scientific community. Therefore, we find that the evidence presented is adequate to satisfy this criterion.

> *Evidence of the alien's authorship of scholarly articles in the field, in professional or major trade publications or other major media.*

The petitioner submitted evidence of his authorship of several articles appearing in publications such as *Materials Evaluation*, *Ultrasonics*, *Engineering Fracture Mechanics*, and the *Journal of Composite Materials*. In addition, the petitioner co-authored two books published in China.

As noted previously, the petitioner submitted evidence showing that his published articles are widely cited. When judging the influence and impact that the petitioner's published work has had, the very act of publication is not as reliable a gauge as is the citation history of the published works. Publication alone may serve as evidence of originality, but it is difficult to conclude that a published article is important or influential if there is little evidence that other researchers have relied upon the petitioner's findings. In this case, however, the large number of cites to the petitioner's articles demonstrates widespread international interest in, and reliance on, his work. We find that the petitioner's evidence is adequate to satisfy this criterion.

Accordingly, the petitioner has satisfied three of the regulatory criteria required for classification as an alien of extraordinary ability. Pursuant to the statute and regulations as they are currently constituted, the petitioner qualifies for the classification sought.

In review, while not all of the evidence presented in this matter carries the weight imputed to it by the petitioner, the totality of the evidence establishes an overall pattern of sustained national and international acclaim and extraordinary ability in the field of applied mechanics and composite materials. The petitioner has also established that he seeks to continue working in the same field in the United States and that his entry into the United States will substantially benefit prospectively the United States. Therefore, the petitioner has overcome the stated grounds for denial and thereby established eligibility for the benefits sought under section 203 of the Act.

The burden of proof in visa petition proceedings remains entirely with the petitioner. Section 291 of the Act, 8 U.S.C. § 1361. The petitioner has sustained that burden. Accordingly, the decision of the director denying the petition will be withdrawn and the petition will be approved.

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