

ATTACHMENT 9 Reference and Work Product Form

1. Section One: References

Identify **three** references for the recipient and **two** for each subcontractor, using the table below for each reference. Use additional pages as needed (**one page** maximum per reference, see the formatting and page limit requirements in Part III, Section A). References must be relevant to the proposed project and current (within the past three years). Please ensure that contact information is current.

Reference # ___ of ___ for <input checked="" type="checkbox"/> Recipient <input type="checkbox"/> Subcontractor	
Name of Recipient/ Subcontractor	Professor Sanjiva Lele
Name of Reference Firm/Organization	Stanford University
Address (city, state, and zip code)	Durand Building, 496 Lomita Mall, Stanford, CA 94305
Contact Name and Title	Professor Charbel Farhat
Contact Phone Number and Email Address	650-723-3840
Describe the services or products the Recipient/subcontractor provided to the reference firm/organization.	Chairman, Department of Aeronautics and Astronautics

Reference # ___ of ___ for <input checked="" type="checkbox"/> Recipient <input type="checkbox"/> Subcontractor	
Name of Recipient/ Subcontractor	Professor Sanjiva Lele
Name of Reference Firm/Organization	Stanford University
Address (city, state, and zip code)	Durand Building, 496 Lomita Mall, Stanford, CA 94305
Contact Name and Title	Professor Juan Alonso
Contact Phone Number and Email Address	650-723-9954
Describe the services or products the Recipient/subcontractor provided to the reference firm/organization.	Professor Department of Aeronautics and Astronautics

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Reference # __ of __ for <input checked="" type="checkbox"/> Recipient <input type="checkbox"/> Subcontractor	
Name of Recipient/ Subcontractor	Professor Sanjiva Lele
Name of Reference Firm/Organization	Stanford University
Address (city, state, and zip code)	Bldg 500, Stanford, CA 94305
Contact Name and Title	Professor Parviz Moin
Contact Phone Number and Email Address	650-725-3525
Describe the services or products the Recipient/subcontractor provided to the reference firm/organization.	Professor Mechanical Engineering

2. Section Two: Work Product

- **Past Projects**

Describe **up to three** past projects (**two pages** maximum per project, see the formatting and page limit requirements in Part III, Section A), detailing any technical or business experience of the applicant (or any member of the project team) that is related to the work proposed in the application. Identify projects that resulted in market-ready technology, advancement of codes and standards, and/or advancement of state energy policy.

Prof. Lele has been the PI for many research projects involving turbulent flow simulations, wind energy, aeroacoustics, and aviation's impact on the atmosphere. Over the last 3 years wind energy has been one of the areas of his research focus. He has developed a physics-based modeling approach for atmospheric boundary layers which reduces the cost of the simulations by a factor of 1000 or more, while representing the fine-scale turbulent eddies. He has applied this approach to estimating power output and fatigue loads for large wind farms of HAWTs. The publications included below illustrate these technical achievements. He has also made significant contributions to advances in the area of aeroacoustics and high-speed flow simulations over the last 20 years.

- **Recent Publications**

Include copies of **up to three** of the applicant or project team member's recent publications in scientific or technical journals related to the proposed project, as applicable.

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See 3 attached publications

1. Ghate, A. S. and Lele, S. K. (2017), "Subfilter scale enrichment of wind farm LES using Fourier-Gabor modes," AIAA-2017-1164, 35th Wind Energy Symposium, AIAA SciTech Symposium, Grapevine, TX.
2. Ghate, A. S. and Lele, S. K. (2017), "Subfilter-scale enrichment of planetary boundary layer large eddy simulations using discrete Fourier-Gabor modes", J. Fluid Mech., Vol 819, pp 494-535.
3. Ghate, A. S. and Lele, S. K. (2016), "Multi-scale Kinematic Simulations of the Stratified Surface Layer and Interactions with Wind Turbine Arrays," AIAA-2016-1990, 34th Wind Energy Symposium, AIAA SciTech Symposium, San Diego, CA.