THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

CHECKLIST

SELF-MANAGED APPLICATION

IF YOUR APPLICATION PACKAGE DOES NOT CONTAIN ALL OF THE DOCUMENTS LISTED BELOW, YOUR APPLICATION WILL NOT BE REVIEWED.

Send to The National Academies Research Associateship Programs Office in Washington, DC:

_____ Application (all four pages)
_____ Laboratory/Center Review (with only the top portion completed)
_____ Research Proposal
_____ Appendix to the Research Proposal
_____ Previous and Current Research (Postdoctoral or Senior form)
_____ Transcripts (Undergraduate and Graduate for Postdoctoral applicants only)
_____ Reference Reports (or Letters of Reference) -- each in a sealed & signed envelope (four)
_____ This signed Checklist

DEADLINE REMINDER - 2002

Fall Review/Summer Faculty Fellowship Programs applications must be postmarked by November 1.

DEADLINE REMINDER – 2003

***Winter Review applications must be postmarked by February 1**
Spring Review applications must be postmarked by May 1
***Summer Review applications must be postmarked by August 1**
Autumn Review applications must be postmarked by November 1
***NIST participates ONLY in the Winter Review**
***NAI participates ONLY in the Winter and Summer Reviews**

The National Academies Research Associateship Program posts, on its website, information on awardees including the Associate's name, the Laboratory or Center where the research is to be conducted, the Research Adviser and the title of Research Proposal. If you receive an award, and **do not wish** to have your name posted, please check this box.

☐

Signature .... Date ____________

My signature verifies that I have completed and transmitted all of the documents listed for the Application package above.

Please also print your name ....

Applications should be sent by express delivery to:

Research Associateship Programs
The National Academies
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

Phone 202-334-2760
Fax 202-334-2759
E-mail **rap@nas.edu**
www.national-academies.org/rap

Rev. 09/2002

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

OFFICE USE ONLY	
ID	
Postdoctoral	
Senior	
Initials	

APPLICATION

We recommend that you print out and refer to the Instructions for this Application.
Enter information manually or electronically in Layout view.
ORIGINAL SIGNATURES required.

Applicant Last or Family Name	*First Name*
Withers	**Paul**
Middle Name	*Maiden Name* **(if applicable)**
Gareth	

	Home or Institution, MailCode/Stop, Bldg./Room, Number/Street	*City* / *State / Province*	*Zip* **(Postal)** *Code* / *Country*
CURRENT Address	**3002 East Hawthorne Street**	*City*: **Tucson** *State / Province*: **AZ /**	*Zip (Postal) Code*: **85716** *Country*: **USA**
PERMANENT Address	**39 Greenhill Lane,** **Wheaton Aston**	*City*: **Stafford** *State / Province*: **/**	*Zip (Postal) Code*: **ST19 9PL** *Country*: **Great Britain**
CITIZENSHIP	*Country*: **Great Britain**		

If you are a naturalized US citizen, enter your naturalization date and number.	*Date* **Month / Day / Year**	*Number*
If you are a non-US citizen already in the US, enter the type of visa you hold.	*Visa Type*: **F-1**	*Date Visa Status Expires*: **July 19, 2003**
If you are a US legal permanent resident, enter your alien registration number and enclose a copy of your alien registration (green) card.	*Alien Registration Number*	

Education: List in order, beginning with the most recent degree awarded or expected.

Complete Name of University or College **including City, State/Province, Country**	*Inclusive Dates* **Year to Year**	*Degree*	*Awarded or Expected* **Month / Year**	*Degree Discipline / Field Code* **refer to Field Reference List**	
University of Arizona, Tucson, Arizona, USA	**1998 - 2003**	PhD	**05 / 2003**	**Planetary Science**	**2173**
University of Cambridge, Cambridge, Great Britain	**1994 - 1998**	MS	**06 / 1998**	**Physics**	**8299**
University of Cambridge, Cambridge, Great Britain	**1994 - 1998**	BA	**06 / 1998**	**Physics**	**8299**
	-		/		
	-		/		
	-		/		

All transcripts for Postdoctoral applicants must be enclosed with the application package.

Honors and Awards

Title	*Complete Name of Institution* **including City, State/Province, Country**	*Inclusive Dates* **Year to Year**
Kuiper Memorial Award for excellence in academic work and research in Planetary Science	**Lunar and Planetary Laboratory, University of Arizona, Tucson, Arizona, USA**	**2002 - 2002**
Galileo Circle Graduate Scholarship	**University of Arizona, Tucson, Arizona, USA**	**2001 - 2002**
Highly Commended in Young Science Writer Contest	**Daily Telegraph, London, Great Britain - a national newspaper**	**2000 - 2000**
Graduate Registration Fellowships	**University of Arizona, Tucson, Arizona, USA**	**1999 - 2002**

APPLICATION
continued

OFFICE USE ONLY	
Last Name	**ID**

Have you previously applied for a National Academies Associateship? — *Year*

☒ **NO** ☐ **YES** **Select Agency from list #1** **or #2**

Are you a former National Academies Research Associate? — *Tenure Dates* **Year to Year**

☒ **NO** ☐ **YES** **Select Agency from list #1** **or #2** -

Are you also applying for an Alexander von Humboldt Foundation award at this time?

☒ **NO** ☐ **YES**

Employment – Professional, Scientific, Administrative, etc. List in order, beginning with most recent.

Name of Organization **including City, State/Province, Country**	*Employment Sector*	*Title or Academic Rank*	*Inclusive Dates* **Year to Year**
University of Arizona, Tucson, Arizona, USA	**College/University**	**Research Associate**	**1998 - 2003**
Open University, Milton Keynes, Great Britain (summer)	**College/University**	**Research Consultant**	**2001 - 2001**
NASA Goddard Spaceflight Center, Greenbelt, Maryland, USA (summer)	**Government**	**Research Assistant**	**2000 - 2000**
Caltech, Pasadena, California, USA (summer)	**College/University**	**Research Assistant**	**1997 - 1997**

Will you be on official leave from your current position, to which you will return?

☒ **NO** ☐ **YES**

Program Information

Number of months for which you are applying **12**

Tenure for Senior applicants may range from 3-12 mos.

Proposed Starting Date **Month / Day / Year**

August 1, 2003

Agency	*Laboratory* or	*NASA Center*	*Proposed Research Adviser*	*Research Opportunity Number*
or **NASA**		**GSFC**	**Michael Allison**	**44 30 21 B 0962**
or				
or				

Field of Proposed Research. **Refer to the Field Reference List.**

Field Name **Planetary Science**

Code **(most appropriate to Research Proposal)**

Code **2173**

References – Professional, Scientific, Administrative, etc.

Enter the names, titles, and professional addresses of four (4) respondents who are familiar with your research. For recent doctoral recipients, the first name listed should be that of the thesis adviser.

Full Name of Respondent	*Complete Professional Mailing Address of Respondent*
1) **Stephen Bougher**	Space Physics Research Laboratory, AOSS Dept, 2455 Hayward Avenue, University of Michigan, Ann Arbor, Michigan, 48109-2143, USA
2) **Don Hunten**	Lunar and Planetary Laboratory, University of Arizona, Tucson, Arizona, 85721, USA
3) **Bill Hubbard**	Lunar and Planetary Laboratory, University of Arizona, Tucson, Arizona, 85721, USA
4) **Jay Melosh**	Lunar and Planetary Laboratory, University of Arizona, Tucson, Arizona, 85721, USA

All *Reference Reports* (or Letters of Reference) must be enclosed <u>with</u> the application package.
See *Instructions and Checklist*

Signature of Applicant .... **Date** ________

Please also print your name ....

Notice to the applicant: By signing above, the applicant affirms that this information is true and complete and may be used by the The National Academies as needed to consider and administer an award. **Only original signatures are valid.**

	OFFICE USE ONLY
ID	

APPLICATION
continued

This information will not be used or appear in the evaluation process. It is for statistical purposes only and will remain confidential.

APPLICANT					
	Applicant Last or Family Name **Withers**		*First Name* **Paul**		
	Date of Birth **Month / Day / Year** **October 3, 1975**		*Place of Birth* **City, State/Province, Country** **Tittensor, Great Britain**		
	U.S. Social Security Number - -	*Sex* **Male** ☒ **Female** ☐	*Marital Status* **Single** ☒ **Married** ☐	*Race* **Caucasian**	*Ethnicity* **Not Hispanic or Latino**

CONTACT INFORMATION		
	Office Phone **520 621 1507**	*Home Phone* **520 327 4827**
	Fax **520 621 4933**	*E-mail* **withers@lpl.arizona.edu**

SPOUSE		
	Spouse's Last or Family Name	*First Name*
	Date of Birth **Month / Day / Year**	*Place of Birth* **City, State/Province, Country**

Dependent Full Name	*Date of Birth* **Month / Day / Year**	*Place of Birth* **City, State/Province, Country**

APPLICATION
continued

OFFICE USE ONLY	
Last Name	**ID**

To assist us in making information available to a greater number of potential applicants, it is important for us to learn how you initially heard about The National Academies Research Associateship Programs.

Please check ONLY one of the following:

- [x] colleague or fellow graduate student
- [ ] Ph.D. thesis adviser or other professor
- [ ] university placement office
- [ ] former or current National Academies Research Associate
- [ ] Research Adviser or other scientific staff at the federal Laboratory
- [ ] National Academies staff member at professional scientific meeting

Title of Meeting	*Date of Meeting* **Month / Year**

- [ ] Advertisement in professional publication

Name of Publication

- [ ] Other

Please Specify

To which review are you applying?

- [ ] February
- [ ] June
- [ ] October

Rev. 09/2002

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

OFFICE USE ONLY
ID

LABORATORY/CENTER REVIEW

THE APPLICANT COMPLETES THIS SECTION.

Applicant Last or Family Name **Withers**	*First Name* **Paul**
Middle Name **Gareth**	*Maiden Name* **(if applicable)**

Agency	*Laboratory* or	*NASA Center*	*Research Opportunity Number*
or **NASA**		**GSFC**	**44 30 21 B 0962**

Proposed Length of Tenure **Number of Months**	*Proposed Starting Date* **Month / Day / Year**	*Level*
12	August 1, 2003	☒ Postdoctoral ☐ Senior

Title of Research Proposal
Winds in Planetary Atmospheres

PROPOSED RESEARCH ADVISER INFORMATION

Adviser Name	*Adviser Office Phone*	*Adviser E-mail*
Michael Allison	**212 - 678 - 5554**	**pcmda@giss.nasa.gov**

Adviser Address	*City*	*State*	*Zip* **(Postal)** *Code*
NASA/Goddard Institute for Space Studies **2880 Broadway**	**New York**	**NY**	**10025**

THE PROPOSED RESEARCH ADVISER COMPLETES THIS SECTION.

Please respond to all inquiries even if it is not possible to recommend the Research Proposal for review by The National Academies panels. Attach additional sheets, if necessary. Your critical comments on the scientific content of the proposed research are necessary for the evaluation process.

1) *Research Adviser* **(name of person completing this portion of the form)**

2) *To which Division or Branch would the applicant be assigned* (**within this Agency-Laboratory/Center**)*?*
(Entering information electronically expands the field to accommodate all of the space you need.)

LABORATORY/CENTER REVIEW

continued

OFFICE USE ONLY
ID

Applicant Last or Family Name	*First Name*
Withers	**Paul**

3) *Discuss the scientific quality of the Research Proposal. Please address the following points: Are the objectives realistic? Is the approach sound and technically feasible? Does the Research Proposal reflect innovative thinking? Can the research be accomplished in the proposed timeframe?*

4) *How will the proposed research contribute to the mission of the sponsoring agency?*

5) *Are the facilities and equipment at the sponsoring laboratory adequate to complete the proposed research, or is funding available to obtain equipment not already in place?*

6) *Other comments that might be useful in the evaluation of this Research Proposal:*

LABORATORY/CENTER REVIEW
continued

OFFICE USE ONLY
ID

Applicant Last or Family Name	*First Name*
Withers	**Paul**

PROPOSED RESEARCH ADVISER'S RECOMMENDATION

☐ **Recommended** for review ☐ **Not recommended** for review – no Laboratory interest.

Signature of Proposed Research Adviser .... **Date** ____________________

After completing the above portion, sign, date and forward this form to the Laboratory or Center Program Representative.

LABORATORY/CENTER PROGRAM REPRESENTATIVE'S RECOMMENDATION

☐ The Laboratory/Center **recommends** this Research Proposal for review.

☐ The Laboratory/Center **does not recommend** this Research Proposal for review.

Laboratory/Center Program Representative's Comments

Signature of Laboratory/Center Program Representative .... **Date** ____________________

<u>Applications should be sent by express delivery to:</u>

Research Associateship Programs
The National Academies
2001 Wisconsin Avenue, NW [GR 322A]
Washington, DC 20007

Phone 202-334-2760
Fax 202-334-2759
E-mail **rap@nas.edu**
www.national-academies.org/rap

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

OFFICE USE ONLY
ID

RESEARCH PROPOSAL

Applicant Last or Family Name	*First Name*
Withers	**Paul**
Middle Name	*Maiden Name* **(if applicable)**
Gareth	

PROPOSED RESEARCH ADVISER INFORMATION

Proposed Research Adviser	*Agency*	*Laboratory* or	*NASA Center*
1) **Michael Allison**	or **NASA**		**GSFC**
2)	or		
3)	or		

Title of Research Proposal

Winds in Planetary Atmosphere

Field of Proposed Research **Refer to the Field Reference List.**	*Code* **(enter the code most appropriate to your Research Proposal)**
Field Name **Planetary Science**	Code **2173**

Brief Abstract of Research Proposal **Enter or attach no more than 100 words.**

Characterization of winds is essential for understanding a planet's atmospheric circulation and climate, yet winds are challenging to measure. In the initial year-long period of this Associateship, I will pursue two complementary goals. I will develop an innovative technique for measuring winds using latitudinal gradients in density and apply it to upper atmospheric data from Venus and Mars. As a member of the Atmosphere Science Advisory Team for the Landing of NASA's Mars Exploration Rovers, I will analyze accelerometer and gyroscope data to derive vertical profiles of density, pressure, temperature, and winds during their entry in early 2004.

Signature of Applicant .... **Date** ____________________

ATTACH DETAILED RESEARCH PROPOSAL

(<u>maximum of 4 pages</u>)

**Use additional sheets as necessary, but do not exceed a maximum of 4 pages of no more than 500 words per page.
Please sign and date each page at the bottom.**

APPENDIX

Research Proposal

OFFICE USE ONLY
ID

Applicant Last or Family Name	*First Name*
Withers	**Paul**

Anticipated Research Needs **(Indicate special requirements necessary for you to conduct your research.)**

(Entering information electronically expands the field to accommodate all of the space you need.)

1) *Describe activities related to the acquisition or collection of data, such as field activities, research voyages, or observatory use*

Travel to 2 national two day workshops ($1000 each), 2 national week-long conferences ($1500), and 1 international week-long conference ($2500) per year

2) *Computer resources*

1 Unix workstation ($3000 or available from Laboratory supplies), 1 laptop computer ($2500 or available from Laboratory supplies, computer support, and software ($300)

3) *Specialized equipment*

4) *Other*

Books, computer consumables, office supplies, publication and reprint charges, express shipping, Xerox, and long distance charges ($1000)

Signature of Applicant .... **Date** ____________

Rev. 09/2002

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

PREVIOUS AND CURRENT RESEARCH

to be completed by Postdoctoral applicants only

OFFICE USE ONLY
ID

Applicant Last or Family Name	*First Name*
Withers	**Paul**
Middle Name **Gareth**	*Maiden Name* **(if applicable)**

Date of Ph.D. **Month/Year**	*Thesis Adviser*
May / 2003	**Steve Bougher**

Title of Ph.D. Dissertation

Weather in the Martian Atmosphere - And Other Topics

Status of Ph.D. Dissertation

☒ Published ☐ Accepted for publication ☒ In preparation for publication ☐ Not to be published

Brief abstract of Ph.D. Dissertation **Enter or attach no more than 100 words.**

My dissertation includes work on the martian upper atmosphere (the dominant theme), lunar crater Giordano Bruno, the northern plains of Mars, entry accelerometer data analysis, comparison of martian topography between Viking Lander and MOLA data, and simple climate models. Some has been published; the remainder is in preparation for publication. Density in the martian upper atmosphere varies regularly with longitude, unlike the Earth or early predictions for Mars. I have quantified this variability, compared it to classical tidal theory, and identified the dominant tidal modes in the upper atmosphere. I am also developing a novel technique to measure winds.

Provide a concise description of all research investigations conducted within the past five years.

Include a list of publications for the past five years, listed in the following order: 1) refereed journal articles; 2) books; 3) published proceedings; 4) non-refereed articles; and, 5) patents. Citations should include the following: a) authors; b) year of publication; c) full name of journal, d) volume number, and, e) page number(s).

DO NOT SEND REPRINTS

See attached pages

Provide a concise description of the nature of any technical or scientific affiliation that you have had, or continue to have with the Agency for which you are applying. Because one of the objectives of The National Academies Research Associateship programs is to bring new talent and ideas to the federal Laboratories, the information you provide in this section will be used by The National Academies to determine your eligibility for an award.

IF NO AFFILIATION, INDICATE "NONE."

I spent 10 weeks in 2000 at NASA's Goddard Spaceflight Center as part of the Goddard Summer Student Program.
I am an Atmosphere Science Advisor for the Landing of NASA's Mars Exploration Rovers.

Signature of Applicant .... **Date** ____________

Use additional sheets as necessary. Do not exceed a maximum of 4 pages , including publications.
Please sign and date each page at the bottom.

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

PREVIOUS AND CURRENT RESEARCH
to be completed by Senior applicants only

OFFICE USE ONLY
ID

Applicant Last or Family Name	*First Name*
Middle Name	*Maiden Name* **(if applicable)**

Provide a concise description of all research investigations conducted within the past five years.

Include a list of publications for the past five years, listed in the following order: 1) refereed journal articles; 2) books; 3) published proceedings; 4) non-refereed articles; and, 5) patents. Citations should include the following: a) authors; b) year of publication; c) full name of journal, d) volume number, and, e) page number(s).

DO NOT SEND REPRINTS

Provide a concise description of the nature of any technical or scientific affiliation that you have had, or continue to have with the Agency for which you are applying. Because one of the objectives of The National Academies Research Associateship programs is to bring new talent and ideas to the federal Laboratories, the information you provide in this section will be used by The National Academies to determine your eligibility for an award.

IF NO AFFILIATION, INDICATE "NONE."

Signature of Applicant .... **Date** ______________________

Use additional sheets as necessary. Do not exceed a maximum of 4 pages, including publications.
Please sign and date each page at the bottom.

Rev. 09/2002

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

OFFICE USE ONLY
ID

REFERENCE REPORT

Respondent must return the Reference <u>to the applicant</u> -- completed, signed, and in a sealed envelope with the respondent's signature clearly written across the envelope flap.

Applicant Last or Family Name	*First Name*		
Field of Proposed Research	*Agency* or	*Laboratory* or	*NASA Center*
Title of Research Proposal			

Applicant: submit a brief abstract of your Research Proposal.

If you are applying to more than one Agency with different Research Proposals, please submit <u>each</u> abstract, and identify the Agency to which each refers.

Enter or attach no more than 100 words per abstract.

RESPONDENT'S REPLY

Full Name & Title of Respondent	*Institutional Affiliation*	
Address	*Office Phone* - -	*E-mail*

1) I have known this applicant in the following capacities (you may check more than one)

☐ as an undergraduate ☐ as a teaching/research assistant ☐ as my thesis advisee

☐ as a graduate student ☐ as a professional colleague ☐ by reputation only

2) I was acquainted with the professional work of this applicant from

Month / Year **to** **Month / Year**

3) I had a ☐ **poor** ☐ **fair** ☐ **good** ☐ **excellent** opportunity to observe the quality of this applicant's work.

4) The major function of this applicant is/was ☐ research ☐ teaching ☐ administration of research ☐ other (specify below)

5) If the applicant is/was a student, how does he/she compare with students currently in your department?

☐ **Lower half** ☐ **Upper half** ☐ **Top 25%** ☐ **Top 10%** ☐ **Top 1%**

REFERENCE REPORT

continued

OFFICE USE ONLY
ID

Applicant Last or Family Name	*First Name*

6) Please comment on the Applicant's scientific and technical abilities in comparison with other scientists and engineers of similar training and experience. Include in your assessment the following: a) knowledge of the field; b) skill in experimental design; c) technical abilities; d) innovative abilities; e) ability to work independently; f) analytical abilities; and, g) skills in interpreting and reporting research.

7) Please indicate on this scale, your overall impression of this applicant. **(Check ONLY one.)**

Below Average	**Average**	**Good**	**Excellent**	**Outstanding**	**Inadequate Opportunity to Observe**
☐	☐	☐	☐	☐	☐

RESPONDENT: **Your response <u>below</u> is necessary if applicant requests information from the file.**

☐ I ask that the National Academies maintain the confidentiality of my identity to the extent permitted by law. I further ask the National Academies to maintain the confidentiality of these comments to the extent permitted by law.

☐ I ask that the National Academies maintain the confidentiality of my identity to the extent permitted by law. I do not ask the National Academies to hold my comments in confidence.

☐ My preparation of this Reference Report is not conditioned on the request that the National Academies hold my identity or comments in confidence.

Signature of Respondent.. *Date* ______________________

Please also print your name ....

Respondent must return the Reference <u>to the applicant</u> -- completed, signed, and in a sealed envelope with the respondent's signature clearly written across the envelope flap.

Rev. 09/2002