NASA REDUCED GRAVITY EDUCATION FLIGHT PROGRAM
JOHNSON SPACE CENTER
2009 FLIGHT CAMPAIGN

TO: Flight Crew and Alternate Flight Crew Members (Students and Journalists)
RE: Medical Examination Requirements for Flight Crew Members – 2009 Flights

NASA/JSC requires that all prospective flight crew / alternate flight crew members / journalists participating in the NASA Reduced Gravity Student Flight Opportunities Program complete a medical examination performed by a FAA Certified Aviation Medical Examiner (AME) or Designated Military Flight Surgeon. The examination data is then reviewed by NASA's Physiological Training Office to determine an individual's "fitness for flight". Once they are physically qualified, individuals are eligible to participate in a Physiological Training course at JSC (which they will attend as part of their Houston experience).

Remember to bring all of this with you when you go for your physical!

A complete "Medical Examination Packet" is attached which includes:

- Letter of explanation addressed to the FAA Certified AME
- NASA/JSC Medical Examination Requirements
- Height and Weight Table / Common Omissions
- JSC Form 8500 - Report of Medical Examination (Rev 8/00) - two pages
  - Page 1 - to be completed by applicant
  - Page 2 - to be completed by FAA Certified AME

Each flight team member is responsible for the following:

- Locate a FAA Certified AME and make an appointment. Refer to dates and deadlines for the deadline for your flight week. The FAA website provides a Directory of AMEs at http://www.faa.gov/pilots/amelocator/.
- Read through this entire Medical Exam packet so you will be familiar with its contents and any additional medical exams (beyond the basic) that may apply to you.
- Make sure to print the **team's school** and **your full legal name** in top right corner on each page of the medical forms.
- Complete page one of the JSC 8500 (your medical history).
- Report to AME for medical exam. Don't forget to bring the letter to the AME, Medical Exam Requirements, Height and Weight Table / Common Omissions and JSC Form 8500.
- Pay all expenses associated with the medical exam.
- Check with the AME's office after the exam is completed to make sure that the report has been signed and forwarded to JSC by the deadline date. The AME's staff should fax the forms directly to the NASA Physiological Training Office.

Additional Notes:

- Female flight crew members should notify the AME if there is reason to suspect pregnancy.
- Flight crew members who have been previously certified as "qualified" to fly as part of this program MAY be exempt from the medical exam and / or physiological training requirement. Please provide the team member's full legal name and date of program participation to JSC's Program Coordinator for verification.
- Flight crew members who hold a pilot's license MAY be exempt from the Medical Exam requirement. A complete copy of the qualifying medical exam report, usually FAA Form 8500, MUST be provided to the JSC Physiological Training Officer for determination. A copy of the medical certificate or pilot's license is **NOT** required.

Direct questions concerning the NASA/JSC medical examination requirements for program participants to:

Physiological Training Officer
Phone: 281-792-5724
email: jsc-htsgad@mail.nasa.gov
Fax: 281-792-5731

NASA REDUCED GRAVITY EDUCATION FLIGHT PROGRAM
JOHNSON SPACE CENTER
2009 FLIGHT CAMPAIGN

May 12, 2008

Dear FAA Certified Aviation Medical Examiner / Designated Military Flight Surgeon:

The person who has given you this letter is a member of a university team that has been selected to fly a micro-gravity experiment aboard NASA's C-9 reduced gravity aircraft. NASA / JSC specifies that all prospective flyers must obtain a medical examination performed by a FAA Certified AME or Designated Military Flight Surgeon. **The examination, however, is not considered to be an official FAA exam; the results are for NASA use only.**

Attached to this letter, you should find:

- NASA/JSC Medical Examination Requirements
- Height and Weight Table / Common Omissions
- JSC Form 8500 - Report of Medical Examination (Rev 8/00) - two pages
  - Page 1 - to be completed by applicant
  - Page 2 - to be completed by AME

After the examination, please fax ONLY the signed and completed JSC Form 8500 (two pages) to:

NASA Johnson Space Center
Human Test Support Group - Mail Code SD-37
Houston, Texas 77059
Attn: Physiological Training Officer
Fax: 281-792-5731

Please *do not send* EKGs, laboratory analyses, etc.

The NASA Physiological Training Office finds the following items **frequently omitted** on the JSC Form 8500, Report of Medical Examination. Before faxing the form, PLEASE ask your staff to ensure all items are completed, including:

Applicant's Height and Weight	**Blocks 14 & 15**
Date of EKG (for applicants age 35 and older)	**Block 49**
Results of EKG (normal, WNL, etc)	**Block 50**
AME's Comments on History and Findings from Item 12	**Block 51**
AME's Name, Signature, Serial Number & Phone Number	**Block 54**

Questions concerning any of the medical requirements contained herein should be directed to:

Physiological Training Officer
Ph: 281-792-5724
email: jsc-htsgad@mail.nasa.gov

Thank you for helping NASA provide this outstanding educational experience to teachers and students. If you have any further questions, please don't hesitate to contact Ms. Sara Malloy, Program Coordinator at 281-483-7847.

With best regards,
Sara Malloy
Reduced Gravity
Program Coordinator

MEDICAL EXAMINATION REQUIREMENTS
NASA REDUCED GRAVITY EDUCATION FLIGHT PROGRAM
2009 Flight Campaign

EXAMINING PHYSICIAN: MUST be FAA Certified Aviation Medical Examiner (AME).

EXAM REQUIREMENTS: Applicant's Medical History and Physical Examination is reported on JSC Form 8500 (attached). This examination is NOT considered to be an official FAA exam. Medical results / opinions reported are for NASA use only. The Chief of the Medical Sciences Division at the Johnson Space Center serves as the final authority on the examinee's qualification for flight aboard the C-9 microgravity aircraft.

FAA GUIDE FOR AVIATION MEDICAL EXAMINERS

Medical Standards – Effective September 16, 1996 - Third Class Medical Certificate	
DISTANT VISION	20/40 or better in each eye separately, with or without correction.
NEAR VISION	20/40 or better in each eye separately (Snellen equivalent), with or without correction, as measured at 16 inches.
INTERMEDIATE VISION	No requirement.
COLOR VISION	Ability to perceive those colors necessary for safe performance of airman duties.
HEARING	Demonstrate hearing of an average conversational voice in a quiet room, using both ears at 6 feet, with the back turned to the examiner or pass one of the audiometric tests below (Speech Discrimiation or Pure Tone)
AUDIOLOGY	Audiometric Speech Discrimination Test (Whisper Test): Score at least 70% discrimination in one ear. Pure tone Audiometric Test: Unaided, with thresholds no worse than: 500 Hz / 1,000 Hz / 2,000 Hz / 3,000 Hz Better Ear: 35 Db / 30Db / 30 Db / 40 Db Worst Ear: 35 Db / 50 Db / 50 Db / 60 Db
ENT	No ear disease or condition manifested by, or that may reasonably be expected to be manifested by, vertigo or a disturbance of speech or equilibrium.
PULSE	No disqualifying per se. Used to determine cardiac system status and responsiveness.
BLOOD PRESSURE	No specified values stated in the standards. Hypertension covered under general medical standard and in the *Guide for Aviation Medical Examiners.*
EKG	Not routinely required for persons under the age of 35. Required at age 35 and within the past year for persons age 40 and over.
MENTAL	No diagnosis of psychosis, or bipolar disorder, or severe personality disorders.

Body Mass Index (BMI) Table

Height (inches) ***Weight (pounds)*** ***C-9 Aircraft (under BMI 35)***

BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279

COMMON OMISSIONS

The NASA Physiological Training Office frequently finds the following items commonly omitted on the JSC Form 8500, Report of Medical Examination. Before faxing the forms, please check to make sure all items are completed, including:

Applicant's Height and Weight	**Blocks 14 & 15**
Date of EKG (for applicants age 35 or older)	**Block 49**
Results of EKG (normal, WNL, etc)	**Block 50**
AME's Comments on History and Findings from Item 12	**Block 51**
AME's Name, Signature, Serial Number & Phone Number	**Block 54**

RGSFOP	SCHOOL	FULL LEGAL NAME

JSC FORM 8500 - REPORT OF MEDICAL EXAMINATION - PAGE 1 OF 2

APPLICANT MUST COMPLETE THIS MEDICAL HISTORY
PLEASE TYPE OR PRINT CLEARLY IN DARK INK

1. APPLICATION FOR	2. LAST NAME	FIRST NAME	MIDDLE NAME
RGSFOP			

3. SSN	4. STREET ADDRESS	CITY	STATE	ZIP	PHONE #
					( )

5. DOB (M/D/Y)	6. SEX	7. HAIR COLOR	8. EYE COLOR	9. ☐ STUDENT ☐ FACULTY ☐ JOURNALIST	10. SCHOOL OR EMPLOYER

11. **DO YOU CURRENTLY USE ANY MEDICATION** (prescription or non-prescription)? ☐YES ☐ NO If yes, list name, purpose dosage & frequency of use below. Attach additional sheet if needed.

12. MEDICAL HISTORY Have you EVER HAD, or do you NOW HAVE, any of the following conditions? Answer "YES" for every condition you have ever had in your life. Describe the condition and the approximate date of occurrence in the explanation box provided below.

	YES	NO	CONDITION		YES	NO	CONDITION		YES	NO	CONDITION
A			FREQUENT OR SEVERE HEADACHES	I			STOMACH, LIVER OR INTESTINAL TROUBLE	Q			MOTION SICKNESSS REQUIRING MEDICATION
B			DIZZINESS OR FAINTING SPELLS	J			KIDNEY STONE OR BLOOD IN URINE	R			MILITARY MEDICAL DISCHARGE
C			UNCONSCIOUSNESS FOR ANY REASON	K			DIABETES	S			MEDICAL REJECTION BY MILITARY SERVICE
D			EYE OR VISION TROUBLE (EXCEPT GLASSES)	L			NEUROLOGICAL DISORDERS: EPILEPSY, SEIZURES, STROKE, PARALYSIS, ETC.	T			REJECTION FOR LIFE OR HEALTH INSURANCE
E			HAY FEVER OR ALLERGY	M			MENTAL DISCORDERS OF ANY SORT: DEPRESSION, ANXIETY, ETC.	U			ADMISSION TO HOSPITAL
F			ASTHMA OR LUNG DISEASE	N			SUBSTANCE DEPENDENCE OR FAILED DRUG TEST (EVER), OR SUBSTANCE ABUSE OR USE OF ILLEGAL SUBSTANCE IN THE LAST FIVE YEARS.	V			OTHER ILLNESS, DISABILITY OR SURGERY.
G			HEART OR VASCULAR TROUBLE	O			ALCOHOL DEPENDENCE OR ABUSE				
H			HIGH OR LOW BLOOD PRESSURE	P			SUICIDE ATTEMPT				

EXPLANATIONS: If you answered "yes" to any of the above items, describe the condition and the approximate date of occurrence. Use additional page if necessary.

13. HAVE YOU VISITED A HEALTH PROFESSIONAL WITHIN THE LAST 3 YEARS? ☐YES (LIST BELOW) ☐NO

DATE	NAME, ADDRESS & TYPE OF HEALTH PROFESSIONAL	REASON FOR VISIT

NOTE. Whoever, in any manner, within the jurisdiction of any department or agency of the United States, knowingly and willfully falsifies, conceals or covers up, by any trick, scheme or device, a material fact; or who makes any false, fictitious or fraudulent statements, representations or entry, may be fined up to $250,000 or imprisoned for not more than 3 years, or both (18 U.S. Code Sections 1001; 3571).

SIGNATURE OF APPLICANT	DATE

JSC FORM 8500 / STUDENT CAMPAIGNS / REV 12/01

RGSFOP	SCHOOL	FULL LEGAL NAME

JSC FORM 8500 - REPORT OF MEDICAL EXAMINATION - PAGE 2 OF 2

FAA CERTIFIED AME MUST COMPLETE THIS PHYSICAL EXAMINATION PLEASE TYPE OR PRINT CLEARLY IN DARK INK	14. HEIGHT (INCHES)	15. WEIGHT (LBS)

CHECK COLUMN FOR EACH ITEM	NORMAL	ABNORMAL	CHECK COLUMN FOR EACH ITEM	NORMAL	ABNORMAL
16. HEAD, FACE, NECK, SCALP			28. VASCULAR SYSTEM (pulse, amplitude, character, arms, legs, etc)		
17. NOSE			29. ABDOMEN & VISCERA (including hernia)		
18. SINUSES			30. ANUS (not including digital exam)		
19. MOUTH AND THROAT			31. SKIN		
20. EARS, GENERAL (internal & external canals; hearing under item #40)			32. G-U SYSTEM (not including pelvic exam)		
21. EAR DRUMS (perforation)			33. UPPER AND LOWER EXTREMETIES (strength/range of motion)		
22. EYES, GENERAL (vision under items #41-45)			34. SPINE, OTHER MUSCULOSKELETAL		
23. OPHTHALMOSOPIC			35. IDENTIFYING BODY MARKS (Scars, Tattoos) (size & location)		
24. PUPILS (equality & reaction)			36. LYMPHATICS		
25. OCULAR MOTILITY (assoc parallel movement, nystagmus)			37. NEUROLOGIC (tendon reflexes, equilibrium, senses, cranial, nerves, coordination, etc)		
26. LUNGS & CHEST (excluding breasts)			38. PSYCHIATRIC (appearance, behavior, mood, communication, memory)		
27. HEART (precardial activity, rhythm, sounds, murmurs)			39. GENERAL SYSTEMIC		

NOTES: Describe any above items checked "abnormal" in detail. Enter item number before each comment. Use additional sheet if necessary.

40. HEARING	VOICE TEST		AUDIOMETER THRESHOLD IN									
	RIGHT EAR	LEFT EAR	RIGHT EAR					LEFT EAR				
			500	1000	2000	3000	4000	500	1000	2000	3000	4000

41. DISTANT VISION			42. NEAR VISION			43. COLOR VISION
RIGHT	20 /	CORRECTED TO	RIGHT	20 /	CORRECTED TO	☐ NORMAL ☐ ABNORMAL
LEFT	20 /	CORRECTED TO	LEFT	20 /	CORRECTED TO	
BOTH	20 /	CORRECTED TO	BOTH	20 /	CORRECTED TO	

44. FIELD OF VISION ☐ NORMAL ☐ ABNORMAL	45. HETEROPHORIA 20' (in prism diopters)			
	ESOPHORIA	EXOPHORIA	RIGHT HYPERPHORIA	LEFT HYPERPHORIA

46. BLOOD PRESSURE (sitting mm of mercury)		47. PULSE (resting)	48. URINALYSIS ☐ NORMAL ☐ ABNORMAL (give results)		49. EKG (DATE)		
SYSTOLIC	DIASTOLIC		ALBUMIN	SUGAR	MM	DD	YY

50. OTHER TESTS GIVEN

51. SIGNIFICANT MEDICAL HISTORY ☐ YES ☐ NO **ABNORMAL PHYSICAL FINDING** ☐ YES ☐ NO

AME shall elaborate on all pertinent data; comment on all "YES" answers in the Medical History (pg 1, #12) and any abnormal findings of the exam. AME may develop, by interview, any additional medical history deemed important, and record any significant findings here. **ATTACH ADDITIONAL COMMENTS ON HISTORY & FINDINGS.**

52. APPLICANT'S NAME	53. DISQUALIFYING DEFECTS (LIST BY ITEM NUMBER)

54. AME'S DECLARATION. *I hereby certify that I have personally reviewed the medical history and personally examined the applicant named on this medical examination report. This report, with any attachment, embodies my findings completely and correctly.*

EXAM DATE			AME'S NAME / ADDRESS / CITY / STATE / ZIP
MM	DD	YY	

SIGNATURE:	AME'S SERIAL NUMBER	AME'S PHONE NUMBER

JSC FORM 8500 / STUDENT CAMPAIGNS / REV 12/01