APPENDIX 1
INFORMATION FOR EXAMINING CLINICIANS

Diving involves risk and certain medical conditions can make the risk of death and/or injury or illness while diving much higher. Scientific divers require periodic diving medical examinations to assess their fitness to engage in diving. Their answers on the **Diving Medical History Form** may indicate potential health or safety risks as noted. Diving is an activity that places unusual stress on the individual in several ways. Your evaluation is requested on this **Medical Evaluation Fitness for SCUBA Diving Form**. Your opinion on the applicant's medical fitness is requested. Scuba diving requires heavy exertion, hence the diver must be free of cardiovascular and respiratory disease (see references, following page). An absolute requirement is the ability of the lungs, middle ears and sinuses to equalize pressure. Any condition that risks the loss of consciousness should disqualify the applicant. Please proceed in accordance with the AAUS Medical Standards (Sec. 5.00). If you have questions about diving medicine, please consult with the Undersea Hyperbaric Medical Society or Divers Alert Network. If you have questions in regards to the medical findings of the applicant please contact the Occupational Health team at occupational.health@kaust.edu.sa.

The patient requires a medical examination to assess their fitness to dive at KAUST. He/she should have completed a medical history form and should present it to you for review at the time of the examination.

To assist you in making this evaluation, this packet includes:

1. Information regarding potential disqualifying conditions including appropriate references and a list of all of the required tests based on the age of the applicant (see below).
2. A "Diving Medical History" form (to be completed by the applicant)
3. A "Diving Medical Evaluation Fitness for SCUBA Diving Report" form (to be completed and signed by you)
4. An "Applicant's Release of Medical Information Form"

The basic physical examination must include the laboratory tests and other evaluations listed in the required clinical tests by age category chart. All test results (laboratory, x-ray and EKG), "Physical Examination" and "Diving Medical Evaluation" forms should be given to the diver. Any questions regarding the exam can be addressed to the Dive Safety Officer at DSO.dl@kaust.edu.sa or Occupational Health Specialist at occupational.health@kaust.edu.sa.

Required clinical tests by age category		
All Divers Under age 40 Initial & Periodic Re-Exam every 5 years	All Divers Over age 40 Initial Exam	All Divers Over age 40 Periodic Re-Exam every 3 years (every 2 years if over age 60)
• Medical History • Complete Physical Exam, emphasis on neurological and otological components • Urine Dip • Any further tests deemed necessary by the clinician	• Medical History • Complete Physical Exam, emphasis on neurological and otological components • Urine Dip • Resting EKG • Chest X-ray • Detailed assessment of coronary artery disease risk factors using Multiple-Risk-Factor Assessment (age, family history, lipid profile, blood pressure, diabetic screening, smoking history). Further cardiac screening may be indicated based on risk factor assessment • Any further tests deemed necessary by the clinician	• Medical History • Complete Physical Exam, emphasis on neurological and otological components • Urine Dip • Resting EKG • Detailed assessment of coronary artery disease risk factors using Multiple-Risk-Factor Assessment (age, family history, lipid profile, blood pressure, diabetic screening, smoking history). Further cardiac screening may be indicated based on risk factor assessment • Any further tests deemed necessary by the clinician

Conditions that may disqualify candidates from diving (Adapted from Bove, 1998: bracketed numbers are pages in Bove)	
1. Abnormalities of the tympanic membrane, such as perforation, presence of a monomeric membrane, or inability to autoinflate the middle ears. [5 ,7, 8, 9]	14. Hematologic disorders including coagulopathies. [41, 42]
2. Vertigo, including Meniere's Disease. [13]	15. Evidence of coronary artery disease or high risk for coronary artery disease. [33 - 35]
3. Stapedectomy or middle ear reconstructive surgery. [11]	16. Atrial septal defects. [39]
4. Recent ocular surgery. [15, 18, 19]	17. Significant valvular heart disease - isolated mitral valve prolapse is not disqualifying. [38]
5. Psychiatric disorders including claustrophobia, suicidal ideation, psychosis, anxiety states, untreated depression. [20 - 23]	18. Significant cardiac rhythm or conduction abnormalities. [36 - 37]
6. Substance abuse, including alcohol. [24 - 25]	19. Implanted cardiac pacemakers and cardiac defibrillators (ICD). [39, 40]
7. Episodic loss of consciousness. [1, 26, 27]	20. Inadequate exercise tolerance. [34]
8. History of seizure. [27, 28]	21. Severe hypertension. [35]
9. History of stroke or a fixed neurological deficit. [29, 30]	22. History of spontaneous or traumatic pneumothorax. [45]
10. Recurring neurologic disorders, including transient ischemic attacks. [29, 30]	23. Asthma. [42 - 44]
11. History of intracranial aneurysm, other vascular malformation or intracranial hemorrhage. [31]	24. Chronic pulmonary disease, including radiographic evidence of pulmonary blebs, bullae, or cysts. [45,46]
12. History of neurological decompression illness with residual deficit. [29, 30]	25. Diabetes mellitus. [46 - 47]
13. Head injury with sequelae. [26, 27]	26. Pregnancy. [56]

APPENDIX 2
AAUS MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT

Applicant name:	**Date of exam:**
Assessing Physician name:	**Assessing Physician email:**
Clinic Name & Address:	**Clinic Phone:**

TO THE EXAMINING PHYSICIAN: This person is an applicant for training or is presently certified to engage in diving with self-contained underwater breathing apparatus (SCUBA). Scientific divers require periodic SCUBA diving medical examinations to assess their fitness to engage in diving with SCUBA. Your opinion on the applicant's medical fitness is requested. Their answers on the Diving Medical History Form may indicate potential health or safety risks as noted. SCUBA diving is an activity that puts unusual stress on the individual in several ways. SCUBA diving requires heavy exertion. The diver must be free of cardiovascular and respiratory disease (see references, following page). An absolute requirement is the ability of the lungs, middle ears and sinuses to equalize pressure. Any condition that risks the loss of consciousness should disqualify the applicant. If you have questions about diving medicine, please consult with the Undersea Hyperbaric Medical Society or Divers Alert Network. If you have questions in regards to the medical findings of the applicant please contact the Occupational Health team at occupational.health@kaust.edu.sa.

REQUIRED TESTS – Assessing physician MUST initial tests completed.
DURING ALL INITIAL AND PERIODIC RE-EXAMS (UNDER AGE 40)
____ Medical history
____ Complete physical exam, with emphasis on neurological and otological components
____ Urinalysis
____ Any further tests deemed necessary by the physician

ADDITIONAL TESTS DURING FIRST EXAM OVER AGE 40 AND PERIODIC RE-EXAMS (OVER AGE 40) – Assessing physician MUST initial tests completed.
____ Chest x-ray (Required only during first exam over age 40)
____ Resting EKG
____Assessment of coronary artery disease using Multiple-Risk-Factor Assessment1
(age, lipid profile, blood pressure, diabetic screening, smoking)
*Note: Exercise stress testing may be indicated based on Multiple-Risk-Factor Assessment2

PHYSICIAN'S STATEMENT:
I have evaluated the above-mentioned individual according to the tests listed above, in my opinion, find no medical conditions that may be disqualifying for participation in SCUBA diving. I have discussed with the patient any medical condition(s) that would not disqualify him/her from diving but which may seriously compromise subsequent health. The patient understands the nature of the hazards and the risks involved in diving with these conditions.

○	Diver is medically qualified to dive for 2 years (over age 60)
○	Diver is medically qualified to dive for 3 years (age 40-59)
○	Diver is medically qualified to dive for 5 years (under age 40)
○	Diver is not medically qualified to dive Temporarily, explain:
○	Diver is not medically qualified to dive Permanently

MD or DO signature:	**Date of exam:**

My familiarity with applicant is	○ This exam only	○ Regular physician for ____ years
My familiarity with diving medicine is:		

APPENDIX 2b
MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT

APPLICANT'S RELEASE OF MEDICAL INFORMATION FORM

Patient name:	**Date of exam:**
Assessing Physician:	
Clinic Name & Address:	**Clinic Phone:**

I authorize the release of this information and all medical information subsequently acquired in association with my diving to the Occupational Health Department, Diving Safety Officer, and Diving Control Board or their designee at (place) _____ on (date) _____ for purposes of determining my fitness to dive for KAUST. I authorized the Occupational Health Team and/or the assessing doctor to discuss my fitness to dive and medical findings of my assessment.

Patient Signature:	**Date:**

REFERENCES

[1] Grundy, S.M., Pasternak, R., Greenland, P., Smith, S., and Fuster, V. 1999. Assessment of Cardiovascular Risk by Use of Multiple-Risk-Factor Assessment Equations. AHA/ACC Scientific Statement. *Journal of the American College of Cardiology,* 34: 1348-1359. http://content.onlinejacc.org/cgi/content/short/34/4/1348

APPENDIX 3
DIVING MEDICAL HISTORY FORM

(To Be Completed By Applicant-Diver)

Patient name:	**Sex**	**Age**	**Weight**	**Height**
Assessing Physician:				
Clinic Name & Address:		**Clinic Phone:**		

TO THE APPLICANT:

Scuba diving places considerable physical and mental demands on the diver. Certain medical and physical requirements must be met before beginning a diving or training program. Your accurate answers to the questions are more important, in many instances, in determining your fitness to dive than what the physician may see, hear or feel as part of the diving medical certification procedure. The examining physician must keep this form confidential. If you believe any question amounts to invasion of your privacy, you may elect to omit an answer, provided that you must subsequently discuss that matter with your own physician who must then indicate, in writing, that you have done so and that no health hazard exists. Should your answers indicate a condition, which might make diving hazardous, you will be asked to review the matter with Occupational Health and additionally your physician. In such instances, their written authorization will be required in order for further consideration to be given to your application. If your physician concludes that diving would involve undue risk for you, remember that they are concerned only with your well-being and safety.

	Yes	**No**	**Please indicate whether or not the following apply to you**	**Comments**
1			Convulsions, seizures, or epilepsy	
2			Fainting spells or dizziness	
3			Been addicted to drugs	
4			Diabetes	
5			Motion sickness or sea/air sickness	
6			Claustrophobia	
7			Mental disorder or nervous breakdown	
8			Are you pregnant?	
9			Do you suffer from menstrual problems?	
10			Anxiety spells or hyperventilation	
11			Frequent sour stomachs, nervous stomachs or vomiting spells	
12			Had a major operation	
13			Presently being treated by a physician	
14			Taking any medication regularly (even non-prescription)	
15			Been rejected or restricted from sports	
16			Headaches (frequent and severe)	
17			Wear dental plates	
18			Wear glasses or contact lenses	
19			Bleeding disorders	
20			Alcoholism	
21			Any problems related to diving	
22			Nervous tension or emotional problems	
23			Take tranquilizers	

Patient name:	Sex	Age	Weight	Height
Assessing Physician:				
Clinic Name & Address:		Clinic Phone:		

	Yes	No	Please indicate whether or not the following apply to you	Comments
24			Perforated ear drums	
25			Hay fever	
26			Frequent sinus trouble, frequent drainage from the nose, post-nasal drip, or stuffy nose	
27			Frequent earaches	
28			Drainage from the ears	
29			Difficulty with your ears in airplanes or on mountains	
30			Ear surgery	
31			Ringing in your ears	
32			Frequent dizzy spells	
33			Hearing problems	
34			Trouble equalizing pressure in your ears	
35			Asthma	
36			Wheezing attacks	
37			Cough (chronic or recurrent)	
38			Frequently raise sputum	
39			Pleurisy	
40			Collapsed lung (pneumothorax)	
41			Lung cysts	
42			Pneumonia	
43			Tuberculosis	
44			Shortness of breath	
45			Lung problem or abnormality	
46			Spit blood	
47			Breathing difficulty after eating particular foods, after exposure to particular pollens or animals	
48			Are you subject to bronchitis	
49			Subcutaneous emphysema (air under the skin)	
50			Air embolism after diving	
51			Decompression sickness	
52			Rheumatic fever	
53			Scarlet fever	
54			Heart murmur	
55			Large heart	

Patient name:	Sex	Age	Weight	Height
Assessing Physician:				
Clinic Name & Address:		Clinic Phone:		

	Yes	No	Please indicate whether or not the following apply to you	Comments
56			High blood pressure	
57			Angina (heart pains or pressure in the chest)	
58			Heart attack	
59			Low blood pressure	
60			Recurrent or persistent swelling of the legs	
61			Pounding, rapid heartbeat or palpitations	
62			Easily fatigued or short of breath	
63			Abnormal EKG	
64			Joint problems, dislocations or arthritis	
65			Back trouble or back injuries	
66			Ruptured or slipped disk	
67			Limiting physical handicaps	
68			Muscle cramps	
69			Varicose veins	
70			Amputations	
71			Head injury causing unconsciousness	
72			Paralysis	
73			Have you ever had an adverse reaction to medication?	
74			Do you smoke?	
75			Have you ever had any other medical problems not listed? If so, please list or describe below;	
76			Is there a family history of high cholesterol?	
77			Is there a family history of heart disease or stroke?	
78			Is there a family history of diabetes?	
79			Is there a family history of asthma?	
80			Date of last tetanus shot? Vaccination dates?	

Patient name:	**Sex**	**Age**	**Weight**	**Height**
Assessing Physician:				
Clinic Name & Address:		**Clinic Phone:**		

Please explain any “yes” answers to the above questions.

Question number	Comment

I certify that the above answers and information represent an accurate and complete description of my medical history.

Patient Signature:	**Date:**