



University of Maryland
Scientific Diver Application
Department of Research Safety

SCIENTIFIC DIVING PROGRAM ENTRY REQUIREMENTS

Welcome to the University of Maryland's Scientific Diving Program. This packet includes paperwork and information necessary to enter the University of Maryland's diving program. The following items must be **completed and turned in** to the Diving Safety Office (3115 Chesapeake Bldg.) before checkout dives can be scheduled.

Scientific Diver application (*in this packet*): To be completed by applicant and returned to the Diving Safety Office.

Release and Waiver Agreement (*in this packet*): To be completed by applicant and returned to the Diving Safety Office.

Diving Medical History Form (*in this packet*): To be completed by applicant before the medical exam and given to the examining clinician and a copy sent to the Diving Safety Office.

Medical Evaluation of Fitness for Scuba Diving Report (*in this packet*): To be completed by the clinician conducting your diving medical exam and returned to the Diving Safety Office. Be sure that all of the lab tests required for your age group are performed.

Applicant's Release of Medical Information Form (*in this packet*): Must be signed by the applicant and given to the clinician conducting the diving medical exam, and a copy sent to the Diving Safety Office.

Successful completion of the following exams:

- a. **Scientific Diver Exam Online** (one time only):
https://docs.google.com/forms/d/1TpRTn-e4ghfrNqvRHK4fx7AVj7lynLq5ltaqnT2pjpg/viewform?edit_requested=true
- b. **UM Dive Manual Test Online** (one time only):
https://docs.google.com/forms/d/1Rr_ihj7ilkAF70i-ZtqBeedD2IEXRl0oWLLfs3ckeSM/viewform?edit_requested=true
- c. **HAZMAT Pressurized Cylinders Test Online** (initially, then every 3 years):
http://www.des.umd.edu/apps/Training/hp_cylinder/login.cfm

Proof of current CPR training (submitted initially, then every 2 years), first aid training (submitted initially, then every 3 years), and DAN oxygen provider training (submitted initially, then every 2 years).

Copies of scuba certification cards.

The following documentation is not required prior to the first pool dive, but must be submitted before full scientific diver certification is awarded.

Copies of current receipts for annual regulator service. This must include a list of equipment and the certification of the technician performing maintenance.

Rescue diver certification.

Proof of health insurance and DAN insurance (copy both sides of cards).

University of Maryland's Scientific Diving Program

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PRIVACY STATEMENT: The Diving Safety Office is collecting information on behalf of the Diving Control Board in order to evaluate your qualifications as a University of Maryland scientific diver. Please provide the requested information in order to participate in diving conducted under the auspices of the University of Maryland. The Diving Safety Office and/or Diving Control Board may share information it receives from you with other University offices, the University System of Maryland, and outside entities as necessary or appropriate in the conduct of legitimate University business and consistent with law, including the Maryland Access to Public Records Act, which may exempt from disclosure any medical information you provide. You may inspect and/or correct the information you provide in accordance with the Maryland Access to Public Records Act and applicable University policy.

Name (Last, First) _____ **UID** _____
Mailing Address _____
Permanent Address _____
Telephone: Home _____ **Work** _____ **FAX** _____
Email Address(es) _____
Title (Prof., Assoc. Prof., Asst. Prof., Grad. Asst., Student) _____
Your Office Location (Building and Room#) _____
Department _____ **College** _____
Department Supervisor _____ **Phone** _____
Birth Date (M/D/Y) _____ **Sex** ____ **Height** _____ **Weight** ____ **Eyes** _____ **Hair** _____

Please provide photocopies of documentation where appropriate.

Recreational Diving Certifications:

<u>Agency</u>	<u>Certification Level</u>	<u>Date</u>	<u>Location</u>	<u>Instructor/Number</u>

Scientific Diving Certifications:

<u>Organization</u> (Univ., Federal, State, Private)	<u>Date</u>	<u>Location</u>	<u>Diving Officer</u>

Specialty Certifications:

<u>Agency</u>	<u>Certification Level</u>	<u>Date</u>	<u>Location</u>	<u>Instructor/Number</u>

Emergency Care Certifications:

	<u>Agency</u>	<u>Certification Level</u>	<u>Date of Last Training</u>
CPR			
First Aid			
Oxygen Admin.			

DAN Insurance _____ **No** _____ **Yes** _____ **Exp. Date** _____

Diving Activity

Date of Last Dive _____ Total Dives in Last 12 Months _____ Total Number of Dives _____
Years Diving _____ Total Hours Diving _____ Greatest Depth _____

Cumulative Total Number of Dives per Depth

0-30' _____ 31-60' _____ 61-100' _____ 101-130' _____ 131-150' _____ 151-190' _____

Experience

(Mark an "X" for areas in which you have some experience and "XX" for areas with considerable experience)

_____ Ocean	_____ Fresh Water	_____ Low Visibility	_____ Boat
_____ Kelp	_____ Search & Recovery	_____ Shore	_____ Photography
_____ Deep	_____ Decompression	_____ Sur	_____ Navigation
_____ Night	_____ Cold Water	_____ Currents	_____ Dive Computer
_____ Ice	_____ Saturation	_____ Cave	_____ Mixed Gas
_____ Wreck	_____ Blue Water	_____ Surface Supplied	_____ Dry Suit

Diving Equipment List

<u>Item</u>	<u>Brand</u>	<u>Serial #</u>	<u>Date Purchased</u>	<u>Date of Last Inspection</u>
Regulator	_____	_____	_____	_____
Alternate Air Source	_____	_____	_____	_____
Pressure Gauge	_____	_____	_____	_____
Depth Gauge	_____	_____	_____	_____
Dive Computer	_____	_____	_____	_____
BCD	_____	_____	_____	_____
Cylinder	_____	_____	_____	_____
Other	_____	_____	_____	_____

Emergency Contact Information (Person to notify in case of an emergency)

Name _____ Relationship _____
Telephone: Home _____ Work _____ Cell _____
Address _____
Email _____

I certify that, to the best of my knowledge, the above information is correct.

Signature _____ Date _____

Send completed form to: Diving Safety Office
University of Maryland, Department of Research Safety
3115 Chesapeake Building, College Park, Maryland 20742-3133

RELEASE AND WAIVER AND INFORMED CONSENT AGREEMENT

In consideration of being permitted to participate as a voluntary diver in the diving program, skin and/or scuba diving activities, and incidental activities related thereto ("Diving Activities") and described below, that are to be conducted under the auspices of or in cooperation with the University of Maryland (University), a public agency and instrumentality of the State of Maryland (State), through the University's Department of Research Safety, I, the undersigned participant, hereby represent that I

(1) Am at least eighteen years of age; and

(2) Hold at least a basic recreational scuba diving certification from a nationally recognized certification organization; and

(3) Have obtained a copy of the UM Dive Safety Manual and am familiar with its content, including its safety requirements. The Dive Manual is available on-line at <https://www.essr.umd.edu/document-diving-safety-manual> or from the Dive Safety Officer (DSO); and

(4) Am fully aware of and understand the obligations and requirements to maintain my diving skills, physical fitness and mental preparation for all dives; the dangers associated with Diving Activities, including but not limited to near drowning, air embolism, carbon dioxide excess, squeezes, oxygen poisoning, nitrogen narcosis, exhaustion and panic, respiratory fatigue, motion sickness, decompression sickness (D.C.S.), hypothermia, hypoxia/anoxia, barotrauma, hyperbaric treatment, hyperoxic, hypercapnia D.C.S, pneumothorax, mediastinal emphysema, air embolism, subcutaneous emphysema, ruptured eardrum or round window rupture, paralysis, arterial gas embolism (A.G.E.) (see <http://www.scuba-doc.com/glssry.html>) and being fully informed of these obligations, requirements and dangers, I voluntarily assume all risk of loss, damage, illness, injury to my person or property and death that may result from my participation in Diving Activities; and

(5) Have and will continue to have for the duration of Diving Activities health insurance that is adequate to cover any injuries or illnesses that I may sustain in connection with Diving Activities and that will apply to Diving Activities conducted outside the United States.

I further agree to:

(6) Conduct all Diving Activities as no-decompression dives; and

(7) Indemnify and hold harmless the State, the University and their officers, agents and employees from and against any and all claims or causes or action by whomever or wherever made or presented for personal injuries, property damage or wrongful death related to or arising out of Diving Activities; and

(8) Fully and finally waive and release the State, the University and their officers, agents and employees from and against any and all actions or causes of action, claims, or demands that are associated with or related in any way to the Diving Activities whether or not such actions, claims, or demands arise out of the negligence, omission, default or other action of the University, its officers, agents, employees and/or any person or entity associated with Diving Activities.

This Agreement represents my complete understanding with the University regarding the subject of this agreement. I understand that this Agreement may not be modified without my written agreement and that, in the event of a dispute regarding its terms, this Agreement will be governed by the laws of the State of Maryland. I certify that I have read this Agreement, have been afforded the right to consult an adviser or attorney prior to signing it, understand its terms and conditions and voluntarily execute this Agreement.

Participant name

Signature

Date

Address

E-Mail Address

Date of Birth

(If participant is under 18 years old you must contact the Dive Safety Officer at lesburke@umd.edu)

DIVING MEDICAL HISTORY FORM

(To be completed by applicant-diver **before** medical exam and reviewed by examining clinician.)

Name _____ Sex ____ Age ____ Wt. ____ Ht. ____

Sponsor _____ Date _____
(Dept./Project/Program/School, etc.)

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 clinician may see, hear or feel as part of the diving medical certification procedure.

This form shall be kept confidential by the examining clinician. If you believe any question amounts to invasion of your privacy, you may elect to omit an answer, provided that you shall subsequently discuss that matter with your own clinician 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 your clinician. In such instances, their written authorization will be required in order for further consideration to be given to your application. If your clinician 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	

	Yes	No	Please indicate whether or not the following apply to you	Comments
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	
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	

	Yes	No	Please indicate whether or not the following apply to you	Comments
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	
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	

	Yes	No	Please indicate whether or not the following apply to you	Comments
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?	

Please explain any "yes" answers to the above questions.

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

Signature

Date

DIVING MEDICAL EXAM OVERVIEW FOR THE EXAMINING CLINICIAN

TO THE EXAMINING CLINICIAN:

This person requires a medical examination to assess their fitness for certification as a Scientific Diver for the University of Maryland, College Park. Their answers on the Diving Medical History Form (attached) may indicate potential health or safety risks as noted. Your evaluation is requested on the attached scuba Diving Fitness Medical Evaluation Report. If you have questions about diving medicine, you may wish to consult one of the references on the attached list or contact one of the physicians with expertise in diving medicine whose names and phone numbers appear on an attached list, the Undersea Hyperbaric and Medical Society, or the Divers Alert Network. Please contact UM's Diving Safety Officer if you have any questions or concerns about the University of Maryland's standards for scientific diving. Thank you for your assistance.

Diving Safety Officer: Les W. Burke; lesburke@umd.edu; phone: 301-405-3960 or 202-489-6340

Scuba and other modes of compressed-gas diving can be strenuous and hazardous. A special risk is present if the middle ear, sinuses, or lung segments do not readily equalize air pressure changes. The most common cause of distress is Eustachian insufficiency. Recent deaths in the scientific diving community have been attributed to cardiovascular disease. Please consult the following list of conditions that usually restrict candidates from diving.

(Adapted from Bove, 1998: bracketed numbers are pages in Bove)

CONDITIONS WHICH MAY DISQUALIFY CANDIDATES FROM DIVING

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

Revised 11 May 2017

SELECTED REFERENCES IN DIVING MEDICINE

Available from Best Publishing Company, P.O. Box 30100, Flagstaff, AZ 86003-0100, the Divers Alert Network (DAN) or the Undersea and Hyperbaric Medical Society (UHMS), Durham, NC

- Elliott, D.H. ed. 1996. *Are Asthmatics Fit to Dive?* Kensington, MD: Undersea and Hyperbaric Medical Society.
- Bove, A.A. 2011. The cardiovascular system and diving risk. *Undersea and Hyperbaric Medicine* 38(4): 261-269.
- Thompson, P.D. 2011. The cardiovascular risks of diving. *Undersea and Hyperbaric Medicine* 38(4): 271-277.
- Douglas, P.S. 2011. Cardiovascular screening in asymptomatic adults: Lessons for the diving world. *Undersea and Hyperbaric Medicine* 38(4): 279-287.
- Mitchell, S.J., and A.A. Bove. 2011. Medical screening of recreational divers for cardiovascular disease: Consensus discussion at the Divers Alert Network Fatality Workshop. *Undersea and Hyperbaric Medicine* 38(4): 289-296.
- 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>
- Bove, A.A. and Davis, J. 2003. DIVING MEDICINE, Fourth Edition. Philadelphia: W.B. Saunders Company.
- Edmonds, C., Lowry, C., Pennefather, J. and Walker, R. 2002. DIVING AND SUBAQUATIC MEDICINE, Fourth Edition. London: Hodder Arnold Publishers.
- Bove, A.A. ed. 1998. MEDICAL EXAMINATION OF SPORT SCUBA DIVERS, San Antonio, TX: Medical Seminars, Inc.
- NOAA DIVING MANUAL, NOAA. Superintendent of Documents. Washington, DC: U.S. Government Printing Office.
- U.S. NAVY DIVING MANUAL. Superintendent of Documents, Washington, DC: U.S. Government Printing Office, Washington, D.C.
- Diving: des.edu

MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT

Name of Applicant (Print or Type)

Date of Medical Evaluation (Month/Day/Year)

To The Examining Clinician: Scientific divers require periodic scuba diving medical examinations to assess their fitness to engage in scuba diving. 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. Your opinion on the applicant's medical fitness is requested on this Medical Evaluation Form. Scuba diving requires heavy exertion. The diver must be free of cardiovascular and respiratory disease. 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. 6.00). If you have questions about diving medicine, please consult with the Undersea Hyperbaric Medical Society or Divers Alert Network.

TESTS: THE FOLLOWING TESTS ARE REQUIRED:

UNDER AGE 40:

- ____ Medical history
- ____ Complete physical exam, with emphasis on neurological and otological components
- ____ Urinalysis
- ____ Any further tests deemed necessary by the clinician

ADDITIONAL TESTS FOR AGE 40 AND OVER:

- ____ 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

CLINICIAN'S STATEMENT:

_____ 01 Diver **IS** medically qualified to dive for: _____ 2 years (over age 60)
_____ 3 years (age 40-59)
_____ 5 years (under age 40)

_____ 02 Diver **IS NOT** medically qualified to dive: _____ Permanently _____ Temporarily.

I have evaluated the abovementioned individual according to the American Academy of Underwater Sciences medical standards and required tests for scientific diving (Sec. 6.00 and Appendix 1) and, 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.

Signature MD or DO _____
Date

Name (Print or Type)

Address

Telephone Number

E-Mail Address

Clinician's Remarks:

**MEDICAL EVALUATION OF FITNESS FOR SCUBA DIVING REPORT
APPLICANT'S RELEASE OF MEDICAL INFORMATION FORM**

Name of Applicant (Print or Type)

I authorize the release of this information and all medical information subsequently acquired in association with my diving to the Diving Safety Officer, William Sarro, and Diving Control Board or their designee at the University of Maryland, College Park.

Signature of Applicant _____

Date _____