RUTGERS
Institutional Planning and Operations

Rutgers Environmental Health and Safety (REHS)

Program Name:	Respiratory Protection Program		
Responsible Executive:	Executive Director of REHS		
Adopted:	March 31, 2005	**Reviewed/Revised:**	May 1, 2020

1. **Program Statement**
   It is the policy of Rutgers University to provide a safe and healthful workplace for all faculty, staff, students and guests, including minimizing risks to airborne contaminants. Respiratory protection will be provided for certain job tasks where it is not feasible to reduce airborne contaminants below regulatory limits or the airborne hazard cannot be definitively identified or quantified (e.g. chemical spills, gas releases, TB exposure in clinical settings).

2. **Reason for Program**
   This program establishes respirator selection criteria and defines respirator fit testing and training requirements. The goal of the program is to provide appropriate respiratory protection to Rutgers personnel in a manner consistent with regulatory requirements and accepted professional practice. This program is also designed to ensure compliance with the following OSHA/PEOSH standards:

   - *Respiratory Protection* - 29 CFR 1910.134 (General Industry Standard)
   - *Air Contaminants* – 29 CFR 1910.1000 (General Industry Standard)
   - *Respirable Crystalline Silica* – 29 CFR 1910.1053 (General Industry Standard)

3. **Who Should Read this Program**
   This program applies to all Rutgers faculty, staff, students and guests who are required to wear respirators during normal work operations and during non-routine or emergency operations for which an assessment has been performed and respiratory protection has been deemed necessary. This includes designated employees in the following departments:

   - Rutgers Environmental Health and Safety (REHS) – For collection of bulk asbestos samples, chemical waste handling and segregation and emergency response incidents (i.e. hazardous substance spills, leaks, etc.) - N95 Filtering Facepiece, Powered Air Purifying Respirator (PAPR), Air Purifying Respirator (APR), Self-Contained Breathing Apparatus (SCBA)

   - Institutional Planning & Operations (IP&O) – During the following tasks:

     1) Cleaning of cooling towers by Heating, Ventilating and Air Conditioning (HVAC) Mechanics - APR
     2) Lead-based paint work involving “at risk” tasks defined in the *Rutgers University Lead-Based Paint Program* - APR
     3) Spray painting and varnish refinishing - APR
     4) Addition of pool chemicals and maintenance - APR

- Fire & Emergency Services – For first response incidents involving fire, explosion, chemical release or biological exposure (i.e. blood) - N95 and SCBA for smoke conditions

- Rutgers University Police Department (RUPD) – For first response incidents involving Chemical, Biological, Radiological and/or Nuclear (CBRN) attack - MSA Millennium CBRN and N95

- Rutgers University Security Guards - For initial response incidents involving CBRN attack - N95

- Rutgers Health Care Centers (All Campuses) – For potential exposure to tuberculosis and other infectious diseases transmitted by respiratory route - N95

- Rutgers clinical personnel and students (e.g., medical and nursing) - For potential exposure to tuberculosis and other airborne infectious diseases transmitted by respiratory route - N95, PAPR

- Comparative Medicine Resources (CMR) – For potential exposure to: 1) animal allergens/biohazardous/chemical residues that may be present in animal bedding; 2) Vapors generated by fogging machine used for room disinfection/sanitizing - N95, PAPR, APR

- Plant Science/Plant Pathology – For application of pesticides in greenhouses, research farms and experimental research stations – APR, PAPR

- Animal Science – personnel and students who are involved in seasonal kidding/lambing at Rutgers Farm facilities - N95

- Rutgers personnel working in cell sorting facilities for potential exposures to respiratory droplets during sorting procedures - N95, PAPR

- Rutgers personnel from schools/ units involved in the Biosafety Level III research program. This includes, but is not limited to persons from New Jersey Medical School (NJMS), IP&O, REHS, and CMR - N95, PAPR

4. **The Program**

I. Roles and Responsibilities

A. Rutgers Environmental Health and Safety (REHS)

1) Serve as the overall Program Administrator for the Rutgers Respiratory Protection Program.

2) Develop a University-wide written Respiratory Protection Program.

3) Conduct exposure assessments of workplaces to determine the need for respiratory protection.

4) Recommend appropriate respiratory protective equipment.

5) Conduct fit tests for respirator wearers.

6) Provide training on the proper use, care and storage of respirators.

7) Maintain training records.

B. Supervisors, Program Coordinators of Employees and/or Students Who Wear Respirators

1) Serve as the Program Administrator for their department.

2) Contact REHS to conduct an exposure assessment to determine type of respiratory protection needed.

3) Purchase NIOSH approved respirators.

4) Schedule medical examinations with the Occupational Health Physician for employees who use respirators.

5) Ensure employees attend and/or complete required training and arrange for annual fit testing through REHS.

6) Maintain an adequate stock of appropriate respirators, cartridges, filters and spare parts.

7) Evaluate the effectiveness of the Respiratory Protection Program to ensure that:

a. Respirators are properly selected and used
b. Wearers are properly trained and fit tested
c. Respirators are properly cleaned, maintained and stored

C. Employees Who Wear Respirators

1) Be clean shaven (i.e., no facial stubble, beards).

2) Use respirators as instructed by the manufacturer and REHS.

3) Conduct a user seal check each time the respirator is worn.

4) Guard against damaging the respirator during use and storage.

5) Clean the respirator after each use with appropriate disinfectant.

6) Go immediately to an area having respirable air if the respirator fails to provide proper protection.

7) Report any respirator malfunction to a supervisor or Program Administrator.

8) Complete medical questionnaires, attend and/or complete annual training, and obtain annual fit test through REHS.

D. Occupational Health Department

1) Provide medical evaluations in accordance with PEOSH regulations to determine if an employee is medically fit to wear a respirator.

2) Determine the frequency of follow-up examinations.

3) Maintain the required medical records.

II. Definitions

Action Level	The level of a harmful or toxic substance which requires additional controls such as medical surveillance, industrial hygiene monitoring, biological monitoring or engineering controls. OSHA generally sets the Action Level at half of the Permissible Exposure Limit (PEL).
Air Purifying Respirator (APR)	A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.
Bitrex®	Denatonium benzoate, a bitter tasting solution widely accepted for use in the qualitative fit test protocol.
Canister or Cartridge	A container with a filter, sorbent, catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.
CBRN	Chemical, biological, radiological and/or nuclear.
Employee Exposure	Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.
Filtering Facepiece (Dust Mask)	A negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.
Fit Test	The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.
Loose-Fitting Facepiece	A respiratory inlet covering that is designed to form a partial seal with the face.
Negative Pressure Respirator	A respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.
N95 Respirator	Filtering facepiece capable of filtering 95% of airborne particles but is not resistant to oil.
NIOSH	National Institute for Occupational Safety and Health
Physician or other Licensed Health Care Professional (PLHCP)	An individual whose legally permitted scope of practice (license, registration or certification) allows him or her to independently provide medical evaluations and consultation.
Positive Pressure Respirator	A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air outside the respirator.

Program Administrator or Program Coordinator	An individual assigned responsibility for ensuring compliance and coordination with this program. Duties include developing SOP's, arranging training and fit tests, and assessing the effectiveness of the unit's program.
Powered Air Purifying Respirator (PAPR)	An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.
Qualitative Fit Test	A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.
Quantitative Fit Test	An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.
Respirator Assessment	The determination made by REHS as to the potential for exposure to airborne contaminants and whether or not a respirator is required to complete assigned tasks.
Respirator Emergency	An occurrence happening during respirator protection use that may result in personal injury or death to a respirator user and/or changes to the anticipated conditions of use evaluated in the initial workplace respirator assessment.
Respirator User	Any student, faculty or staff that is required to participate in this Respiratory Protection Program.
Self-Contained Breathing Apparatus (SCBA)	An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.
Tight-Fitting Facepiece	A respiratory inlet covering that forms a complete seal with the face.
User Seal Check	An action conducted by the respirator user to determine if the respirator is properly seated to the face.

III. Procedures

A. Workplace Assessments

1) REHS shall select the appropriate type of respiratory protection on the basis of an exposure assessment. These include the need for loose-fitting hoods/face pieces used with PAPRs.

2) Requesting workplace respirator assessments

a. Staff, students and visitors are encouraged to request a workplace respirator assessment through their department head, their supervisor, or directly through REHS.

b. Those students, faculty, staff, or visitors that request a workplace respirator assessment directly through REHS will be required to identify a supervisor for that area to ensure individuals performing similar job tasks are identified and managed consistently.
c. For specific, pre-defined job classifications or activities where respirator use is standard or required by a regulatory agency, REHS will enroll and manage these respirator users (see Appendix 3).

2) Performing workplace respirator assessments

a. REHS will perform a workplace exposure assessment and report the results of this assessment to all stakeholders.
b. To the extent possible, workplace exposure assessments will be scheduled to coincide with actual work activities and conditions that prompted the workplace assessment request.
c. REHS reserves the right to conduct follow up assessments to determine the effectiveness of the control measures recommended and implemented during this assessment.

B. Selection and Issuance of Respirators

1) Only NIOSH approved respirators shall be selected and used.

2) At a minimum, respirators shall provide protection to reduce personal exposures to below the action levels for each contaminant. Higher levels of protection may be considered appropriate.

3) Respirators shall be provided by department supervisors. Employees may be requested to acknowledge receipt of the respirator.

4) Whenever feasible, individual respirators shall be issued to employees for their exclusive use.

C. Respirator Fit Testing

1) Respirators requiring tight fit shall not be used when conditions prevent a good facepiece seal (e.g. facial hair, eyeglasses, dentures).

2) Respirator fit testing shall be performed initially before use and *annually* thereafter. Fit testing shall be performed by REHS and/or Occupational/Student Health Services.

3) Quantitative fit testing will be performed for full face respirators (SCBA, CBRN) and for researchers/students using N95s while working in Biosafety Level 3 (BSL3) areas. Quantitative fit testing will be performed using the TSI Portacount Plus Model 8038.

4) Qualitative fit test procedures shall be used for negative pressure tight fitting respirators. The Bitrex® procedure shall be the preferred method. Other methods such as isoamylacetate (banana oil), saccharin, and irritant smoke may be used at the discretion of REHS and/or Occupational/Student Health Services.

5) A positive and negative user seal check (fit check) shall be performed each time the respirator is worn, including at the start of the fit test.

6) For persons wearing loose-fitting hood PAPRs, REHS will provide training on the proper use, care and maintenance and will follow the Standard Operating Procedure (SOP) for respirator use.

D. Maintenance and Care of Respirators

1) All respirators shall be inspected routinely before each use and after cleaning and assembly.

2) Respirators shall be cleaned when needed and after each use. Cleaning and disinfection is not necessary for single use respirators. Cleaning procedures are as follows:

a. Remove filters/cartridges and disassemble removable parts.
b. Wash all parts in warm, soapy water. Use a mild disinfectant in the wash solution.
c. Rinse all parts thoroughly in clean water to remove soap residue.
d. Air dry respirator in a clean area. DO NOT dry the respirator in an oven, clothes dryer, microwave or other mechanical device.
e. Replace any defective or missing parts.
f. Reassemble the respirator.
g. Store in a clean plastic bag in a suitable area away from sources of heat, excessive sunlight or chemicals.

3) Damaged or worn respirators must be repaired or replaced as necessary.

IV. Medical Monitoring

A. Initial and Periodic Medical Evaluations

An initial medical evaluation is required *prior* to respirator use. Medical evaluations shall be provided at no cost to the employee. The evaluation is conducted by the Occupational Health Physician or Licensed Health Care Professional and may include the following:

- Physical Examination
- Medical History (Mandatory Questionnaire)
- Pulmonary Function Test
- Chest x-ray
- Electrocardiogram
- Blood/Urine Analysis
- Tuberculin Skin Test

The frequency of periodic medical examinations for respirator wearers shall be determined by the Occupational Health Physician or Licensed Health Care Professional.

V. Training Requirements

A. Training Content and Frequency

1) All employees who wear respirators shall be trained in the proper use, limitations, and care of each type of respirator they may need.

2) Training shall be provided by REHS annually or more frequently if deemed necessary.

3) Training shall also include a review of the applicable OSHA standards, fit testing procedures and the Respiratory Protection Program.

VI. Program Evaluation

A. Random and Periodic Inspections

1) Random inspections shall be conducted to ensure that respirators are properly selected, used, cleaned and maintained.

2) Inspections shall be performed by department supervisors and REHS.

3) The Respiratory Protection Program shall be reviewed on a periodic basis by REHS.

VII. Emergency Contacts

A. Respirator users, their supervisors, and program administrators must consider and prepare for emergencies that may occur during work activities. These respirator emergencies may impact the ability of a program participant to continue to use their assigned respiratory protection safely. In case of emergency call REHS at (848) 445-2550 or for after-hours emergencies please contact RUPD. RUPD can be contacted by calling 911 via the emergency call system or directly. RUPD New Brunswick (732) 932-7211, RUPD Newark (973) 353-5111, and RUPD Camden (856) 225-6111.

B. In case of a respirator emergency, participants are reminded to leave the work area in a calm manner, and if safe to do so, initiate protective measures (apply spill absorbent, upright leaking container, turn off ignition sources, etc.) to limit the emergency condition. In all instances, follow the Rutgers University Emergency Action Plan as appropriate for the emergency condition.

VIII. References

OSHA *Respiratory Protection Standard* (29 CFR 1910.134)

OSHA Respirator eTool

NIOSH Pocket Guide to Chemical Hazards

NIOSH Guide to the Selection and Use of Particulate Respirators Certified Under 42 CFR 84

Documentation of Threshold Limit Values (Current Issue)

ANSI Respirator Standard Z 88.2 (2015)

APPENDIX 2

Voluntary Dust Mask Use

Respirators provide protection against airborne inhalation hazards when exposures exceed occupational exposure limits and their use complies with an effective respiratory protection program. In those instances where airborne inhalation exposures are not expected to exceed occupational exposure limits, employees wish to achieve an additional level of comfort and protection, and their use is permitted by the department, business unit, or program coordinator, dust masks may be worn.

If your department, business unit, or program coordinator permits the use of dust masks, then you must adhere to the following requirements:

- Use dust masks only when performing job tasks and work activities evaluated by REHS and specified by your department's or business unit's safety manual, or your program coordinator's standard operating procedures.
- Follow the manufacturers' instructions and warnings regarding dust mask use, care, and the limitations.
- Do not wear a dust mask in atmospheres containing hazardous contaminants at concentrations that it is not designed to provide protection against. For example, dust masks do not provide protection against asbestos, silica, and welding fumes, and they do not breathing air in oxygen deficient environments, and provide protection in immediately dangerous to life and health atmospheres.

I have received and read this form and understand my responsibilities.

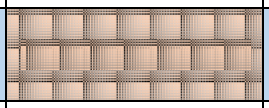
User's Name	NetID	Date

User's Signature

APPENDIX 3

Work Areas and Activities in which Respiratory Protection is Required/Made Available

Location	Respirator Type	Work Area	Respirator Description & Work Activities
All Campuses	N-95		Tight fitting, maintenance free (single use) N-95 respirators in any building, department, or function not affiliated with University Hospital (UH)
		Research Staff	Research personnel with animal allergen issues (as determined by respective Health Services), designated persons in BSL3, those working in cell sorting facilities, or personnel involved in birthing of sheep, goats, cattle.
		Vivarium (CMR) Staff/ Farm Staff	Animal Care activities such as cage changing and dumping and personnel involved in birthing of sheep, goats and cattle.
		Clinicians (Faculty, House Staff, Physician Assistants & Clinical Staff, 3rd/4th Year Medical Students, Nursing staff and students, also including Student and Occupational/ Employee Health Departments)	Patient contact requiring respirator use (e.g., entering into Airborne Infection Isolation Rooms, cough-inducing procedures on suspect TB patients, triaging symptomatic TB patients
		CINJ Nursing staff	Cleaning up small chemotherapy spills; triaging symptomatic TB patients
		Public Safety	Police officers and security guards who may come into contact with suspect TB patients
		Physical Plant	Persons involved in animal facility work (as required by CMR or allergen assessment)
		RUES Staff	Full time and per diem working for Public Safety
Rutgers: RBHS Piscataway/New Brunswick	PAPR		Loose fitting, hood, respiratory protection
		Vivarium (CMR) Staff	Animal Care personnel during cage changing and dumping.
		Researchers in Cell Sorting Facilities	Use during cell sorting operations as required, and if not able to wear N95
Rutgers: RBHS Newark	PAPR		Loose fitting, hood, respiratory protection
		Biosafety Level III Research Staff	Research personnel who work with airborne transmissible agents
All Campuses	Tight-Fitting		Half or full face respirator depending upon assessment

		REHS Staff	Inspections (asbestos, lead) and emergency response
Rutgers: New Brunswick	Tight-Fitting		Half or full face respirator depending upon assessment
		Pesticide Applicators	Research greenhouse or golf course staff
		Facilities Maintenance	Cooling tower maintenance work, painters, or pool chemical use
		REHS Staff	Inspections (asbestos, lead) and emergency response
		RUES Staff	SCBA for smoke alarm conditions and first responder(s)
		Police	Full face APR equipped with CBRN canister for crowd control
Rutgers: Experimental Station	Tight-Fitting		Half or full face respirator depending upon assessment
		Pesticide Applicators	Research staff on Adelphia, Bridgeton, Chatsworth, Cream Ridge, Eco Complex, Snyder Farms

Appendix 4

Temporary practices for extended use and limited reuse of NIOSH-certified N95 filtering facepiece respirators (commonly called "N95 respirators") for COVID-19

Whenever possible, N95s should be of single use following established procedures. During the COVID-19 Pandemic, supplies on N95 respirators may be depleted and difficult to obtain. For these circumstances, use of N95 may be extended or limited reuse following the guidance below. If working at a facility under the direction of another institution, employees should follow the host institution's procedures. If unavailable, employees should follow the procedures below.

Definitions:

Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients, without removing the respirator between patient encounters. Extended use may be implemented when multiple patients are infected with the same respiratory pathogen and patients are placed together in dedicated waiting rooms or hospital wards.

Reuse refers to the practice of using the same N95 respirator for multiple encounters with patients but removing it ('doffing') after each encounter. The respirator is stored in between encounters to be put on again ('donned') prior to the next encounter with a patient.

The decision to implement these practices should be made on a case by case basis taking into account respiratory pathogen characteristics (e.g., routes of transmission, prevalence of disease in the region, infection attack rate, and severity of illness) and local conditions (e.g., number of disposable N95 respirators available, current respirator usage rate, success of other respirator conservation strategies, etc.). Please contact REHS if you have any questions.

Respirator Extended Use Recommendations

Extended use is favored over reuse because it is expected to involve less touching of the respirator and therefore less risk of contact transmission and may be implemented in accordance with the following:

- Use of up to 8 hours of continuous or intermittent use
- Minimize unnecessary contact with the respirator surface
- Adhere to good hand hygiene practices
- Ensure proper donning and doffing technique (see attached technique pdf)
- To reduce contact transmission after donning:
    - Discard N95 respirators following use during aerosol generating procedures.
    - Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
    - Discard N95 respirators following close contact with, or exit from, the care area of any patient co-infected with an infectious disease requiring contact precautions.
    - Consider use of a cleanable face shield (preferred) over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls) to reduce surface contamination.
    - Perform hand hygiene with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit).

- Discard any respirator that is obviously damaged or becomes hard to breathe through.

Respirator Reuse Recommendations

Adherence to the following is required if reusing N95s:

- Follow the manufacturer's user instructions, including conducting a user seal check.
- N95s may be used up to a maximum of 5 uses or donnings (or according to the manufacturer's recommendations) and must be inspected before each use.
- Discard any respirator that is obviously damaged or becomes difficult to breathe through.
- Pack or store respirators between uses so that they do not become damaged or deformed.
- To reduce contact transmission:
    - Discard N95 respirators following use during aerosol generating procedures.
    - Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
    - Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions.
    - Consider use of a cleanable face shield (preferred) over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls), when feasible to reduce surface contamination of the respirator.
    - Hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses. To minimize potential cross-contamination, store respirators so that they do not touch each other and the person using the respirator is clearly identified. Storage containers should be disposed of or cleaned regularly.
    - Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit).
    - Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator, discard the respirator and perform hand hygiene as described above.
    - Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Discard gloves after the N95 respirator is donned and any adjustments are made to ensure the respirator is sitting comfortably on your face with a good seal.
    - Label containers used for storing respirators or label the respirator itself (e.g., on the straps) between uses with the user's name to reduce accidental usage of another person's respirator.

Please remember that the most significant risk when extending or reusing an N95 respirator is contact transmission from touching the surface of the contaminated respirator.