

Fields of Biomedical Research and Related Careers

Career Opportunities



Minimum Requirements/Conditions	Animal Behaviorists	Animal Care/Laboratory Animal Technicians	Animal Facility Supervisors	Animal Health Technicians	Biomedical Engineers	Cagewashers and Facility Maintenance	Clinical Trials Associates	Computer Scientists and Programmers	Engineers	Laboratory Assistants	Laboratory Veterinarians	Medical Doctors	Medical Technologists	Nutritionists	Pharmaceutical Technicians	Pre-Clinical Trials Associates	Regulatory Affairs Specialists	Research Associates/Technicians	Researchers/Scientists	Statisticians	Technical Writers	U.S. Department of Agriculture Inspectors	Veterinary Technicians	
Indirect Work with Animals	●																							
Work with Animals	●	●																						
Certification Possible or Required	●	●																						
Graduate Degree																								
College Degree (2 & 4 years)																								
High School Diploma																								
	study animals to collect data on their behavior and activity.	provide food and water, clean housing, and enrichment for laboratory animals and monitor animal health on a daily basis.	oversee the animal facility setting, ensuring that all laws and regulations are followed.	monitor animal health and provide medical care as prescribed by a veterinarian.	work in the practical application of engineering as it relates to health and medicine.	personnel keep research facilities and equipment clean, dependable, and safe.	organize the testing of new drugs and technical procedures on humans.	create and design programs for use in research.	design and create equipment, facilities, devices, and materials used in a research environment.	help technicians, veterinarians, and researchers in the laboratory setting.	provide medical care to animals, perform independent research, and serve as consultants and collaborators to research investigators.	provide medical care to humans, work on advances in medical procedures and surgical techniques, and discover new drugs and medical treatments.	perform laboratory tests in medical and hospital diagnostic laboratories.	design healthier diets for animals and humans and study food-borne illnesses.	assist researchers in discovering and creating new medicines.	work with scientists testing new drugs and procedures on animals prior to testing on humans.	maintain and enforce the laws and rules that govern the use of animals in all areas of research.	work with scientists, doctors, and vets in laboratories assisting in experiments, analyzing data, and maintaining equipment.	study medical conditions and conduct experiments in all fields of biomedical research to develop new medical techniques, devices, treatments, and medicines.	use computers to help researchers design experiments and analyze the results.	record and publish the results of research, the protocols for research, and the specifications and procedures for using new medicines and surgical advances.	are responsible for inspecting farms, meat packing facilities, zoos, and medical research facilities to ensure that all federal laws are strictly upheld.	assist veterinarians with veterinary care. They can work in private animal clinics, animal hospitals, zoos, or research facilities.	



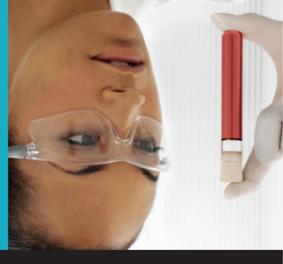
CARDIOLOGISTS
research disorders of the heart and blood vessels and develop life-saving drugs and surgical techniques such as pacemakers and artificial heart valves.



IMMUNOLOGISTS
study the body's defense mechanisms against viral or bacterial invasions and develop preventative vaccines and treatments.



GENETICISTS study DNA, stem cells and heredity, genes, and organisms are areas of such research.



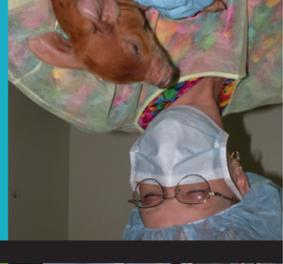
PULMONOLOGISTS
research ways to treat diseases of the lungs and airways such as lung cancer, pneumonia, pleurisy, asthma, sleep apnea, and emphysema.



HEMATOLOGISTS
research ways to treat diseases of the blood, spleen, and lymph glands, such as anemia, sickle cell disease, hemophilia, and leukemia.



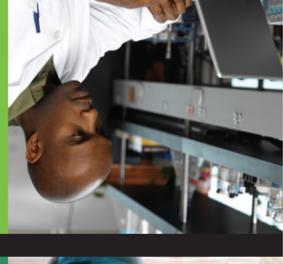
RESEARCH VETERINARIANS
research the diseases and conditions associated with domestic pets, livestock, and wild animals and develop vaccines, treatments, and cures.



TOXICOLOGISTS study toxic substances and their effects on organisms, helping people and animals that have been poisoned by household environmental toxins, and prescription and nonprescription drugs.



MICROBIOLOGISTS
research the causes of disease such as viruses, bacteria, fungi, and parasites.



ENDOCRINOLOGISTS
research disorders of the endocrine system and related conditions such as diabetes, obesity, and thyroidism.



ONCOLOGISTS research ways to treat and cure all types of cancer, in humans and in animals.



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of animals needed to obtain for ways to reduce the number researchers continue to look Scientists and medical treatments and procedures assure the safety of new medical and curing diseases that affect both humans and animals and to methods for diagnosing, treating, more about these conditions and to discover more effective understand the situation. Researchers use animals to learn conditions in both humans and in animals, they need to reasons. Before scientists can develop ways to treat health are a critical part of biomedical research for many used in medical research, testing, and teaching. Animals research that specializes in the care and study of animals Laboratory animal science is the area of biomedical

What is laboratory animal science? Why is it important to biomedical research?

them understand what causes the problems and to identify design and conduct experiments that help search for a permanent cure. They develop an effective treatment and processes of a disease in order to together to study the biological and a variety of scientists working technicians, research technicians, scientists, engineers, animal care doctor, veterinarians, computer Such a team might include medical different backgrounds and specialties requires a team of people drawn from areas of both the life and physical sciences and This broad field of research includes many important Who conducts biomedical research?



Biomedical research is the broad area of science that is undertaken to gain knowledge and understanding of the biological processes and the causes of disease. Biomedical research is an evolutionary process that requires the input and participation of many professionals. Through careful experimentation, laboratory work, analysis, and testing, biomedical researchers look for ways to prevent, treat, and cure diseases that cause illness and death in people and in animals.

What is biomedical research?

valid results, to refine experimental techniques, and to even the most sophisticated technology cannot mimic the complicated interactions occurring among cells, tissues, and organs in a living body; so, animals will continue to play an important, and irreplaceable, role until effective alternatives are found. Researchers remain devoted to providing the best care for these animals, which also strengthens valid and reliable research results.

- Research corporations
- Biotech firms
- Colleges/universities
- Pharmaceutical companies
- Hospitals/medical schools
- Veterinary schools
- Military/government agencies
- Non-profit associations
- Voluntary health organizations

There are positions in: Just as careers in biomedical research cover a wide range of positions and fields, jobs can be found around the world and in a variety of work environments.

Where would I work?

biomedical research that will suit you perfectly! desire to help both humans and animals. There is a job in of disease, medical conditions, and health, and the are a joy for discovery, a need to further our understanding



- Research scientists work in a research laboratory designing and conducting experiments.
- Computer programmers and statisticians work with statistical analysis of research results.
- Technical writers use their good writing skills to prepare grant applications, write research plans, and summarize results.
- Medical doctors work with human patients.
- Veterinarians and animal care technicians care for research animals.
- Engineers design and maintain medical devices, research equipment, animal housing, and laboratory facilities.

What kinds of careers are there in biomedical research?

Depending on your interests and the field of science you like best, there are many career options in biomedical research! Research scientists work in a research laboratory designing and conducting experiments. Computer programmers and statisticians work with statistical analysis of research results. Technical writers use their good writing skills to prepare grant applications, write research plans, and summarize results. Medical doctors work with human patients. Veterinarians and animal care technicians care for research animals. Engineers design and maintain medical devices, research equipment, animal housing, and laboratory facilities.



Careers in Biomedical Research is published by the California Society for Biomedical Research (CSBR) and the AALAS Foundation. Additional copies can be requested through:



www.ca-biomed.org/csbr



www.aalasfoundation.org

For additional information, resources, and web links about the interesting career opportunities in biomedical research, visit:

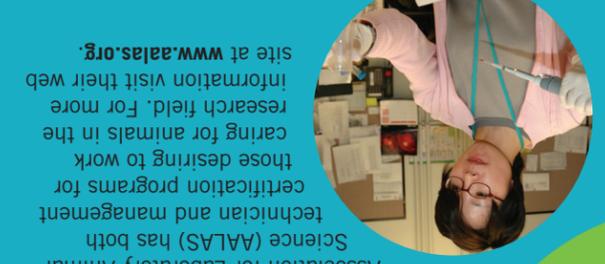
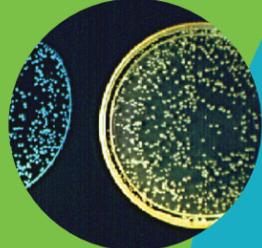
- www.care.aalas.org
- www.kids4research.org
- www.aalasfoundation.org
- www.ca-biomed.org/csbr

View the “Accept the Challenge to Care: Careers in Laboratory Animal Science” video at www.aalasfoundation.org. This video explores a variety of career choices in laboratory animal science and explains the benefits of biomedical research to people and animals. Visit www.care.aalas.org where you will find a collection of video interviews of laboratory animal science professionals speaking about their day-to-day job responsibilities and offering career advice in the rewarding field of laboratory animal science.



How do I prepare for a career in biomedical research?

Start right now! For any career in biomedical research, a strong foundation in the life and physical sciences and math in high school is important. While some jobs in research require only a high school diploma, others need specific training, certification, or a college degree, and still others require education beyond the four-year college degree. It is important that you take advantage of all the classes your school offers in these areas. Whether you plan on a career right out of high school or a career that requires a college or an advanced degree, make sure you have good grades, a strong grounding in the sciences and math, and good writing and communication skills. If attending college, talk with your high school guidance counselor to make sure you take all the required classes for entrance into an accredited college or university. College is competitive and can be expensive; getting good grades will increase your chances of being accepted into the college of your choice and of receiving scholarships. Once you are in college, always work with your academic advisor to plan your course load to not only satisfy all graduation requirements, but to also gain exposure to the sciences relating to biomedical research. Knowing more about each field of science can better help you choose the specific area for your future career!



Not all careers in biomedical research require a college or advanced degree. Some careers in research require certification or specialized training instead of, or in addition to, college or graduate school. The American Association for Laboratory Animal Science (AALAS) has both technician and management certification programs for those desiring to work caring for animals in the research field. For more information visit their web site at www.aalas.org.

