Investigate the relationship between past, current and emerging applications of biotechnology in agriculture.

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Analyze the relationship and implications of bioethics, laws and public perceptions on applications of biotechnology in agriculture.
- Research the biggest challenges producers face when adopting new technology.
- Research the adoption of technology by agriculture producers in your area.

**Future Careers (visit AgExplorer.com):**
- Biological Technician
- Plant Biologist
- Agriculture Science Teacher

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Evaluate the scope and implications of regulatory agencies on biotechnology applications in agriculture.

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Design a study to examine public perceptions of scientifically based arguments regarding biotechnology in agriculture.
- Analyze the impact major regulatory issues have on public acceptance of biotechnology in agriculture.
- Work as an intern for the local agriculture department.

**Future Careers (visit AgExplorer.com):**
- Advisor: Government/Stakeholder Relations
- Regulatory Scientist
- Biological Technician

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Analyse the impact major regulatory issues have on public acceptance of biotechnology in agriculture.

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Work as an intern for the local agriculture department.
- Create podcasts about agricultural issues.
- Evaluate the scope and implications of regulatory agencies on applications of biotechnology in agriculture and the protection of public interests.

**Future Careers (visit AgExplorer.com):**
- Advisor: Government/Stakeholder Relations
- Agricultural Lobbyist
- Regulatory Scientist

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Research factors and data regulatory agencies use to evaluate the risks new biotechnology applications pose.

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Evaluate the scope and implications of regulatory agencies on applications of biotechnology in agriculture and the protection of public interests.
- Work as an intern for the local agriculture department.
- Work for the natural resources and conservation district.

**Future Careers (visit AgExplorer.com):**
- Reproductive and Nutritional Specialist
- Plant Biologist
- Regulatory Scientist
Analyze the implications of bioethics, laws and public perceptions on biotechnology applications in agriculture.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Work as an intern for the local agriculture department.
» Design a study to examine public perceptions of scientifically based arguments regarding biotechnology in agriculture.
» Research the biggest challenges producers face when adopting new technology.

Future Careers (visit AgExplorer.com):
Advisor: Government/Stakeholder Relations
Agricultural Lobbyist
Agricultural Legal Assistant

BIOENGINEERING SYSTEMS
Perform ongoing maintenance of laboratory equipment according to standard operating procedures.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Perform sterilization techniques for equipment in a laboratory using standard operating procedures.
» Operate advanced laboratory equipment and measurement devices.
» Create hands-on classroom curriculum activities.

Future Careers (visit AgExplorer.com):
Biostatistician
Laboratory Technician
Agriculture Science Teacher

Design a study to examine public perceptions of scientific arguments regarding biotechnology in agriculture.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Evaluate the scope and implications of regulatory agencies on applications of biotechnology in agriculture and the protection of public interests.
» Produce a weekly column about agricultural issues for a newspaper.
» Interview a naturalist.

Future Careers (visit AgExplorer.com):
Agricultural Literacy and Advocacy Specialist
Bioinformatics Scientist
Agriculture Science Teacher

BIOENGINEERING SYSTEMS
Operate advanced laboratory equipment and measurement devices.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Perform ongoing maintenance of laboratory equipment according to standard operating procedures.
» Work for a local university in the area of robotics in agriculture.
» Work for a testing laboratory.

Future Careers (visit AgExplorer.com):
Biostatistician
Laboratory Technician
Game Warden
Perform sterilization techniques for equipment in a laboratory using standard operating procedures.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Perform ongoing maintenance of laboratory equipment according to standard operating procedures.
» Implement standard operating procedures for the safe handling and/or disposal of biological and chemical materials in a laboratory.
» Work for a testing laboratory.

Future Careers (visit AgExplorer.com):
Biostatistician | Laboratory Technician | Biosecurity Monitor

Implement standard operating procedures for safe handling of biological and chemical materials in a lab.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Perform sterilization techniques for equipment in a laboratory using standard operating procedures.
» Work on plumbing waste systems and air and water systems in agricultural settings.
» Start a service to collect used pesticide containers.

Future Careers (visit AgExplorer.com):
Biostatistician | Laboratory Technician | Biosecurity Monitor

Evaluate factors that influence gene expression.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Examine and perform scientific procedures using microbes, DNA, RNA and proteins in a laboratory.
» Conduct studies to track the movement of transgenes in the environment.
» Design and conduct experiments to evaluate an existing transgenic eukaryote.

Future Careers (visit AgExplorer.com):
Bioinformatics Scientist | Molecular Biologist | Plant Geneticist

Examine and perform scientific procedures using microbes, DNA, RNA and proteins in a laboratory.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Transform plant or animal cells by performing a cellular transformation.
» Evaluate factors that influence gene expression.
» Create hands-on classroom curriculum activities.

Future Careers (visit AgExplorer.com):
Bioinformatics Scientist | Laboratory Technician | Agriculture Science Teacher

BIOTECHNOLOGY SYSTEMS

BIOTECHNOLOGY SYSTEMS

BIOTECHNOLOGY SYSTEMS

BIOTECHNOLOGY SYSTEMS
Evaluate the biochemical properties of proteins to explain their function and predict potential uses.

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Examine and perform scientific procedures using microbes, DNA, RNA and proteins in a laboratory.
- Evaluate factors that influence gene expression.
- Perform ongoing maintenance of laboratory equipment according to standard operating procedures.

**Future Careers (visit AgExplorer.com):**
- Bioinformatics Scientist
- Molecular Biologist
- Analytical Chemist

**Design and conduct experiments to evaluate an existing transgenic eukaryote.**

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Use antibodies to detect and quantify antigens by conducting an Enzyme-Linked Immunosorbent Assay (ELISA).
- Perform sterilization techniques for equipment in a laboratory using standard operating procedures.
- Plan plant-related activities and laboratories for your class.

**Future Careers (visit AgExplorer.com):**
- Bioinformatics Scientist
- Plant Geneticist
- Laboratory Technician

**Use antibodies to detect and quantify antigens by conducting an Enzyme-Linked Immunosorbent Assay (ELISA).**

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Design and conduct experiments to evaluate an existing transgenic eukaryote.
- Transform plant or animal cells by performing a cellular transformation.
- Perform sterilization techniques for equipment in a laboratory using standard operating procedures.

**Future Careers (visit AgExplorer.com):**
- Bioinformatics Scientist
- Laboratory Technician
- Plant Geneticist

**Transform plant or animal cells by performing a cellular transformation.**

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Conduct studies to track the movement of transgenes in the environment.
- Examine and perform scientific procedures using microbes, DNA, RNA and proteins in a laboratory.
- Apply biotechnology principles, techniques and processes to enhance the production of food through the use of microorganisms and enzymes.

**Future Careers (visit AgExplorer.com):**
- Bioinformatics Scientist
- Plant Geneticist
- Laboratory Technician
**Conduct studies to track the movement of transgenes in the environment.**

Is this right for me?
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
- Apply biotechnology principles, techniques, and processes to enhance plant and animal care and production.
- Evaluate factors that influence gene expression.
- Design and conduct experiments to evaluate an existing transgenic eukaryote.

Future Careers (visit AgExplorer.com):
- Bioinformatics Scientist
- Biostatistician
- Laboratory Technician

**Evaluate the impact of modified organisms on the natural environment.**

Is this right for me?
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
- Investigate the relationship between past, current, and emerging applications of biotechnology in agriculture.
- Create podcasts about agricultural issues.
- Interview a naturalist.

Future Careers (visit AgExplorer.com):
- Plant Biologist
- Agronomist
- Agriculture Science Teacher

**Apply biotechnology techniques to enhance the production of food by using microorganisms and enzymes.**

Is this right for me?
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
- Perform sterilization techniques for equipment in a laboratory using standard operating procedures.
- Research why new food fails to sell.
- Develop a plan to manage school food waste.

Future Careers (visit AgExplorer.com):
- Bioinformatics Scientist
- Biostatistician
- Food Technologist

**Monitor and evaluate processes used in the synthesis of a molecule.**

Is this right for me?
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
- Perform ongoing maintenance of laboratory equipment according to standard operating procedures.
- Conduct studies to track the movement of transgenes in the environment.
- Apply biotechnology principles, techniques, and processes to enhance plant and animal care and production.

Future Careers (visit AgExplorer.com):
- Bioinformatics Scientist
- Molecular Biologist
- Laboratory Technician

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**BIOTECHNOLOGY SYSTEMS**

**BIOTECHNOLOGY SYSTEMS**

**BIOTECHNOLOGY SYSTEMS**

**BIOTECHNOLOGY SYSTEMS**
Apply biotechnology principles, techniques, and processes to enhance plant and animal care and production.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Design animal-care protocols to ethically monitor and promote animal systems associated with biotechnology.
» Perform plant-breeding techniques (e.g., plant tissue culture, etc.).
» Analyze the impact of major regulatory issues on public acceptance of biotechnology in agriculture.

Future Careers (visit AgExplorer.com):
- Bioinformatics Scientist
- Plant Biologist
- Animal Biotechnologist

BIOTECHNOLOGY SYSTEMS

Design animal-care protocols to ethically monitor and promote animal systems associated with biotechnology.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Research and categorize the types of pharmaceuticals developed for animals and humans through biotechnology.
» Work as a veterinary assistant.
» Work on a dairy farm or heifer-raise farm.

Future Careers (visit AgExplorer.com):
- Animal Geneticist
- Reproductive and Nutritional Specialist
- Animal Caretaker/Operations Manager

BIOTECHNOLOGY SYSTEMS

Perform plant-breeding techniques (e.g., plant tissue culture, etc.).

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Design animal-care protocols to ethically monitor and promote animal systems associated with biotechnology.
» Work as a veterinary assistant.
» Research the biggest challenges producers face when adopting new technology.

Future Careers (visit AgExplorer.com):
- Animal Geneticist
- Reproductive and Nutritional Specialist
- Analytical Chemist

BIOTECHNOLOGY SYSTEMS

Research and categorize the types of pharmaceuticals developed for animals and humans through biotechnology.

Is this right for me?
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Where could I take this project?
» Design animal-care protocols to ethically monitor and promote animal systems associated with biotechnology.
» Work as a veterinary assistant.
» Research the biggest challenges producers face when adopting new technology.

Future Careers (visit AgExplorer.com):
- Animal Geneticist
- Reproductive and Nutritional Specialist
- Agricultural Science Teacher
Examine and synthesize the need for biofuels (e.g., cellulosic bioenergy, etc.).

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Produce alcohol/biodiesel/methane and co-products from biomass.
» Conduct a review of the technologies used to create biofuels from biomass and weigh the pros and cons of each method.
» Work as a diesel mechanic assistant.

Future Careers (visit AgExplorer.com):
Biorefining Manager | Ethanol Engineer | Agriculture Science Teacher

BIOTECHNOLOGY SYSTEMS

Produce alcohol/biodiesel/methane and co-products from biomass.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Examine and synthesize the need for biofuels (e.g., cellulosic bioenergy, etc.)
» Research the biggest challenges producers face when adopting new technology.
» Conduct a review of the technologies used to create biofuels from biomass and weigh the pros and cons of each method.

Future Careers (visit AgExplorer.com):
Biorefining Manager | Ethanol Engineer | Environmental Engineer

BIOTECHNOLOGY SYSTEMS

Study the technologies used to create biofuels from biomass and weigh the pros and cons of each method.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Examine and synthesize the need for biofuels (e.g., cellulosic bioenergy, etc.)
» Research the biggest challenges producers face when adopting new technology.
» Produce alcohol/biodiesel/methane and co-products from biomass.

Future Careers (visit AgExplorer.com):
Biorefining Manager | Ethanol Engineer | Environmental Engineer

BIOTECHNOLOGY SYSTEMS

Conduct studies to evaluate the treatment of a waste product using a genetically engineered organism.

Is this right for me?
» Would I enjoy working with this project?
» Do I currently have, or have access to, needed resources for this project?

Where could I take this project?
» Design a bioremediation project including plans to evaluate the effectiveness of the effort.
» Work on plumbing waste systems and air and water systems in agricultural settings.
» Research area pollution concerns.

Future Careers (visit AgExplorer.com):
Biorefining Manager | Biosecurity Monitor | Environmental Compliance Officer

BIOTECHNOLOGY SYSTEMS
Design a bioremediation project including plans to evaluate the effectiveness of the effort.

**Is this right for me?**
- Would I enjoy working with this project?
- Do I currently have, or have access to, needed resources for this project?

**Where could I take this project?**
- Conduct studies to evaluate the treatment of a waste product using a genetically engineered organism.
- Research the effectiveness of habitat restoration projects in your community.
- Research area pollution concerns.

**Future Careers (visit AgExplorer.com):**
- Biorefining Manager
- Biosecurity Monitor
- Environmental Engineer

**BIOTECHNOLOGY SYSTEMS**

**Is this right for me?**
- Would I enjoy working with this project?
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- Conduct studies to evaluate the treatment of a waste product using a genetically engineered organism.
- Research the effectiveness of habitat restoration projects in your community.
- Research area pollution concerns.

**Future Careers (visit AgExplorer.com):**
- Biorefining Manager
- Biosecurity Monitor
- Environmental Engineer

**RESEARCH**

**BIOTECHNOLOGY SYSTEMS**

**Is this right for me?**
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**Where could I take this project?**
- Conduct studies to evaluate the treatment of a waste product using a genetically engineered organism.
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- Research area pollution concerns.

**Future Careers (visit AgExplorer.com):**
- Biorefining Manager
- Biosecurity Monitor
- Environmental Engineer

**RESEARCH**

**BIOTECHNOLOGY SYSTEMS**

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**Future Careers (visit AgExplorer.com):**
- Biorefining Manager
- Biosecurity Monitor
- Environmental Engineer

**RESEARCH**

**BIOTECHNOLOGY SYSTEMS**

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**Where could I take this project?**
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- Research the effectiveness of habitat restoration projects in your community.
- Research area pollution concerns.

**Future Careers (visit AgExplorer.com):**
- Biorefining Manager
- Biosecurity Monitor
- Environmental Engineer

**RESEARCH**