COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:
cpb ITVS

FUTURESTATES.TV

COMMUNITY CLASSROOM
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COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

The Future of Genetic Engineering Lesson Plan Overview

Topics Covered

Biological diversity; genetic engineering; environmental balance; natural and human-induced hazards; population growth; science and technology in local, national, and global levels challenges.

Target Audience

Grade 9 Biology, Environmental Science with modifications for Grade 10-12 Advanced, AP or Dual credit Biology or Environmental Science. This lesson is designed to follow instruction in biotechnology and requires some familiarity with agricultural GMOs.

National Educational Standards

All components are aligned to the National Science Education Standards as presented by the National Academy of Science and available as a free download at: http://www.nap.edu/catalog/4962.

The lesson addresses the following standards:

NS.9-12.1 SCIENCE AS INQUIRY
As a result of activities in grades 9-12, all students should develop

- Understandings about scientific inquiry

NS.9-12.3 LIFE SCIENCE
As a result of their activities in grades 9-12, all students should develop understanding of

- Molecular basis of heredity
- Interdependence of organisms

NS.9-12.5 SCIENCE AND TECHNOLOGY
As a result of activities in grades 9-12, all students should develop

- Understandings about science and technology

NS.9-12.6 PERSONAL AND SOCIAL PERSPECTIVES
As a result of activities in grades 9-12, all students should develop understanding of

- Environmental quality
- Natural and human-induced hazards
- Science and technology in local, national, and global challenges

NS.9-12.7 HISTORY AND NATURE OF SCIENCE
As a result of activities in grades 9-12, all students should develop understanding of

- Science as a human endeavor
- Nature of scientific knowledge
- Historical perspectives

In addition to the National Standards for Science, the lesson plans provide an excellent framework for instruction in Media Literacy. This instruction further supports both NS.9-12.1 SCIENCE AS INQUIRY and NS.9-12.7 HISTORY AND NATURE OF SCIENCE by instructing students in methods that will make them more effective in media analysis. Information on Media Literacy can be found at www.NAMLE.net .

Time

Each lesson is designed for a 45-55 minute class period. The modules may be separated or combined to accommodate differences in instructional time. The entire unit is designed to be completed in four days.

Overview of *Seed*

In an industry dominated by genetically modified seeds, a poor farmer struggles to survive. When he resorts to smuggling now-illegal organic seeds across borders, he risks everything.

Summary of Lesson

The lesson reviews the history of agricultural biotechnology. Students will propose a new GMO product based on need, potential for profit, and minimal environmental effects. After the film is shown, students will be asked to consider a future similar to the one depicted in the film. Students are invited to make a prediction concerning the future use of GMOs. They will then investigate the predictions on the Predict-O-Meter, which is located on the FUTURESTATES website. Students are encouraged to add a prediction of their own design. Students will conclude the lesson by responding to a writing prompt.

Background Brief

This is information for the teacher. It includes information about agricultural biotechnology that may help you guide your students as they contemplate the future status of GMOs.

Definitions

Before investigating the development of genetically modified foods, it is important to understand the differences between conventional, organic, and genetically modified foods. Throughout history, conventional farming and organic farming have been virtually the same. It wasn't until the development and subsequent wide-spread use of inorganic pesticides and herbicides during the mid-twentieth century that agriculture moved away from organic farming techniques. Conventional farming differs from organic farming in its use of synthetic chemicals to enhance either the product itself or the productiveness of the product. Conventional farming utilizes herbicides, pesticides, fertilizers, and selected hormones to improve plant production. Routine use of antibiotics and growth hormones is also employed in the raising of animals for human consumption. Organic farming generally prohibits the use of any inorganic pesticides, insecticides, or herbicides in the production of the food. Organically raised food is virtually free of antibiotics, growth hormones, and residual inorganic pesticides or herbicides. By definition, the genome is also free of any contaminants. This definition precludes the possibility of organic GMOs: although GMOs can be grown organically, the USDA does not certify them as organic foods. Genetically modified foods may be raised either conventionally or organically. The distinction is in their genome. GMOs contain bits of other organisms' DNA and are often termed "transgenic."

Selective Breeding

Humans have been engaged in selective "engineering" for thousands of years. The selective crossing of one individual with another to produce a desired trait in an offspring has been the basis for the development of the many breeds of domesticated plants and animals. In the past, the success or failure of an individual cross was largely a matter of chance, as explained by Mendel and other geneticists. Today, selective breeding occurs at the molecular level with the direct transfer of desired DNA from one organism to another. Bioengineering produces organisms with modified genomes. As a result, they are most often referred to as GMOs (genetically modified organisms).

Basic Techniques of Biotechnology
Although there are many different ways to create a GMO, the process involves four basic procedures.

- Stage 1: DNA cleavage
  Once a desirable characteristic has been selected, isolation and removal of the gene responsible for the trait must be accomplished. Restriction enzymes are used to cleave the DNA and remove the desired segment from the genome.
- Stage 2: Production of recombinant DNA
  The cleaved fragments of DNA are joined with either a bacterial plasmid or viral vector to form a new "designer gene". At this point, there is only one piece of recombinant DNA and it is not in the target cell.
- Stage 3: Cloning
  The plasmid or virus will act as a vector to introduce the new piece of DNA back into the host's cells. If the transfer is successful, the cells will contain a piece of recombinant DNA in their genome. Every time the cell undergoes cell division, it will replicate the recombinant DNA along with its own genome and transfer it to the daughter cells. The result is an increase in the number of cells containing the desired gene.
- Stage 4: Screening
  Although every cell is theoretically supposed to contain the recombinant gene, in reality not every vector will successfully deliver the gene. In this final stage, the cells are examined for evidence of the transferred gene. Tagging the recombinant DNA with radioactive probes, antibiotic sensitivity, or bioluminescence are all common screening techniques.

Commercial Production and Identification of GMOs
Once a particular gene is identified and the transfer is successful, there is still the need to make multiple copies of it. Polymerase chain reaction (PCR) is a commercial application that can produce billions of copies of a gene fragment in a matter of hours.

After the successful development of a GMO, there still remains the need to identify the genetic marker of the GMO. In some instances, the modified trait might not remain stable in future generations. The Southern blot technique is a simplified form of DNA fingerprinting that identifies a specific sequence, notably the engineered gene, within the offspring. It is a means of identifying and verifying the quality of the GMO.

Current Products and Concerns
The number of GMOs increases every year. Some of the oldest and most accepted agricultural GMOs are Bt corn, Bt cotton, and "Roundup Ready" soybeans. The Bt products are the result of the insertion of a gene from the organism *Bacillus thuringiensis* into the target plant. The Bt organism is poisonous to caterpillars and when the gene is expressed in the leaves of a plant, it serves as a powerful internal pesticide. The greatest concerns over the use of Bt products came from a study on the effects of Bt pollen on monarch butterflies. When the insects were fed a diet of only Bt silks, they were poisoned in the same manner as the caterpillars. Although most scientists see this as an extremely flawed experiment, the concern over the indiscriminant poisoning of non-target insects remains at the forefront in the debate over the use of Bt corn.

"Roundup Ready" soybeans have been engineered to resist the effects of glyphosate, the active ingredient in the herbicide Roundup. The resistance was found naturally occurring in certain weeds. The concern with the use of "Roundup Ready" technology is the accidental natural selection for "super-weeds."

In general, there is a concern over the loss of diversity as agriculture turns to the more productive, disease-resistant, genetically-modified varieties of seeds. History has many examples of famine that resulted from a single disease destroying crops that were all of the same genetic make-up (for example, the Irish potato famine). Opponents of the wide-spread use of agricultural GMOs caution against the exclusive use of the products. There is a movement to safeguard and cultivate the older, less resistant varieties of plants. The seeds from these plants are collected and sold as "heirloom seed."

Precautionary Principle

In 1998, the Precautionary Principle was presented as a proposed basis for future environmental and public health policy. In effect, it stated that when the health of humans or the environment was at stake, it was not always necessary to wait for scientific proof before taking protective actions. In other words, it followed the old adage "it is better to be safe than sorry." The Precautionary Principle is based on the ethical assumption that humans have the responsibility to protect, preserve, and restore the global ecosystem. It also puts the burden of proof that the action is harmless on those taking the action. Future development and cultivation of agricultural GMOs may be approved or prohibited based on this policy.

Commercial Production and Identification of GMOs

Web Resources

For more information on genetic transfer, PCR, and bioengineering:

http://www.hhmi.org (Click on "Biointeractive," then choose "Animation")

http://wwwdnalc.org

For more information on Bt corn and Roundup Ready Soybeans:

http://www.ars.usda.gov/is/br/btcorn

http://www.ca.uky.edu/entomology/entfacts/ef130.asp

For more information on organic foods:

http://www.organic.org

http://www.organicfoodinfo.net

For more information on the Precautionary Principle:

http://www.sehn.org

http://www.precaution.org

http://www.pprinciple.net/the_precautionary_principle.html

Additional information is available in most advanced biology textbooks.

Lesson 1

Objectives

Students will:

- Identify selected GMOs and describe the technology used in the development of the products.
- Relate the intended benefits associated with the use of the products.
- Recognize and discuss the potential problems associated with the products.
- Discuss the contrasts between the intended benefits and the potential problems associated with developing the products, and consider the precautionary principle.
- Propose and defend the development of an agricultural GMO. (Students will design their own.)
- Make predictions pertaining to the development of their proposed GMOs.

Materials

- A "Grapple" or other example of an enhanced agricultural product
- Proposed Product Worksheet (see page 11)
- Ticket Out worksheet (see page 13)

Beginning (10-12 minutes)
Begin with a whole class discussion. Show students a "Grapple" (a Grapple is a grape-flavored apple: http://www.grapplefruits.com/index.html). Explain the product. Ask students to determine if this is an example of genetic engineering. Discussion will lead to the conclusion that it is not. It is an enhanced product. Why would a company want to know about the popularity of a grape-flavored apple? Could this be a GMO product in the future? What might be some problems associated with the development of this or any other genetically modified apple? Just because we can do this, should we? Introduce or re-teach the precautionary principle and the ethics of altering the genome of a species.

Middle (30 minutes)
Organize students into teams of 3-4. Their task is to prepare a proposal for a new GMO. They must be prepared to address the potential benefits and risks associated with the product. Distribute the Proposed Product Worksheet. Each team will present and defend their proposal to the class. This is a brainstorming/critical thinking exercise and if possible should not be extended beyond the class period.
Suggested development time: 10-15 minutes
Presentations: 2-3 minutes/group
Times will vary according to class size and ability.

End (5-7 minutes)
End the class using the "ticket out" strategy. This strategy asks students to answer one question on a worksheet as their "ticket" out of the classroom (see supplemental documents for the Ticket Out Worksheet). Ask students the following question: "Of the products proposed by the class, which one do you believe is most likely to be developed? When do you think we could make this product (1 year, 5 years, 10 years, beyond 10 years)?" The answers will provides a quick, informal assessment that checks for understanding and permits the instructor to re-direct teaching if necessary. Additional information on the "ticket out" strategy may be found at: http://teachingstrategies.pbworks.com/Ticket-Out-the-Door

Assessment

- Responses during discussions.
- Ticket Out responses

Lesson 2

Objectives

The student will:

- View and analyze the film *Seed*.
- Make predictions pertaining to the future of GMO foods.

Materials

- Computer/Internet access for viewing the film
- Question Guide for *Seed* (see page 12)

Beginning (5-7 minutes)
Share some of the predictions from the previous class's "ticket out" worksheets. Briefly discuss the selections and student responses. Tell students that today they will be viewing *Seed*, a film that presents a futuristic view of agricultural GMOs and their use in the world. As students watch the film, they should use the Question Guide to jot down impressions, important information, and any questions they might have. Tell the students that, as in all media messages, there is bias in this film. Be certain to consider what the significance of the bias might be, who this film is really trying to target, and who might benefit or be harmed by the messages in this film.

*Middle (*25-30 minutes)
View the film *Seed*.

Upon completion of the film, discuss the students' impressions of the film. Suggested questions:

- How is the future depicted in the film different from the current status of GMOs?
- What is the reason for the exclusion of all non-engineered seed?
- What is the significance of the monarch butterfly?
- What was the tool actually detecting?
- Do we have the technology to create the world depicted in the film?
- How could a private company like the Mendelian Company ever actually control the food supply?
- If it is for "our own good," does the government have the right to control our food supply? Where does the FDA fit into this discussion?

End (10 minutes)
Students will complete Question Guide worksheet.

Assessment:

- Responses during the post-viewing discussion
- Worksheet responses

Lesson 3

Objectives

The student will:

- Investigate and analyze predictions for *Seed* as posted on the FUTURESTATES Predict-O-Meter.
- Formulate and post their prediction on the Predict-O-Meter site.

Materials

- Computer/Internet access for website and Predict-O-Meter.
- Prediction evaluation worksheet/rubric (see supplemental materials).

Beginning (5-7 minutes)
Brief discussion of question guide responses. This introduction is simply to reactivate prior knowledge.

Middle (30-35 minutes)
Students will investigate predictions as presented on the Predict-O-Meter located on the FUTURESTATES website. After selecting and evaluating three of the predictions using the evaluation rubric, students will develop at least one prediction to post on the website. The proposed prediction will be evaluated by a peer and approved by the instructor before posting. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed prediction: "In 2025, a new strain of corn root worm has appeared. The Mendelian Corporation corn strains, while producing greater yields, have become much heavier with the additional weight of more and larger ears of corn. The weakened root systems do not hold the plants upright, resulting in an unprecedented loss of crop as the weakened stalks buckle and collapse."

- Is the prediction based on scientific possibilities?

  Yes, root worms do weaken the root systems of corn plants. Larger yield implies either more ears or larger ones or both.

- Do the consequences of the prediction support the film?

  Yes, decreasing diversity in a crop increases the likelihood of massive crop loss if a new pest or disease arises.

- Do known events in the past support the prediction?

  Yes. The development of the Mendelian corn itself was in response to a weakness of other strains to corn rot.

- Is this prediction plausible?

  This is the evaluator's opinion based on the evidence presented in defense of the prediction.

FUTURESTATES Predict-O-Meter Activity Instructions:
Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains predictions based on the FUTURESTATES films, including *Seed*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Seed* film. Choose three predictions to evaluate using the FUTURESTATES Predict-O-Meter Evaluation Form. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Note: It is likely that students will take all period to explore the Predict-O-Meter. The evaluation of the predictions may be required homework or can be extended to the beginning of the next class period.

End (10 minutes)
Choose one or two predictions to briefly discuss.

Assessment

- Student responses on selected predictions.
- Completion of prediction evaluation worksheets.

Extension Activities and Modifications

Lesson 1

This lesson can easily be extended over two days. This may be particularly desirable if the students struggle with the brainstorming part of the activity. Also, larger classes may not have time to present their proposed products. A suggested modification would be to develop the product proposal on day one and present the proposed GMOs on day two. With the additional time, the presentations could be videotaped or presented as PowerPoint presentations. An extension of time would permit multiple classes to view each other's presentations and analyze the presentations using the "key questions" presented by the National Association for Media Literacy Education at www.NAMLE.net. This would provide the students with practice in analyzing media messages.

Lesson 2

If the students have not previously been instructed in media literacy, this lesson could begin with an introduction to media literacy.

If time is an issue for the teacher, the film could be used as enrichment to support instruction in bioengineering. It can also be paired with the FUTURESTATES film *Mr. Green* as enrichment to accompany a unit on biotechnology.

Lesson 3

It may be desirable to simply investigate the Predict-O-Meter site. Students may explore the site without formal evaluation or development of predictions.

Additional Lessons

If desired, the unit may include additional time to explore some of the ethics associated with controlling the food supply. Students may investigate a current issue by reading articles from opposing viewpoints and then discussing the information with the class. Example: Monsanto's proposed use of GMO alfalfa.

Suggested websites:

USDA/Monsanto GE alfalfa (June 2010)
http://www.reuters.com/article/idUSN232672520100623
http://healthfreedoms.org/2010/03/01
http://action.fooddemocracynow.org

General current topics (updated)
www.foodsafetynews.com
www.usda.gov/documents/BIOTECHNOLOGY.pdf

This unit may also include a response to a writing prompt. Information for creating writing rubrics may be found at:

- AP 9-point rubric: http://www.englishcompanion.com/pdfDocs/aprubricjago.pdf
- Sample Six Traits rubrics: http://educationnorthwest.org/resource/464
- Templates for personalized rubrics: http://rubistar.4teachers.org

Suggestions for the prompt include, but are not limited to:

Could exclusive use of high yield, high quality genetically-modified seed actually safeguard the world against famine, or would it ensure a future food shortage? Support your answer.

Do you think a world like the one depicted in Seed *could ever come to be?*

Currently, most of Europe is against genetically-modified food. Do you think the logic presented in Seed *could lead to such a profound change of opinion in America concerning the use of GMOs?*

In the film, the use of genetically modified seed is not merely encouraged, but required, while heirloom seeds are outlawed. Why? Who is benefiting from this law? How could such a law come into being?

Proposed Product Worksheet

Company name:

R & D Team members:

Proposed product (*GMO or its name*): _____

Needs Assessment for Product (*Who would benefit from the development of the product?*):

Production Techniques (*How would you make the product?*):

Potential Concerns (*Just because it can be done, should it? What or who might be affected by the development of this product?*):

Public Relations (*How would you market your product?*):

Question Guide for *Seed*

Before watching the film, read through the following questions. Use the guide to help you take notes and organize your thoughts during and after viewing the film.

1. At the beginning of the film, Juan is using a device to verify the purity of the plants. What do you think the device is detecting? Why do you think that?

2. What is the reason for the exclusion of all non-engineered seed? Does the film ever tell you the reason?

3. How is the future status of agricultural GMOs depicted in the film different from the current status of genetically modified food?

4. What is significant about the use of a monarch butterfly to detect "pure" seed? Would everyone viewing the film understand the significance of the monarch?

5. Who is this movie targeting with its message? How do you know?

6. What other youth group did the "Sprouts" remind you of? What did the filmmaker use to make that connection in your mind?

7. The source of the "heirloom seed" was a Native American. Do you think the filmmaker was trying to express anything with that choice, or was it just a coincidence?

8. Is the premise of this film plausible? Do we have the technology to create the world depicted in the film?

Ticket Out

Name:

Period:

Of the products proposed by the class, which one do you believe is most likely to be developed?

Why do you think this product will probably be developed?

I think this product could be created….
a) in 1 year
b) within 5 years
c) within the next 10 years
d) beyond 10 years from now (Circle your choice.)

What needs to happen to meet the timeline you've chosen?

Ticket Out

Name:

Period:

Of the products proposed by the class, which one do you believe is most likely to be developed?

Why do you think this product will probably be developed?

I think this product could be created….
a) in 1 year
b) within 5 years
c) within the next 10 years
d) beyond 10 years from now (Circle your choice.)

What needs to happen to meet the timeline you've chosen?

Extension Activity: Predict-O-Meter Evaluation Form

FUTURESTATES Predict-O-Meter Activity Instructions
Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the FUTURESTATES films, including *Seed*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Seed* film. Choose three predictions to evaluate using the FUTURESTATES Predict-O-Meter Evaluation Form below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total = _____
5

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total = _____
5

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

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A 23 year veteran of teaching, Kathie L. Hilbert is currently the Science Chair at Connersville High School in Connersville, Indiana. Ms. Hilbert has both a BA (University of Evansville) and MAT (Miami of Ohio) in Biology. Ms. Hilbert has taught all levels of Biology and Earth Science, as well as Botany and Geology. She has also accompanied and supported her students on several summer Marine Biology programs held in Hawaii. Ms. Hilbert has written and developed curriculum for Botany, Geology, and Early College Earth Science as well as revised curriculum for other classes. She has also written curriculum for community Science Outreach Programs and was a Science Ambassador for the CDC (writing lesson plans for their website). Ms. Hilbert was Fayette County's Teacher of the Year in 2001 when she also successfully attained National Board Certification in science teaching.

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.