



ARIZONA STATE UNIVERSITY
GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

Copy and paste current course information from Class Search/Course Catalog.

Academic Unit College of Letters and Sciences Department Social Sciences
Subject STS Number 332 Title Global Issues in Science and Technology Units: 3
Is this a cross-listed course? (Choose one) NO
If yes, please identify course(s) _____
Is this a shared course? (choose one) If so, list all academic units offering this course NO
Course description: _____

Requested designation: (Choose One)

Note- a separate proposal is required for each designation requested

Eligibility:

Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact Phyllis.Lucie@asu.edu or Lauren.Leo@asu.edu.

Submission deadlines dates are as follow:

For Fall 2015 Effective Date: October 9, 2014

For Spring 2016 Effective Date: March 19, 2015

Area(s) proposed course will serve:

A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:

Complete and attach the appropriate checklist

- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Arts and Design core courses (HU)
- Social-Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SO/SG)
- Cultural Diversity in the United States courses (C)
- Global Awareness courses (G)
- Historical Awareness courses (H)

A complete proposal should include:

- Signed General Studies Program Course Proposal Cover Form
- Criteria Checklist for the area
- Course Catalog description
- Course Syllabus
- Copy of Table of Contents from the textbook and list of required readings/books

Respectfully request that proposals are submitted electronically with all files compiled into one PDF. If necessary, a hard copy of the proposal will be accepted.

Contact information:

Name Nicholas Alozie Phone 480 727 1395
Mail code 2780 E-mail: a1ozie@asu.edu

Department Chair/Director approval: (Required)

Chair/Director name (Typed): Nicholas Alozie Date: 2-11-2015
Chair/Director (Signature): Nicholas Alozie

Proposer: Please complete the following section and attach appropriate documentation.

ASU--[G] CRITERIA			
GLOBAL AWARENESS [G]			
YES	NO		Identify Documentation Submitted
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Studies must be composed of subject matter that addresses or leads to an understanding of the contemporary world outside the U.S.	Chapters of the textbook, syllabus
		2. The course must match at least one of the following descriptions: (check all which may apply):	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. In-depth area studies which are concerned with an examination of culture-specific elements of a region, country or culture group. The area or culture studied must be non-U.S. and the study must contribute to an understanding of the contemporary world.	Chapters of the textbook, syllabus
<input type="checkbox"/>	<input type="checkbox"/>	b. The course is a language course for a contemporary non-English language, and has a significant cultural component.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	c. The course is a comparative cultural study in which most, i.e., more than half, of the material is devoted to non-U.S. areas.	Chapters of the textbook, syllabus
<input checked="" type="checkbox"/>	<input type="checkbox"/>	d. The course is a study of the cultural significance of a non-U.S.-centered global issue. The course examines the role of its target issue within each culture and the interrelatedness of various global cultures on that issue. It looks at the cultural significance of its issue in various cultures outside the U.S., both examining the issue's place within each culture and the effects of that issue on world cultures."	Chapters of the textbook, syllabus

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Course Prefix	Number	Title	Designation
STS	332	Global Issues in Science and Technology	Global Awareness (G)

Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
SAMPLE: 2d: study the cultural significance of a non-U.S. centered global issue	SAMPLE: The course examines the cultural significance of financial markets Japan, Korea, and the UK.	SAMPLE: Module 2 shows how Japanese literature has shaped how Japanese people understand world markets. Module 3 shows how Japanese popular culture has been changed by the world financial market system. Modules 4 & 5 do the same for Korea and modules 6 & 7 do the same for the UK.
1: Composed of subject matter that addresses or leads to an understanding of the contemporary world outside the U.S.	This is a topical issues course that examines the major issues/debates confronting the world today, with a special emphasis on science and technology.	The syllabus description of the course, learning outcomes, and the chapters of the textbook provided for the course lay out in very clear terms the extensive global reach of this course. The book starts with an overview of the place of science and technology in society and zeros in on specific international questions such as global warming, intellectual property protection, the role of the internet, etc. Many of the materials chosen for reading come from international panels of experts and scholars who examine the subjects. The topics for the course sound very familiar, but a quick perusal of the materials and their summaries reveals their global scope.
2a: Concerned with culture-specific elements of a region, country, or culture group	The course has both a global and sub-regional scope.	Specific issues and chapters of the textbook provided zero in on countries and regions where particular issues are more prevalent. Unit 5 of the textbook treats the computer revolution.
2c: Is a comparative cultural study in which most of the materials are devoted to non-U.S. areas	The course examines its subject matter across the global stage.	Most of the topical issues discussed in this course can only be done globally. These are topics that can be treated locally, but a quick review of the summary of the materials chosen under each issue reveals their global reach.

<p>2d: Study the cultural significance of a non-U.S. centered global issue</p>	<p>The course examines the major issues of global significance from a global perspective. While it is true that the U.S. sets the standards and structures much of the global debates that eventually take place, these issues take on a global scope.</p>	<p>Issue 3 talks about internet neutrality as part of advancing democracy in the 21st Century. Unit 2 discusses the international imperatives of energy and the environment, etc.</p>
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STS 332
 catalog
 description

Report Data		Prerequisites		Components	
Course ID:	121667				
Effective Date:	06/01/2014	Status:	Active	Course Offering	
Description:	Global Issues in Science & Tech			STS	332
Long Course Title:	Global Issues in Science and Technology				
Long Description:	Examine contemporary international debates in science and technology and how those issues impact globalization.				
Course Enrollment Data					
Minimum Units:	3.00	3.00	Last Course of Mult Term Seq:	N/A	
Maximum Units:	2.00	3.00	Enrollment Unit Load Calc	Actual Units	
Academic Progress Units:	3.00		Type:	Course Count: 1.00	
Financial Aid Progress Units:	3.00		Course Contact Hours:	0.00	
Course Grading					
Grading Basis:	Stndt Opt	Grade Roster Print:	Component		
Graded Component:	Seminar				
Repeat for Credit					
<input checked="" type="checkbox"/> Repeat for Credit	Total Units Allowed:		3.00		
<input checked="" type="checkbox"/> Allow Multiple Enroll in Term	Total Completions Allowed:		1		
Additional Course Information					
Instructor Edit:	No Choice				
Add Consent:	No Consent	Drop Consent:	No Consent		
Requirement Designation:	G550	SB & G			
Equivalent Course Group:					
Course Attributes					
Course Attribute	Course Attribute Value				
ICRS	ICOURSE	ICOURSE	ICOURSE	ICOURSE	ICOURSE

Arizona State University at the Polytechnic Campus
School of Letters and Sciences

STS 332: Global Issues in Science and Technology

Spring 2014 Session B
Schedule Line Number: 19006 & 20600 (3 Units)

Venue/Format: LearningStudio Online
Professor: Dr. Alvin Mushkatel
Office: Online M-F 8-5
Phone: (480) 330-6581
Office Hours: Available online or by phone M-F, 8-5.
Email: alvin.mushkatel@asu.edu

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This course is offered by the School of Letters and Sciences. For more information about the school, visit our website: <https://sls.asu.edu/>. If you have questions or concerns, please send your inquiry to sls@asu.edu.
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Course Description:

Advances in science and technologies facilitate various socioeconomic and political processes within different countries and in their interactions with each other. For instance, new technologies in transportation and communication have intensified the global flow of capital, goods, services, and culture. These flows and processes create new challenges and issues that impact the way we interact with each other as citizens, consumers and countries. The issues and challenges are multifaceted and span various spheres such as politics, the environment, healthcare, economy, intellectual property rights and gender relations. A common theme weaving through these issues is the role of science and technology thus compelling an exploration of their implications for global relations and processes. This course therefore examines emerging global debates in science and technology in the context of globalization.

Course Learning Outcomes:

It is expected that at end of the course, students will

- Understand the major issues in the international debates on science and technology and

their impact on the interactions among individuals, on one hand and among countries on the other hand;

- Become aware of their position, role and responsibilities in an increasingly interconnected world;
- Understand contesting theories of technology and science development;
- Sharpen their analytical and problem solving skills.

Course Organization:

The course is delivered fully online. Our week begins on Monday and ends at midnight on Sunday when all weekly activities should be completed. I do not require you to work on the weekends, but you have the additional time if necessary. If you have questions or need assistance please send me an email, Alvin.mushkatel@asu.edu. Do not hesitate to email me or call me. I cannot help you if I do not know that there is a problem. I have worked at Arizona State University since 1970. I am very good at helping you find pathways that will help you to reach your goal. Please remember that email is sometimes a difficult form of communication. If you feel that my note is thoughtless or has a negative tone, please try speaking to me on the phone instead. I do get busy, but I really enjoy working with students and I want to help you to succeed.

Online courses sometimes seem very impersonal, but they are really very personal. You have the chance to proceed at your own pace, learn at your own speed and I am always just an email or phone call away. You will proceed at your own pace, but it is strongly recommended that you check into the classroom at the beginning of the week, read the weekly announcements.

WELCOME and I hope that you enjoy the readings and the flexibility offered in an on-line course.

Required Course Textbooks:

Easton, Thomas (2014). Taking Sides: Clashing Views in Science, Technology, and Society, 11th Edition. McGraw- Hill

The books are available in the ASU Polytechnic Campus bookstore and the Downtown Campus bookstore. They will be supplemented by articles and video clips that underscore the general themes of the course.

Core Curriculum: The course material is divided into 3 Units:

Unit 1: The Place of Science & Technology in Society (Sections 1.2, 1.3, 2.1, 2.2 & 2.3)

Unit 2: Human Health and Welfare (Sections 3.1, 3.2, 3.3, 3.4, & 3.5)

Unit 3: Space & Computers (Sections 4.1, 4.2, 4.3, 5.1, 5.2)

See the ***Course Schedule*** in LearningStudio.

Graded Work: Each item will have detailed instructions attached to the assignment.

Syllabus Quiz	10
Reading Position Papers (6 @ 50 points each)	300
You have a choice of completing position paper 6 or 7.	
Unit Quizzes (3 @ 50 points each)	150
TOTAL POSSIBLE POINTS:	460

Course Format:

Student learning (via LearningStudio) will occur through short position papers based on the textbook as well as other materials provided in Learningstudio. There will also be 3 short quizzes covering the assigned material. Detailed instructions will be provided with each assignment.

Grading Scale: ASU grading policy. Grading curves will not be used.

<u>Course Grade</u>	<u>% of Points</u>
A+	98-100
A	94-97
A-	91-93
B+	88-90
B	84-87
B-	81-83
C+	78-80
C	71-77
D	61-70
E	0-60

Course Policies:

Technical Support: We will be utilizing **LearningStudio** as for our course delivery system. The course provides technical support through chat, email and phone, you can speak with a technician 24x7 by calling: 1-855-278-5080, Option 5 then Option 3. The Tech Support icon on the top right of the learning studio page will provide links to all three resources. Please be sure that you have the computer resources you will need for the course by the first day.

Grading: Questions and concerns about grades or grading procedures must be addressed within one week of the quiz grade being posted. I can provide the quiz questions and answers to you, but I must wait until everyone in the course has completed the assignment. I will review all answers following the due date of each quiz and make any corrections as necessary.

Students are graded primarily on the degree to which they meet learning outcomes, not how much time and effort is put forth in the course. Proper grammar and spelling are expected; points can be lost for improper grammar and spelling. The final course grade will be based on the total points earned in the course. All course grades will be assigned on a straight percentage basis.

If you have a specific question about the grading system or course requirements please send me an email during the first week of classes. I always accept the work early, but I may deduct points if the assignment is late. I do not offer extra credit or make up work. The assignments are typically due each week on or before Sunday night by 11:59 PM (before midnight). **THE LAST ASSIGNMENT IS DUE ON A FRIDAY- THE LAST DAY OF CLASS** You are never required to work on the weekends and are welcome to submit all the assignments prior to the deadline. I cannot accept the last assignment late since I need to submit grades in a timely manner. Please plan ahead and let me know if you have any problems meeting the deadlines. I want you to succeed in both this course and the university and will do all I can do to assist you.

Submit your completed work via LearningStudio. Do not email me your work. If the website is down I will have a record of the event and you may assume that I will provide everyone in the course an extension to the deadline.

Extra Credit—I do not offer extra credit work.

E-Mail---Each student is required to activate their ASU g-mail account and check it regularly for assignments and communications. The Instructor will not communicate through any non-ASU e-mail provider. The ASU e-mail server filters incoming mail, and will heavily block non-ASU mail to professors.

Student Conduct—ASU Policy states that each student must act with honesty and integrity, and must respect the rights of others in carrying out all academic assignments. The entire policy can be found at: http://www.asu.edu/studentaffairs/studentlife/judicial/academic_integrity.htm. The instructor will strictly enforce these policies.

Student Services—A wide variety of services are available to students, including: The Writing Center, ASU Libraries, Counseling, Student Success Center, Career Services, Financial Aid, and Student Health. Detailed information can be found at: <http://www.poly.asu.edu/students/services/>.

Americans with Disabilities Act---The ADA is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. One element of this legislation requires that all qualified students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe that you have a disability requiring accommodation, please contact the Disability Resource Center. Eligibility and documentation policies can be found at: <http://www.asu.edu/studentaffairs/studentlife/ed/drc>.

Privacy Rights---The federal Family Educational Rights and Privacy Act (also known as FERPA) affords students certain rights with respect to their education records. ASU policy precludes the instructor from communicating with second parties without certain requirements first being met. The entire policy can be found at: <http://students.asu.edu/policies/ferpa>.

Incomplete Grades— A course grade of “incomplete” will be given only in extreme situations. If necessary, please discuss this issue with the instructor. The Incomplete Grade Request form can be found at: <http://www.asu.registrar/forms/regforms.html>.

Syllabus—Students agree to accept and comply with these requirements by choosing to remain enrolled in this course. The instructor reserves the right to modify the contents of this syllabus. Any changes will be announced with written instructions on the course LearningStudio announcement page. Students are responsible for being aware of any such changes.

Course Schedule:

Though not anticipated, some minor changes may be made as we move through the semester. Please watch the Announcement Page of the course LearningStudio site for written notice of any changes.

Due to the shortened time frame (7 weeks) of Session B, all assignments will be available to you on the first day of class and I will post the quizzes as soon as possible so that you may move ahead through the course ahead of the deadlines.



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UNIT 1 THE PLACE OF SCIENCE AND TECHNOLOGY IN SOCIETY 1

Issue 1. Should the Public Have to Pay to See the Results of Federally Funded Research? 2

YES: **Ralph Oman**, from testimony regarding H.R. 6845, the Fair Copyright in Research Works Act, before the Subcommittee on Courts, the Internet, and Intellectual Property of the Committee on the Judiciary (September 11, 2008) 6

NO: **Heather Dalterio Joseph**, from testimony regarding H.R. 6845, the Fair Copyright in Research Works Act, before the Subcommittee on Courts, the Internet, and Intellectual Property of the Committee on the Judiciary (September 11, 2008) 11

Attorney and past Register of Copyrights Ralph Oman contends that "If the NIH [National Institutes of Health] succeeds in putting all of the NIH-related peer-reviewed articles on its online database for free within one year of publication, the private publishers will be hard-pressed to survive." Allowing private publishers to continue to profit by publishing the results of publically funded research is the best way to ensure public benefit. Heather Dalterio Joseph argues that permitting public access to NIH-funded research results does not threaten the viability of journal publishers. In addition, immediate online access to research results is invaluable to the public.

Issue 2. Should "Intelligent Design" Be Taught in Public Schools? 16

YES: **J. Scott Turner**, from "Signs of Design," *The Christian Century* (June 12, 2007) 20

NO: **National Academy of Sciences and Institute of Medicine of the National Academies**, from *Science, Evolution, and Creationism* (National Academies Press, 2008) 26

Professor J. Scott Turner argues that the real issue is whether the world is purposeful. Intelligent design can in fact be usefully taught, and doing so avoids intrusions on academic freedom. The National Academy of Sciences and Institute of Medicine of the National Academies argue that evolution is so firmly ensconced in the foundations of modern science that nonscientific alternatives to evolution such as creationism (including intelligent design) have no place in the public school science curriculum.

Issue 3. Should the Internet Be Neutral? 34

YES: Julius Genachowski, from "Preserving a Free and Open Internet: A Platform for Innovation, Opportunity, and Prosperity," speech at The Brookings Institution (September 21, 2009) 38

NO: Kyle McSlarrow, from "The Future of the Internet," Testimony before the Senate Committee on Commerce, Science, and Transportation Hearing (April 22, 2008) 46

FCC Chairman Julius Genachowski argues that we must preserve the openness and freedom of the Internet to ensure that the Internet continues to support innovation, opportunity, economic growth, and democracy in the twenty-first century. Kyle McSlarrow, president and chief executive officer of the National Cable & Telecommunications Association, argues that "net neutrality" mandates would interfere with the ability of broadband providers to improve Internet access and thus would ultimately undermine consumer choice and welfare.

UNIT 2 ENERGY AND THE ENVIRONMENT 55**Issue 4. Is It Time to Think Seriously About "Climate Engineering"? 56**

YES: Kevin Bullis, from "The Geoengineering Gambit," *Technology Review* (January/February 2010) 60

NO: James R. Fleming, from "The Climate Engineers," *The Wilson Quarterly* (Spring 2007) 67

Kevin Bullis, energy editor of *Technology Review*, reviews the latest thinking about "geoengineering" as a solution to the global warming problem, and concludes that despite potential side effects and the risk of unknown impacts on the environment, it may be time to consider technologies that can offset global warming. James R. Fleming, professor of science, technology, and society, argues that climate engineers fail to consider both the risks of unintended consequences to human life and political relationships and the ethics of the human relationship with nature.

Issue 5. Is It Time to Revive Nuclear Power? 78

YES: Allison MacFarlane, from "Nuclear Power: A Panacea for Future Energy Needs?" *Environment* (March/April 2010) 82

NO: Kristin Shrader-Frechette, from "Five Myths About Nuclear Energy," *America* (June 23–30, 2008) 89

Allison MacFarlane argues that although nuclear power poses serious problems to be overcome, it "offers a potential avenue to significantly mitigate carbon dioxide emissions while still providing baseload power required in today's world." However, it will take many years to build the necessary number of new nuclear power plants. Professor Kristin Shrader-Frechette argues that nuclear power is one of the most impractical and risky of energy sources. Renewable energy sources such as wind and solar are a sounder choice.

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Issue 6. Is America Ready for the Electric Car? 96

YES: Michael Horn, from "Roadmap to the Electric Car Economy,"
The Futurist (April 2010) 99

NO: Rick Newman, from "A Stuttering Start for Electric Cars," *U.S.
News & World Report* (April 2010) 105

Michael Horn argues that the technology already exists to replace gasoline-burning cars with electric cars and thereby save money, reduce dependence on foreign oil sources, and reduce pollution. All we need is organization and determination. Rick Newman argues that because electric car technology is still new, expensive, and unreliable, it will be at least a decade before consumers are willing to shift from gas burners to electric cars.

UNIT 3 HUMAN HEALTH AND WELFARE 111

**Issue 7. Do Falling Birth Rates Pose a Threat to Human
Welfare? 112**

YES: Michael Meyer, et al., from "Birth Dearth," *Newsweek*
(September 27, 2004) 116

NO: Julia Whitty, from "The Last Taboo," *Mother Jones* (May-June
2010) 122

Michael Meyer argues that when world population begins to decline after about 2050, economies will no longer continue to grow, government benefits will decline, young people will have to support an elderly population, and despite some environmental benefits, quality of life will suffer. Writer Julia Whitty argues that even though the topic of overpopulation has become unpopular, it is clear that we are already using the Earth's resources faster than they can be replenished, and the only answer is to slow and eventually reverse population growth.

**Issue 8. Is There Sufficient Scientific Evidence to
Conclude That Cell Phones Cause Cancer? 135**

YES: Olga V. Naidenko, from testimony before Senate Committee
on Appropriations, Subcommittee on Labor, Health and Human
Services, and Education, and Related Agencies, hearing on "The
Health Effects of Cell Phone Use" (September 14, 2009) 139

NO: Linda S. Erdreich, from testimony before Senate Committee
on Appropriations, Subcommittee on Labor, Health and Human
Services, and Education, and Related Agencies, hearing on "The
Health Effects of Cell Phone Use" (September 14, 2009) 144

Olga V. Naidenko argues that even though past research into the link between cell phones and cancer has produced ambiguous results, more recent research on people who have used cell phones for many years has produced more worrisome results. More research is needed, but concern is already amply justified, especially in connection with children's exposure to cell phone emissions of radio waves. Linda S. Erdreich argues that independent scientific organizations have reviewed the research to date on the supposed link between cell phones and cancer and concluded that current evidence does not demonstrate that wireless phones cause cancer or have other adverse health effects.

Issue 9. Should DDT Be Banned Worldwide? 149

YES: Anne Platt McGinn, from "Malaria, Mosquitoes, and DDT,"
World Watch (May/June 2002) 153

NO: Donald R. Roberts, from "The Role of Science in
Environmental Policy-Making," Statement before U.S.
Senate Committee on Environment & Public Works
(September 28, 2005) 161

Anne Platt McGinn, a senior researcher at the Worldwatch Institute, argues that although DDT is still used to fight malaria, there are other more effective and less environmentally harmful methods. She maintains that DDT should be banned or reserved for emergency use. Donald R. Roberts argues that the scientific evidence regarding the environmental hazards of DDT has been seriously misrepresented by antipesticide activists. The hazards of malaria are much greater and, properly used, DDT can prevent them and save lives.

Issue 10. Can Infectious Animal Diseases Be Studied Safely in Kansas? 171

YES: Bruce Knight, from "Statement on the National Bio- and
Agro-Defense Facility," before the Subcommittee on Oversight
and Investigation, House Energy and Commerce Committee
(May 22, 2008) 174

NO: Ray L. Wulf, from "Written Testimony," submitted for the
Record to the Subcommittee on Oversight and Investigation,
House Energy and Commerce Committee (May 22, 2008) 182

Bruce Knight argues that although the U.S. Department of Agriculture's research facility at Plum Island, New York, has served well since it was built over half a century ago, modern technology is capable of ensuring safety at a mainland facility, which would also be cheaper to operate, more easily accessible, and more responsive to potential disease threats. Ray L. Wulf argues that an island location is much more effective at containing infectious diseases such as foot-and-mouth disease. A mainland research facility would permit unhampered spread of such diseases throughout the continental United States, with devastating consequences for the agricultural economy. Modern technology is not adequate to ensure safety, and federal, state, and local authorities are not prepared to deal with an outbreak.

Issue 11. Are Genetically Modified Foods Safe to Eat? 190

YES: Henry I. Miller and Gregory Conko, from "Scary Food,"
Policy Review (June/July 2006) 194

NO: Jeffrey M. Smith, from "Not in My Fridge!" *Ecologist*
(November 2007) 202

Henry I. Miller and Gregory Conko of the Hoover Institution argue that genetically modified (GM) crops are safer for the consumer and better for the environment than non-GM crops. Jeffrey M. Smith, director of the Institute for Responsible Technology and the Campaign for Healthier Eating in America, argues that GM foods are dangerous to health and should be removed from the marketplace.

UNIT 4 SPACE 211

Issue 12. Are We Doing Enough to Protect the Earth from Asteroid and Comet Impacts? 212

YES: J. Anthony Tyson, from "Near-Earth Objects (NEOs)—Status of the Survey Program and Review of NASA's Report to Congress," Testimony before the House Committee on Science and Technology, Subcommittee on Space and Aeronautics (November 8, 2007) 216

NO: Russell L. Schweickart, from *Asteroid Threats: A Call for Global Response* (Association of Space Explorers International Panel on Asteroid Threat Mitigation, September 25, 2008) 222

Physics professor J. Anthony Tyson argues that NASA can fulfill its congressionally mandated mission of surveying near-Earth objects (NEOs) that may pose future hazards to Earth by funding the proposed Large Synoptic Survey Telescope (LSST) project. Russell L. Schweickart, chair of the Association of Space Explorers International Panel on Asteroid Threat Mitigation, argues that to deal with the potential threat of asteroid and comet impacts, the United Nations must oversee an international effort not only to catalog potential threats but also to decide when and how to ward off potential impacts.

Issue 13. Will the Search for Extraterrestrial Life Ever Succeed? 231

YES: Seth Shostak, from "When Will We Detect the Extraterrestrials?" *Acta Astronautica* (August 2004) 235

NO: Peter Schenkel, from "SETI Requires a Skeptical Reappraisal," *Skeptical Inquirer* (May/June 2006) 242

Radio astronomer and SETI (search for extraterrestrial intelligence) researcher Seth Shostak argues that if the assumptions behind the SETI are well grounded, signals of extraterrestrial origin will be detected soon, perhaps within the next generation. Peter Schenkel argues that SETI's lack of success to date, coupled with the apparent uniqueness of Earth, suggests that intelligent life is probably rare in our galaxy and that the enthusiastic optimism of SETI proponents should be reined in.

Issue 14. Do Humans Belong in Space? 250

YES: Jeff Foust, from "The Future of Human Spaceflight: Are Astronauts Close to Extinction?" *Technology Review* (January/February 2010) 254

NO: Neil deGrasse Tyson, from "Delusions of Space Enthusiasts," *Natural History* (November 2006) 257

Jeff Foust, editor and publisher of *The Space Review*, argues that the ultimate goal of manned space exploration is to "chart a path for human expansion into the solar system." To support that goal will require extending the life of the International Space Station (ISS), providing more funding for mission development and encouraging the private sector to take over transportation to and from the ISS. At present, human spaceflight is not sustainable. Astronomer Neil deGrasse Tyson argues that large, expensive projects such as space exploration are driven only by war, greed, and the

celebration of power. The dream of colonizing space became a delusion as soon as we beat the Russians to the moon, and it remains so.

UNIT 5 THE COMPUTER REVOLUTION 265

Issue 15. Can Machines Be Conscious? 266

YES: Christof Koch and Giulio Tononi, from "Can Machines Be Conscious?" *IEEE Spectrum* (June 2008) 270

NO: John Horgan, from "The Consciousness Conundrum," *IEEE Spectrum* (June 2008) 278

Christof Koch and Giulio Tononi argue that because consciousness is a natural phenomenon, it will eventually be artificially created. To test for such consciousness, however, will require something other than the classic Turing test. John Horgan argues that no one has the foggiest idea of what consciousness really is, and it seems highly unlikely that we will ever be able to create an artificial consciousness. "Engineers and scientists should be helping us face the world's problems and find solutions to them, rather than indulging in escapist, pseudoscientific fantasies like the singularity."

Issue 16. Do Government Internet Surveillance Efforts Threaten Privacy and Civil Rights? 287

YES: James A. Lewis, from "Cybersecurity: Next Steps to Protect Critical Infrastructure," testimony before Senate Committee on Commerce, Science, and Transportation hearing (February 23, 2010) 291

NO: Amitai Etzioni, from "Are New Technologies the Enemy of Privacy?" *Knowledge Technology & Policy* (Summer 2007) 297

James A. Lewis of the Center for Strategic and International Studies argues that proposed legislation, The Cybersecurity Act of 2009, which calls for Internet surveillance without regard to other legal restrictions, is needed "to bring law to the Wild West" of the Internet and enhance Internet security. Amitai Etzioni argues that new technologies such as those that enable Internet monitoring pose new threats, in particular to privacy. If there must be government surveillance programs, there must also be mechanisms for oversight and accountability. However, the mechanisms of accountability must not lie solely in the hands of government.

Issue 17. Does Endorsing Open Source Software Fail to Respect Intellectual Property? 304

YES: International Intellectual Property Alliance (IIPA), from *Indonesia: 2010 Special 301 Report on Copyright Protection and Enforcement* (February 12, 2010) 308

NO: Michael Tiemann, from "The OSI Categorically Rejects IIPA's Special Pleadings Against Open Source," *Open Source Initiative* (May 3, 2010) 316

The International Intellectual Property Alliance (IIPA) argues that Indonesia should be put on the United States Trade Representative's "Special 301" watchlist because, in part, Indonesia's attempt to promote open source solutions "encourages a mindset that does not give due

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consideration to the value of intellectual creations." Michael Tiemann of Open Source Initiative objects strenuously, arguing that open source software is just as much an intellectual creation as proprietary software, it depends just as much on copyright protections, and because open source preferences have been promoted in several states, as well as portions of the federal government, the IIPA's position amounts to an attack on the United States itself.

UNIT 6 ETHICS 325

Issue 18. Is "Animal Rights" Just Another Excuse for Terrorism? 326

YES: John J. Miller, from "In the Name of the Animals: America Faces a New Kind of Terrorism," *National Review* (July 3, 2006) 330

NO: Steven Best, from "Dispatches from a Police State: Animal Rights in the Crosshairs of State Repression," *International Journal of Inclusive Democracy* (January 2007) 335

Journalist John Miller argues that animal rights extremists have adopted terrorist tactics in their effort to stop the use of animals in scientific research. Because of the benefits of such research, if the terrorists win, everyone loses. Professor Steven Best argues that the new Animal Enterprise Protection Act is excessively broad and vague, imposes disproportionate penalties, endangers free speech, and detracts from prosecution of real terrorism. The animal liberation movement, on the other hand, is both a necessary effort to emancipate animals from human exploitation, and part of a larger resistance movement opposed to exploitation and hierarchies of any and all kinds.

Issue 19. Should We Reject the "Transhumanist" Goal of the Genetically, Electronically, and Mechanically Enhanced Human Being? 346

YES: M. J. McNamee and S. D. Edwards, from "Transhumanism, Medical Technology, and Slippery Slopes," *Journal of Medical Ethics* (September 2006) 350

NO: Maxwell J. Mehlman, from "Biomedical Enhancements: Entering a New Era," *Issues in Science and Technology* (Spring 2009) 362

M. J. McNamee and S. D. Edwards argue that the difficulty of showing that the human body *should* (rather than *can*) be enhanced in ways espoused by the transhumanists amounts to an objection to transhumanism. Maxwell J. Mehlman argues that the era of routine biomedical enhancements is coming. Since the technology cannot be banned, it must be regulated and even subsidized to ensure that it does not create an unfair society.

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