

# Educational Simulation for Information Ethics

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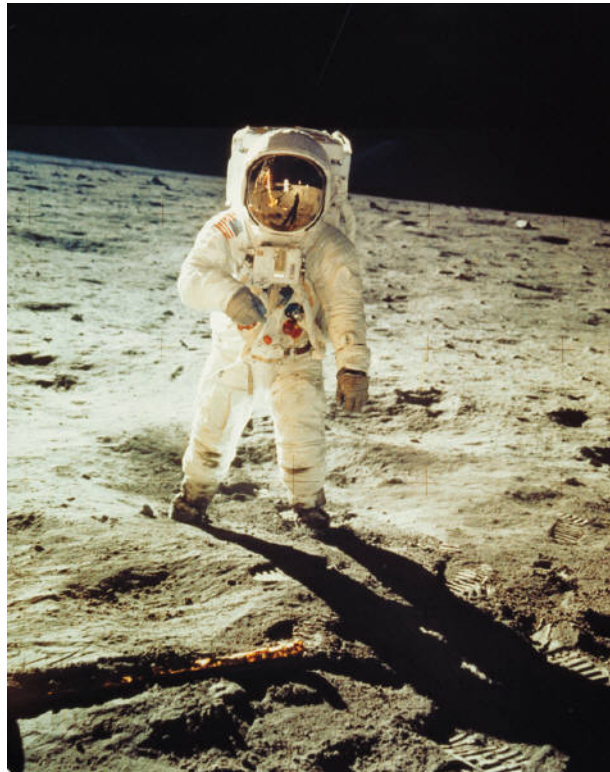
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COLLEGE OF  
INFORMATION  
STUDIES



# Example Case



**Trip to Mars**

# Example Case



**NASA Division  
Director**

**Implement emergency systems as decision support systems (respect for the individual)**

**Implement emergency systems as expert systems (emphasis on planning)**



**NASA Program  
Manager**

**Implement the decision support system to focus on data (information completeness)**

**Implement the decision support system to focus on process (decision-making guidance)**

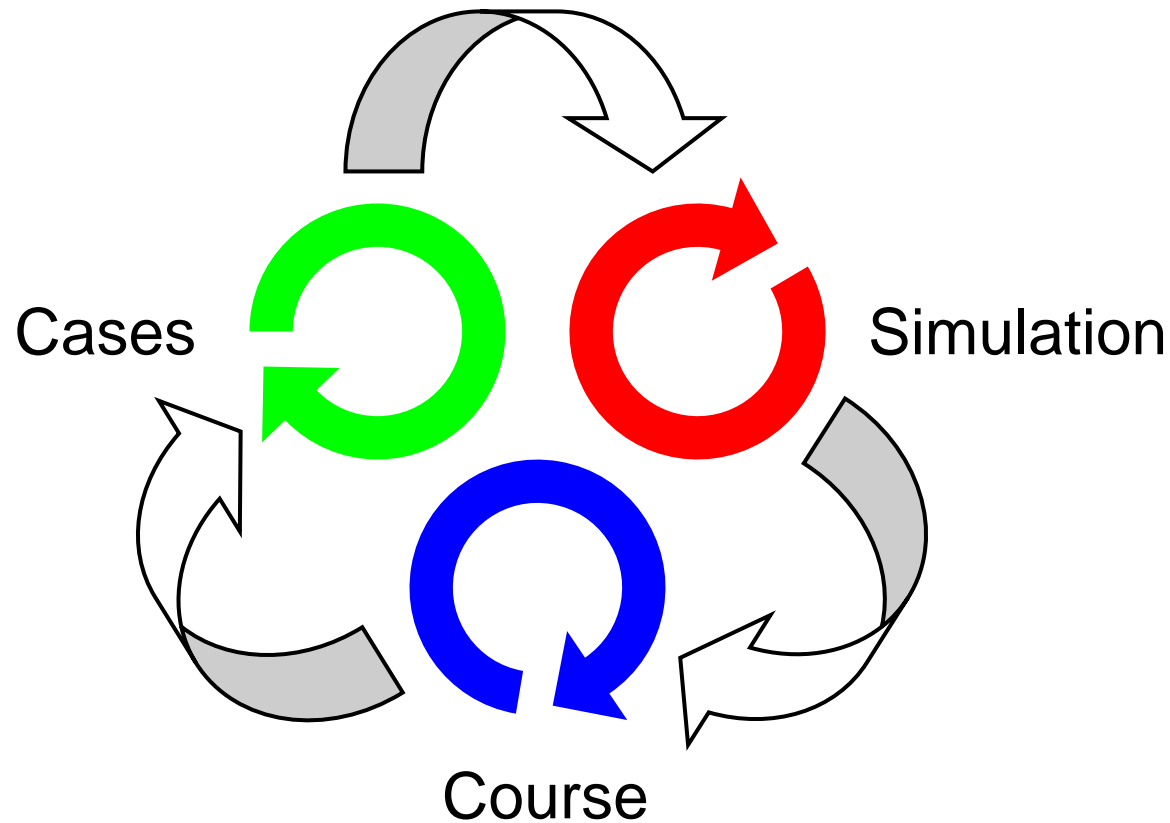


**NASA Astronaut**

**Do the safer repairs that improve chances of reaching Mars (benefit to humanity)**

**Do the riskier repairs that improve chances of getting home (caring for loved ones)**

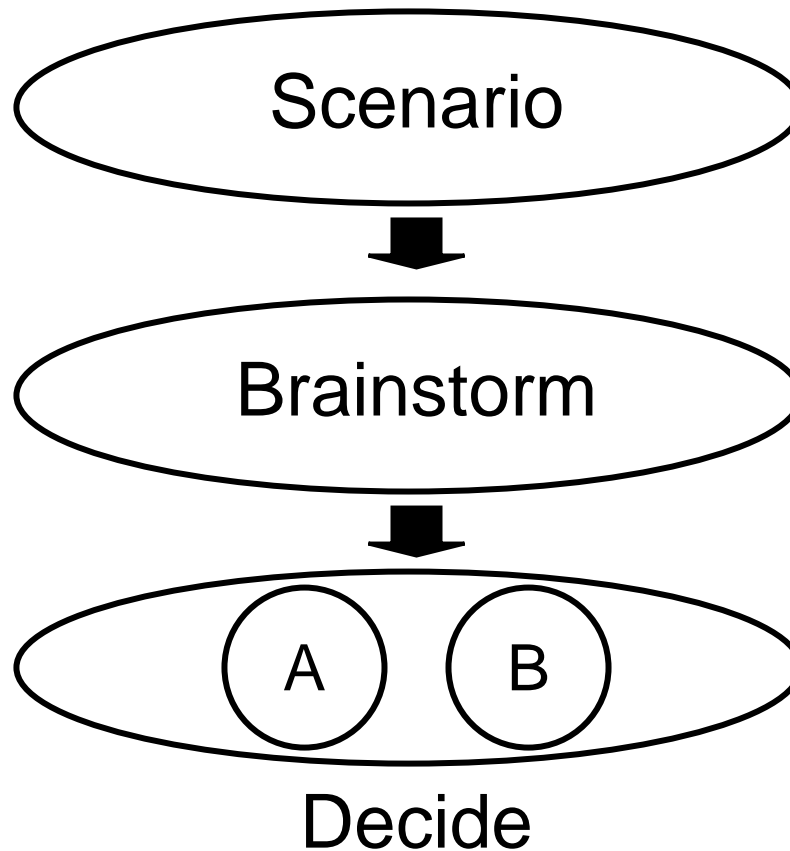
# Research and Development Process

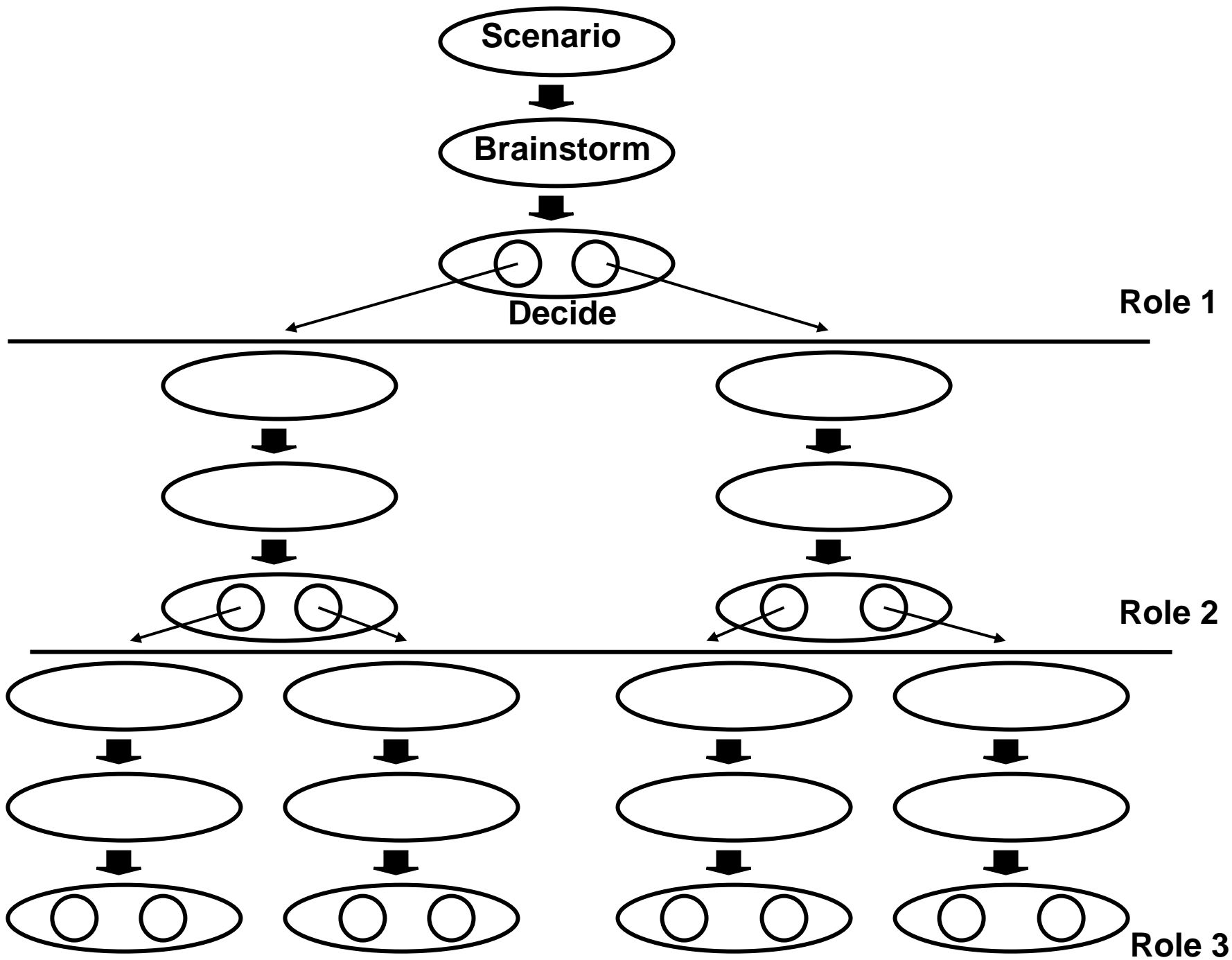


# Traditional Cases vs. Our Cases

	<b>Traditional Cases</b>	<b>Our Cases</b>
<b>Why</b>	<b>Prescriptive Practice making decisions Unstructured Standalone</b>	<b>Descriptive Learn decision-making Structured Embedded</b>
<b>When</b>	<b>From past</b>	<b>For future</b>
<b>Who</b>	<b>1 viewpoint</b>	<b>N viewpoints</b>
<b>What</b>	<b>Written case</b>	<b>Interactive simulation</b>
<b>How</b>	<b>Read 1 Cycle</b>	<b>Do N cycles</b>
<b>Where</b>	<b>Classroom</b>	<b>Anywhere</b>

# Process of Completing Cases





# The Simulation

- Interactive – students work together to solve dilemmas presented as multi-role cases
- Adaptable – students can use the simulation in either face-to-face or online classes
- User-centered – development and evaluation of the simulation involves students
- Open-source – code of simulation and simulation itself will be freely distributed



[Start New Case](#)[Instructions](#)[Log Out](#)

4

Mission to Mars

Sally

Cindy

Chuck

Keisha

3

Copying Textbooks

Dwayne

Joe

&lt;join&gt;

4

Laptops for Africa

Aditya

Jose

&lt;join&gt;

&lt;join&gt;

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[Chat](#)

Joe: Hello everyone

Sally: Anybody want to try a case about a mission to Mars?

3

Library Monitoring: A new law that requires libraries to monitor Web use

3

Copying Textbooks: A teacher must choose how to digitize materials

3

Copyright Infringement: A design consultant notices copyright infringement

4

Offshoring: A corporation moves its factories abroad

4

Online Voting: Design a value sensitive online voting system

4

Laptops for Africa: Create a program to send laptops to developing nations

Create New Case

Cancel

Chat

Joe: Hello everyone

Sally: Anybody want to try a case about a mission to Mars?

<enter text here to chat>

[GO!](#)[Instructions](#)[Log Out](#)

4

Mission to Mars

Sally

Cindy

Chuck

Keisha

3

Copying Textbooks

Dwayne

Joe

&lt;join&gt;

4

Laptops for Africa

Aditya

Jose

&lt;join&gt;

&lt;join&gt;

3

Library Monitoring

Al

&lt;join&gt;

&lt;join&gt;

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[Chat](#)

Joe: Hello everyone

Sally: Anybody want to try a case about a mission to Mars?

&lt;enter text here to chat&gt;

## Choose the Roles

1

Representative

2

Library Director

3

Librarian

Start the Case

Chat

<enter text here to chat>

## Library Monitoring, Scenario 1: Representative (AI)

The US House is about to vote on a new bill that focuses on increasing funding for information technology in libraries. As one of the conditions for this bill, receiving this additional funding would require libraries to monitor the use of Internet by minors. Libraries that would request funding through this bill would be able to use the funding to provide additional information technology equipment and training, which would be especially beneficial for library patrons who rely on their local public library for free Internet access. In particular, it could be used to purchase special equipment and provide additional educational opportunities for older patrons and patrons with special needs. As a condition of this bill, they would be required to install monitoring software that would allow librarians to monitor in real-time the websites visited by any minors using library computers from their own computer terminal. Librarians in libraries that receive federal funding would be required to monitor the sites that minors visit, and to provide warnings

Get the Decision

Chat

<enter text here to chat>

## Library Monitoring, Decision 1: Representative (AI)

1

Vote for the bill

2

Vote against the bill

Make the Decision

Chat

<enter text here to chat>

# The Course

- Information Ethics – new course developed & taught in the College of Information Studies (Maryland's iSchool) in fall '07 and spring '08
- Included students from Master of Information Management, Master of Library Science, and Ph.D. in Information Studies programs
- Cases were developed, evaluated, & refined as part of both semesters of this course

# Findings to Date

- Our multiple-role, multiple-decision cases are an effective way to teach information ethics
- Students enjoy the role-playing aspect and have long and constructive discussions
- These cases help students to gain a greater appreciation for their own and others' values
- Students are excited about the idea of learning through an educational simulation



# Future Steps

- The cases – continue to develop and refine cases, including cases with 2, 4, or 5 users
- The simulation – incrementally and iteratively code, evaluate, and refine the simulation, which will be tested for the first time in Information Ethics in the spring of '09
- The course – teach the course in additional institutions and programs (including CS)

# Take-Home Messages

- Computer and information science students need novel and interactive opportunities to learn about computing and information ethics
- An interactive educational simulation can provide such an opportunity
- The cases for such a simulation should be forward-looking and iterated and refined with multiple classes of students

# Thank You!!! Any Questions?

Related research:

- Fleischmann, K.R. & Wallace, W.A. 2005. "A Covenant with Transparency: Opening the Black Box of Models." *Communications of the ACM* 48(5): 93-97
- Fleischmann, K.R. & Wallace, W.A. In Press. "Ensuring Transparency in Computational Modeling: How and Why Modelers Make Models Transparent." *Communications of the ACM*.
- Robbins, R.W., Fleischmann, K.R., & Wallace, W.A. In Press. "Computing and Information Ethics Education Research." In *Handbook of Research on Technoethics*. The Idea Group.
- Robbins, R.W., Fleischmann, K.R., & Wallace, W.A. Under Review. "A Systematic Approach For Designing and Evaluating IS Educational Cases about Ethics"
- Fleischmann, K.R., Robbins, R.W., & Wallace, W.A. In Preparation. "Educational Cases with Multiple Interacting Roles: An Approach to Addressing Intercultural Information Ethics"