Protecting Our World, Conquering New Frontiers

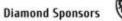
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**PhD. Rosario Casanova** Chair Academic Network UN–GGIM: America casanova@fing.edu.uy











28 May - 1 June 2023 Orlando Florida USA

**Protecting Our World, Conquering New Frontiers** 

## What is data ethics?

The Open Data Institute defines data ethics as:

## "

'A branch of ethics that evaluates data practices with the potential to adversely impact on people and society – in data collection, sharing and use'

## "

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Data ethics relates to good practice around how data is collected, used and shared. It is especially relevant when data activities have the potential to impact people and society, directly or indirectly.

For example, an automated data model might make decisions about whether someone is eligible for a mortgage, or what insurance they can be offered. And decisions about what data to collect – and what to exclude – might affect groups in a society.

Data ethics should be addressed at all stages:

- · Stewarding data collecting it, maintaining it and sharing it
- Creating information from that data in the form of products and services, analysis and insights, or stories and visualisations
- Deciding what to do informed by information from multiple sources along with experience and understanding

Ethics is about how we ought to live together. The creation of and access to [geographical data] means we live together differently today than we did before. That's potentially a very good thing, but for it to be good, we must do the hard work of deciding who we are in relation to our data.

Michael Rozier, S.J., Ph.D.







Protecting Our World, Conquering New Frontiers

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<b>Ж ВЕНСНМАВК</b>	Mad Date free Sig Dried
Raising standards for location integrity	
Exploring the offics behind the responsible use of location data.	
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## La Iniciativa EthicalGeo

La iniciativa EthicalGEO de la American Gengraphical Society, originalmente apoyada par Omidyar Network, busca activar a pensadores, innovadores, emprendedores, legisladores. profesionales, estudiantes y ciudadanas comunes y llevarlos a un dialogo global que arroje luz sobre sus mejares ideas sobre los desafias éticos y las opartunidades que plantean las numerosas tecnologios geoespaciales y fuentes de datos que están remodelando nuestra sociedad.





The Locus Letter proposes that a broader, shared understanding of the risks and remedies related to the uses of location data can improve standards of practice and help protect people and the public interest.





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Activities	Document Type
<ul> <li>Locus Charter (Benchmark Initiative &amp; EthicalGEO)</li> </ul>	Global Strategic Principles
<ul> <li>ODI Data Ethics Canvas</li> <li>GEO - Data Working Group Ethics Best Practices Geonovum - Ethical Framework</li> <li>OGC - GeoEthics adhoc</li> </ul>	Frameworks / Best Practices
<ul> <li>W3C SDWWG - Responsible Use Guide</li> <li>Godan - Code of Ethics Toolkit</li> <li>SDSN TReNDS - Data Collaboration Contracts</li> <li>Omidyar Network - Ethics Explorer</li> <li>DevGRG - Ethical Research Guidelines for Development</li> </ul>	Guides / Guidelines / Templates
<ul> <li>URISA / GISCI (EE. UU.)</li> <li>SEIC (Australia and New Zealand)</li> <li>RICS (United Kingdom)</li> <li>ASPRS (US)</li> </ul>	Codes of ethics Denise McKenzie. 2021.
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Organized By

### A GIS Code of Ethics

#### Approved by the URISA Board of Directors

#### April 9, 2003

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ethical paradig

This Code of Strict is intended to provide guidelines for CIS (geographic information subtent) professionals. It should help professionals make appropriate and ethical chaices, it should provide a basis for evaluating their mock front an ethical point of new. By heeding this code, GS professionals will help to preserve and entrance public must in the discipline.

mently as treated to a object person them, it employers, a for these guidels. The text of this many codes of a professionals, b	the attial precise of shows treating others with respect and new     n and Le., advantable: In requires us to consider the impact of our actions     View persons who exemplify morality as your own guide (Virtue Ethics)     Attempt to maximize the happiness of everyone affected (Utilitarianism)     Only follow maxims of conduct that everyone else could adopt (Kantianism)     Always treat other persons as ends, never merely as means (Deontology)
quildlines that a fitniings widely a retention and se to stanias conce	I. Obligations to Society
database makin profession. A pootive tune t to ethical behan acts to be avails there is implicit postive actions, understanding o	The GIS professional recognizes the impact of his or her work on society as a whole, or subgroups of society including geographic or demographic minorities, on future gener and inclusive of social, economic, environmental, or technical fields of endeavor. Oblig society shall be paramount when there is conflict with other obligations. Therefore, the professional will:
This code is not decisional ladions	1. Do the Best Work Possible

- · Be objective, use due care, and make full use of education and skills.
- · Practice integrity and not be unduly swayed by the demands of others
- Provide full, clear, and accurate information.
- Be aware of consequences, good and bad.
- Strive to do what is right, not just what is legal.

#### 2. Contribute to the Community to the Extent Possible, Feasible, and Advisab

- Make data and findings widely available.
- · Strive for broad citizen involvement in problem definition, data identif analysis, and decision-making.
- Donate services to the community.

#### 3. Speak Out About Issues

- Call attention to emerging public issues and identify appropriate resp based on personal expertise.
- Call attention to the unprofessional work of others. First take concern persons; if satisfaction is not gained and the problems warrant, then people and organizations should be notified.
- Admit when a mistake has been made and make corrections where pd

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#### II. Obligations to Employers and Funders

nired to deliver needed products and services. The employer (or funder) expects guality work and professional conduct. Therefore the GIS professional will:

#### 1. Deliver Quality Work

- · Be qualified for the tasks accepted.
- Keep current in the field through readings and professional development.
- Identify risks and the potential means to reduce them.
- · Define alternative strategies to reach employer/funder goals, if possible, and the implications of each
- Document work so that others can use it. This includes metadata and program documentation.

#### 2. Have a Professional Relationship

- Hold information confidential unless authorized to release it.
- · Avoid all conflicts of interest with clients and employers if possible, but when they are unavoidable, disclose that conflict.
- · Avoid soliciting, accepting, or offering any gratuity or inappropriate benefit connected to a potential or existing business or working relationship.
- · Accept work reviews as a means to improve performance.
- Honor contracts and assigned responsibilities.
- · Accept decisions of employers and clients, unless they are illegal or unethical.
- Help develop security, backup, retention, recovery, and disposal rules.
- Acknowledge and accept rules about the personal use of employer resources. This includes computers, data, telecommunication equipment, and other resources
- Strive to resolve differences.

#### 3. Be Honest in Representations

- State professional qualifications truthfully.
- · Make honest proposals that allow the work to be completed for the resources requested.
- · Deliver an hour's work for an hour's pay.
- Describe products and services fully.
- Be forthcoming about any limitations of data, software, assumptions, models, methods, and analysis,

Will Craig, de la Universidad de Minnesota

https://www.urisa.org/clientuploads/directory/Documents/CodeofEthics.pdf

#### III. Obligations to Colleagues and the Profession

The GIS professional recognizes the value of being part of a community of other professionals. Together, we support each other and add to the stature of the field. Therefore, the GIS professional will:

#### 1. Respect the Work of Others.

- · Cite the work of others whenever possible and appropriate.
- · Honor the intellectual property rights of others. This includes their rights in software and data.
- Accept and provide fair critical comments on professional work.
- · Recognize the limitations of one's own knowledge and skills and recognize and use the skills of other professionals as needed. This includes both those in other disciplines and GIS professionals with deeper skills in critical sub-areas of the field.
- Work respectfully and capably with others in GIS and other disciplines.
- · Respect existing working relationships between others, including employer/employee and contractor/client relationships.
- Deal honestly and fairly with prospective employees, contractors, and vendors.

#### 2. Contribute to the Discipline to the Extent Possible

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· Publish results so others can learn about them.

#### IV. Obligations to Individuals in Society

The CIS professional recognizes the impact of his or her work on individual people and will strive to avoid harm to them. Therefore, the GIS professional will:

#### 1. Respect Privacy

- Protect individual privacy, especially about sensitive information.
- · Be especially careful with new information discovered about an individual through GIS-based manipulations (such as geocoding) or the combination of two or more databases.

#### 2. Respect individuals

- · Encourage individual autonomy. For example, allow individuals to withhold consent from being added to a database, correct information about themselves in a database, and remove themselves from a database.
- Avoid undue intrusions into the lives of individuals.
- Be truthful when disclosing information about an individual.

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 Treat all individuals equally, without regard to race, gender, or other personal characteristic not related to the task at hand.

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## Americas: national members and academia

**Surveys:** ethical use of **Existence of Existence** of geospatial data **National regulation** Education (2021 - 2022)9 questions – 16 responses- national members 8 questions – 90 responses **Existence of** 8 questions – **Europe: academia** 40 responses Education Organized Bu **Diamond Sponsors** 



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Survey regarding education in the ethical use of geospatial data

ACADEMIC NETWORK	
Encuesta sobre enseñanza en ética en el uso de datos geoespaciales en su institución	
Esta encuesta es un primer relevamiento acerca de la enseñanza del uso ético de los datos geográficos en instituciones académicas en América. Si deseas unirte a nuestra Red puedes hacerlo ingresando a: <u>http://unggimecademicretworkamericas.org/</u> * Reguired	
Nombre de la Institución académica a la que pertenece:	

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Nombre y mail de persona de contacto:

Your answer

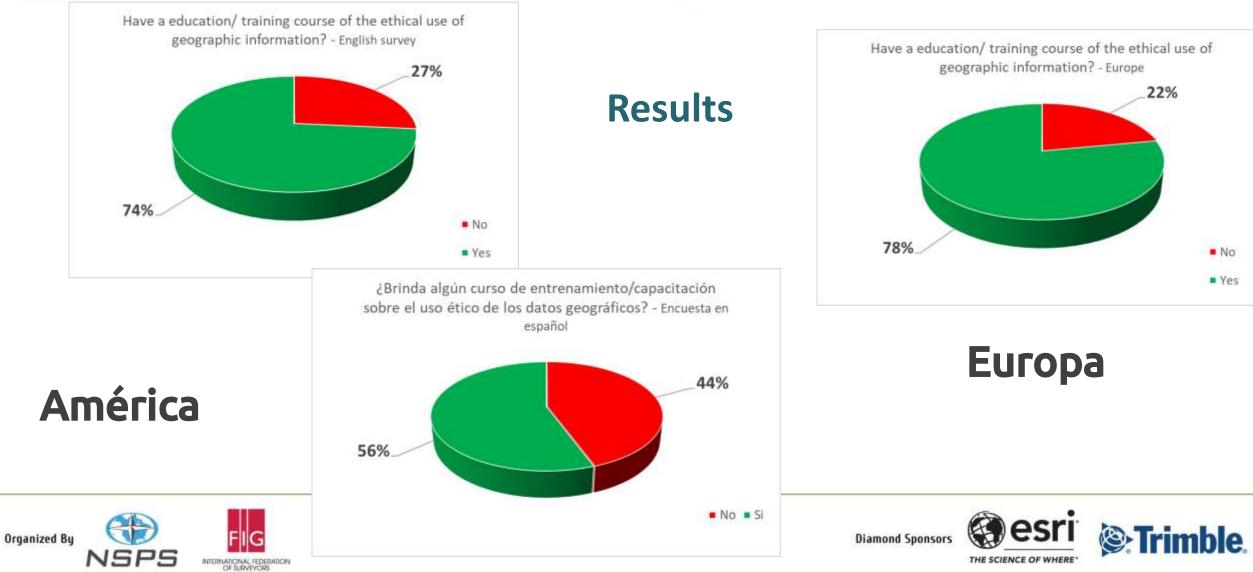
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Survey on teaching ethics whe	승규가 많은 모양에서 집에 가지 않는 것을 수 있다.
with geospatial data in your ins	stitution
This survey is a first approach in teaching the ethical use of geograp institutions in the Americas. If you want to be a member of our Network visit: <u>https://www.ungoin</u>	
*Obligatorio	
Name of your academic institution:	
Tu respuesta	
Name and email of the contact person:	







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Survey

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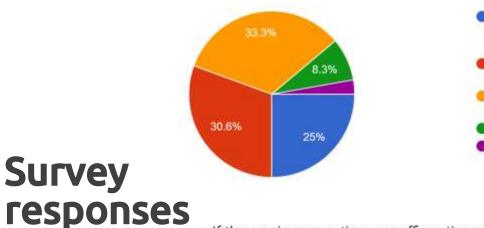
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## **America's Survey**

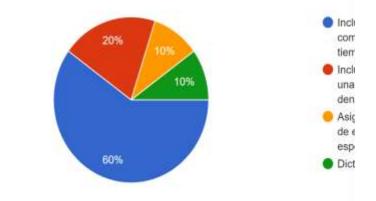
If the previous question was affirmative, which type of training do you provide? 36 responses



I Include the topic in brief general comments but do not allocate a specific time or embed in another topic or less... I Include the topic as an activity, lesson or discussion embedded within anothe .... I allocate specific time and space in the syllabus to specifically address Ethics. I teach an entire course on ethics. Ethics is an activity, lesson or discussion

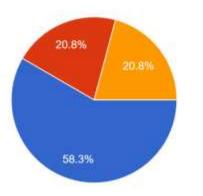
embedded within another topic or less...

Si la respuesta anterior es afirmativa, qué tipo de formación brinda? 20 responses



If the previous question was affirmative, which type of training do you provide?

24 responses



I Include the topic in brief general comments but do not allocate a specific time or embed in another topic or less... I Include the topic as an activity, lesson or discussion embedded within another topic or lesson in the course.

- I allocate specific time and space in the syllabus to specifically address Ethics.
- I teach an entire course on ethics.
- Other type

**Europe's Survey** 







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## Including in the future...

Are you considering including a discussion of ethics in your course in the future? 50 responses

Está considerando incluir la discusión de la ética en cursos futuros? 38 responses

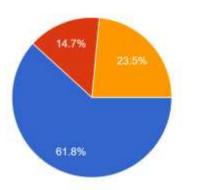


Yes

No.

Partially

Are you considering including a discussion of ethics in your course in the future? 34 responses









## Protecting Our World, Conquering New Frontiers

Actualmente no se toca este tema pero nos interesa mucho aprender mas al respecto

Parabéns pela iniciativa, tópico muito importante.

Data ethics will become a larger component in my Geospatial courses

Please define what should be considered as ethical use of geographic data.

I often touch on data aggregation and anonymizing data, but I think I need to be more explicit in discussing issues of ethics with GIS and spatial analysis.

I suggest adding at least 1-2 lessons in every course outline about ethics, integrity, diversity, complexity, the inclusion of data, sharing data, and use of data. This should be given to not only university students but also to primary to high school students. I also suggest arranging short training courses in this regards for practitioners, engineers etc.

Some comments made Muchas veces encontramos mapas que cuentan historias distintas a la realidad, a veces hechos de manera no intencionada pero a veces hechas con dolo para modificar la percepción del lector.

There is a gap in geospatial teaching materials

and thus an opportunity to create. in this area,

across the interdisciplinary geospatial

communities.

The topic of ethics is very important. I see a clear relationship of geospatial science with SDGs, cooperation and humanitarian aid.

No conocía este aspecto acerca de los datos. Por un lado, es un tema interesante pero las clases están ya saturadas con conceptos

As well as mentioning ethics and data protection on the spatial databases course, we also provide a 2-hour introduction to ethics for all undergraduate and MSc students in our department. This includes general ethics ensuring that people are aware of what they are consenting to - and some focus on GDPR and in particular how location privacy is important and location is considered personal data, as well as how people can be identified not only directly but indirectly through their answers. We also include (on one of our programming modules) the importance of HTTPS for security of location information.

I consider it would be fundamental to include this topic at all levels of teaching. I would like to include it in already existing activities. I would very much appreciate having the training myself in order to expand my knowledge and filter the topics of importance for my students

Need more information regarding standards or common agreed ethical use of geographic data. If it already exists, unfortunately, I do not know where I can access it.

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## **Experiences:**



Search

News

Search

Journalist furthers career through World

First student graduates from spatial data

Online master's program meets need for

Online geospatial education faculty member

Penn State's renewable energy, sustainabilit

Retired Army veteran's World Campus

degree leads to eareer with LinkedIn

Bacastow appointed to US Geospatial

Inaugural 'Speed Dating with Learning.

Intelligence Foundation board of directors

sustainability in professional spaces

Campus weather program

science master's program

receives mentoring award

#### GISEthics.org | Case Studies

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Students develop ethical awareness and moral reasoning skills through methodical analysis and discussion of case studies. The main contribution of the GIS Professional Ethics Project is the following collection of case studies that pose a range of ethical challenges faced by geospatial professionals. Related educator resources are available on request for most cases.

To learn more about the case method, including a "Seven Step Guide for Ethical Decision Making," see Davis, Michael (1999) The Case Method. Ethics and the University. New York: Routledge. For an example of ethical decision making using the "Mapping Muslim Neighbors" case, see DiBiase, David, Chris Goranson, Francis Harvey and Dawn Wright (2000). The GIS Professional Ethics Project: Practical Ethics Education for GIS Proceedings of the 24th International Cartography Conference. Santiago, Chile, 15-21 November. Also in Unwin, D., K. Foote, N. Tate and D. DiBiase, Eds. (2011). Teaching Geographic Information Science and Technology in Higher Education. London: Wiley and Sons.

For more information about GIS ethics, see DiBiase, D. (2017). Professional and Practical Ethics of GIS&T. The Geographic Information Science & Technology Body of Knowledge (2nd Quarter 2017 Edition), John P. Wilson (ed.). doi: 10.022224/gistbok/2017.2.2

This material is based upon work summarized by the National Science Foundation under Grant Nos. 0724888

## The Pennsylvania State University.

Step 1. State problem. For example, "there's something about this decision that makes me uncomfortable" or "do I have a conflict of interest?"

Step 2. Check facts. Many problems disappear upon closer examination of situation, while others change radically.

Step 3: Identify relevant factors. For example, persons involved, laws, professional code, other practical constraints.

Step 4: Develop list of options. Be imaginative, try to avoid "dilemma"; not "yes" or "no" but whom to go to, what to say.

Step 5: Test options. Use such tests as the following: Harm test: does this option do less harm than alternatives? Publicity test: would I want my choice of this option published in the newspaper? Defensibility test: could I defend choice of option before Congressional committee or committee of peers? Reversibility test: would I still think choice of this option good if I were adversely affected by it? Colleague test: what do my colleagues say when I describe my problem and suggest this option as my solution? Professional test: what might my profession's governing body or ethics committee say about this option? Organization test: what does the company's ethics officer or legal counsel say about this?

## Step 6: Make a choice based on steps 1-5.

Step 7: Review steps 1-6. What could you do to make it less likely that you would have to make such a decision again? Are there any precautions can you take as individual (announce your policy on question, change job, etc.)? Is there any way to have more support next time? Is there any way to change the organization (for example, suggest policy change at next departmental meeting)?

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Michael Davis, 1999.

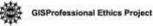






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mapping muslim neighbors case.pdf	A police department's plan to map potential terrorist enclaves brings charges of racial profiling
caribou routes case.pdf	A GIS analyst is asked to exclude pertinent data from maps prepared for a public hearing.
mobile phone tracking case.pdf	Researchers track mobile phone users' movements to derive predictive models of human mobility. Updated 4 December 2019
software_emergency_case.pdf	Too few software licenses are available in the aftermath of a tsunami.
<u>e911_conflict_case.pdf</u>	A municipal GIS manager troubled by what appears to be a conflict of interest considers filing a formal ethics complaint.
collateral damage case.pdf	A geospatial intelligence analyst predicts the civilian casualties in likely to be caused by a pre- emptive missile attack.
satellite_contract_case.pdf	A sales representative is expected to withhold information that could affect availability of a data product.
fire_mapping_case.pdf	A member of the press asks a government employee to leak the results of a GIS analysis about a controversial wild land fire.
llrw siting map case.pdf	Map masks potentially suitable sites for low-level radioactive waste storage facility.
submarine_crash_case.pdf	A nuclear submarine's crash into an uncharted seamount raises ethical issues for Navy training personnel.
data_access_case.pdf	A governmental agency's need to recoup user fees conflicts with a public records law.
alpha_software_case.pdf	Entrepreneurial GIS programmer is tempted to use a friend's code to win a lucrative contract.
bear baiting case.pdf	Should locations of controversial hunting stations be mapped?
environmental_justice_case.pdf	GIS programmer ponders a contract for a web map overlays toxic industrial sites and at-risk communities.
tidal wetland mapping case.pdf	A scope of work statement and established mapping procedures prevent a GIS analyst from adding wetlands to a conservation database.
privacy_and_planning_case.pdf	A GIS professional considers filing an ethics complaint about lax protection of the confidentiality of a sensitive database.
ethical minefield case.pdf	Should a surveying and mapping crew chief pay a bribe to acquire data needed to conduct field reconnaissannce safely?



gisprofessionalethics.org

#### Case study: Environmental Justice Web Map

Jackson owns and operates a small software development firm that specializes in web mapping; He is a certified GIS Professional. A non-profit organization called "environmentaljustce.org" has approached Jackson's firm with a request for bid for a custom web mapping application to be hosted at its web site. The web map is to show the spatial association of (a) industrial sites known to have decharged of toxic substances into the environment with (b) the locations of what the organization calls "communities at risk." Environmentaljustice org defines the latter as areas characterized by high rates of families below poverty, low-income families, non-high school graduates, people of color, working class people, nenters, and childran in poverty.

The web map will be freely available to anyone who has access to the Internet through a property configured web browser. All of the data layers the map will combine are public records that hav not been combined before at a national scale and in such an interactive format. For example, data compiled by the Environmental Protection Agency pinocint Superfund sites and other industrial alles known to have discharged toxic substances. Population data needed to delineal communities at risk are available from the U.S. Census Bureau. The organization's goal is to promole public awareness and concern about what it constens to be the unjust exposure of underprivileged people to the risks associated with industrial polution. Because of a benefactor were large donation, the organization is able to offer Jackson a very lucrative contract.

Meanwhile, a large firm that produces glass fiber has learned about the planned web mapping, project, and is stready considering legal action to block it. The firm is concerned that the web r is likely to be misinterpreted by novice viewers, and that the firm will be among those accused explosing communities at risk. Lawyers are propered to argue that thematic maps of this kind reveal spatial relationships, but cannot prove causation or intention. The firm and others like it first that it is libelous to promote the notion that they locate factories near neighborhoods that have the least political influence. Furthermore, they are concerned with the accuracy and completeness of the data that will be mapped. For example, some traic release information is

## **CASE STUDIES**



gisprofessionalethics.org

#### Case study: E-911 Contract Conflict of Interest

A state agency has announced a new project that will provide funds to extend E-911 services to rural counties throughout your state. One goal of the project is to improve accuracy and completeness of street centerine and emergency service zone data maintained by rural counties for use in dispatchiling emergency services.

You are the GIS Manager for the utilities division of a small municipality within one of the rural counties included in the project. Your municipality is both the county seat and its largest city. Moreover, you are the only contribed GIS Professional (GISP) employed by the dity or county. Recognizing your expertise, the state E-811 Coordinator invites you to help evaluate the proposals of contractors who told on the part of the project that will take place in your ocurty. The E-911 Coordinator is also a GISP.

Some weeks after submitting your evaluations you're surprised to learn that the contractor selected for the project is one that neither submitted the lowest bid nor earned the highest average evaluation. Puzzled, you ask around and find out that the state E-911 Coordinator who had that asy in the selection process is a former employee of the winning bidder.

Sion thereafter you host a project kick-off meeting attended by the E-911 Coordinator, a representative of the selected contractor, and other local officials including the County Engineer, IT Director, and Sheriff's E-911 dispatcher. Following discussion about a process for assessing the fitness for us of existing GIS datasets, you provide copies of the municipal data you oversee, including street centerines acquired with survey-grade GPS receivers, address point data, and one-meter orthorectified aerial imageny that had been acquired nine years earlier. You also provide contracts for employees of neighboring municipalities who can provide striatr local data.

Two months later you are again surprised to find that the contractor's project requirements analysis states that no suitable data exists, and that street centerline and related address data







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## **CODE OF ETHICS**



CODE OF ETHICS

## The GIS Certification Institute

This Code of Ethics is intended to provide guidelines for GIS (geographic information system) professionals. It should help professionals make appropriate and ethical choices. It should provide a basis for evaluating their work from an ethical point of view. By heeding this code, GIS professionals will help to preserve and enhance public trust in the discipline.

This code is based on the ethical principle of always treating others with respect and never merely as means to an end; i.e., deontology. It requires us to consider the impact of our actions on other persons and to modify our actions to reflect the respect and concern we have for them. It emphasizes our obligations to other persons, to our colleagues and the profession, to our employers, and to society as a whole. Those obligations provide the organizing structure for these guidelines.

The text of this code draws on the work of many professional societies. It is not surprising that many codes of ethics have a similar structure and provide similar guidelines to their professionals, because they are based upon a similar concept. of morality. A few of the guidelines that are unique to the GIS profession include the encouragement to make data and findings widely available, to document dhttps://www.gisci.org/Portals/0/Ethics/CodeOfEthics PR.pdf and products, to be actively involved in data retention and security, to show

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MEMBERSHIP

GET INVOLVED

SENSING

the use development and improvement of the mapping sciences (Photogrammeny semation Systems and related sligiplines) should accept those principles as a set of a way of the nather item merely for patalox observance. It is an inherent obligation to with all diligence and in so-doing to be guided by this Code of Ethics.

mapping sciences profession shall have full regard for achieving excellence in the d the essentiality of maintaining the highest standards of ethical conduct in employer all clients colleagues and associates and society at large and shall -

statual artitution by the highest standards and be a faithful trustee or agent to all in uttailoyar

such a manner as will bring credit and dignity to the mapping sciences profession. Di anyone who is engaged in the mapping sciences profession by



Login to Hy ASPRS :



Practical Ethics Education



## **Case Studies**

**Open Educational Resources for** Practical Ethics Education

This project produced a set of case studies based on real and hypothetical scenarios experienced by geospatial professionals. The cases and associated instructor resources are freely available for use and mase at other institutions. They have been sucresolutly implemented in graduate curricula (both ordine and on campus) as well as in workshop set-

The "naw method" is a common pedagogical approach to ethics education in many fields. Through methodical analysis of sase studies, students gain improved ethical sensitivity, knowledge, and judgment. Davis' "seven-step guide for ethical decisionmaking" helps students learn to analyze cases nethodically

Examples of case study scenarios:

- > A police department's plan to map potential tercorist enclaves brings charges of rocial profiling.
- > A GIS analyst is asked to exclude pertinent data from maps prepared for a public hearing.

· Researchers track mobile phone users' movements to derive predictive models of human mobility.

- A geosportial intelligence analyst predicts the civilian cossulties likely to be caused by a preerrentive missile attack.
  - A sales representative is espected to withhold information that could affect availability of a data product.

A more of work statement and established mapping procedures prevent a GIS analyst from adding wetlands to a kenduse planning detabase.

#### comfortable? or "do I have a conflict of interest?" Step 2: Check facts. Many problems disappear upon closer examination of the abustion, while oth-

London, Ergland; Routhshas,

ers change radically. Step 3: Identify relevant factors. For mample, persons involved, laws, professional code, other practical constraints.

NEWS

Pedagogy

Seven Step Process for

Making Ethical Decisions in GIS&T

Davis, Michael (1999). Ethics and the University.

A key objective of practical othics education in

of energent and foture geospatial professionals

Step t: State problem. For example, "there's

something about this decision that makes me un-

helping students acquire these skills.

GIS&T is to strengthen the moral reasoning skills

Davis' "seven-step guide" is a useful framework for

ABOUT US

Step 4: Develop list of options. Its imaginative, try to avoid "dilemma"; not "yes" or "no" hat whom to go to, what to say.

Step &: Test options. Use such tests as the fellowing: Harm test: does this option do less harm then alternatives? Publicity test: would I want my choice of this option published in the newspaper? Defensibility test: could I defend choice of option before Congrussional committee or comntitter of peers? Reversibility test: would I still think the choice of this option is good if I were adversely affected by it?

Step 6: Make a choice based on steps 2-3.

Step 7: Review steps 1-6. What could you do to make it less block that you would have to make such a decision again?

THE SCIENCE OF WHERE



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## Certified GIS Professionals (GISPs) Report on Ethics Violation

Roles of Conduct (Printer Really Format)

**a**)

Ethics Education for Current & Aspiring **Geospatial Professionals** 



Protecting Our World, Conquering New Frontiers

 Strong need for ethics as a topic in geospatial education (including principles, procedures, consequences, standardization)

Preliminary conclusions Ethics in GI

- General awareness for the topic in academic curricula
- Already an important topic

THE ROLE OF ACADEMIA IS THE GATEWAY OF GEO-

**ETHICS** 

• Becoming even more important







28 May - 1 June 2023 Orlando Florida USA

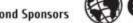
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# **Questions?**

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