

Ibsen Chivatá Cárdenas
Department of Public Health
CMSS - Centre for Maritime Health and Society
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Phone: +4565503819

Research Interests

Ibsen's research interests are focused on climate change mitigation and risk to infrastructure.

Recently, he authored the publication "*Mitigation of climate change. Risk and uncertainty research gaps in the specification of mitigation actions*".

He is seeking PhDs interested in applying for GAIA Postdoctoral Fellowships under the Marie Curie fellowship initiative. Our group will support the respective applications, which should be submitted to the SDU Climate Cluster. We are particularly interested in endorsing projects focused on the acceptance of climate change mitigation options, ideally related to the maritime sector. For more information, visit SDU Climate Cluster GAIA Postdoc or contact him.

He is developing a research proposal for the project ARTEMI: Analysing Risk To Encourage collective climate change Mitigation.

He is searching for research partners interested in the calls:

MISSION-48-HORIZON-MISS-2024-CIT-01-05: Supporting national, regional, and local authorities across Europe to prepare for the transition towards climate neutrality within cities.

MISSION-46-HORIZON-MISS-2024-CIT-01-03: Mobility management plans and behavioural change.

CLUSTER6-72-HORIZON-CL6-2025-03-GOVERNANCE-XX: Exploring the option space to resolve land competition.

Currently, for a project at the University of Southern Denmark, he undertakes research in risk governance in sociotechnical systems. In collaboration with the Centre of Maritime Health and Society, he will provide scientific input to Denmark's energy hub programme. An energy hub connects and distributes power from the surrounding offshore wind farms.

In collaboration with the Research Centre for Arctic Petroleum Exploration, ARCEX, (a 16 academic and industrial partners consortium funded by the Norwegian Research Council under the grant agreement 228107), Ibsen has contributed to understanding risk connected to exploration and operation in the north (2021-2023).

In 2016, he successfully finalised the appointment to the BENEFIT project (a 14 academic and industrial partners research project funded by the European Union's Horizon 2020 programme under grant agreement 635973). In this project, probabilistic causation models that jointly consider project governance, business models, and funding and financing factors enabling transport projects' performance goals to be achieved, were developed.

In 2012, Ibsen completed his doctorate studies at Universiteit Twente in the Netherlands. He has been using the Bayesian networks framework for the quantification of risk and uncertainty in tunnelling, slope stability analysis, project governance and geohazard assessments. He is civil engineer from the National University of Colombia.

Employment

Department of Public Health

Odense M, Denmark

18. Sept 2024 → 30. Apr 2026

Postdoc

CMSS - Centre for Maritime Health and Society

Esbjerg Ø

18. Sept 2024 → 30. Apr 2026

Research outputs

Mitigation of climate change. Risk and uncertainty research gaps in the specification of mitigation actions

Cárdenas, I. C., Dec 2024, In: *Environmental Science & Policy*. 162, 7 p., 103912.

Accident analysis of diving operations related to subsea cable installation

Cárdenas, I. C., Kozin, I. & Taylor, J. R., 2024, *Centre of Maritime Health and Society, University of Southern Denmark*. 47 p.

Mitigation of climate change. Increased consideration of risk and uncertainty

Cardenas, I. C., 5. Sept 2023, *European Safety and Reliability Association: Proceedings of the 33rd European Safety and Reliability Conference (ESREL 2023)*. Brito, M., Aven, T., Baraldi, P., Cepin, M. & Zio, E. (eds.). Research-publishing.net, p. 2760-2761 2 p.

Addressing challenges in uncertainty quantification: The case of geohazard assessments
Cardenas, I. C., Aven, T. & Flage, R., 21. Mar 2023, In: *Geoscientific Model Development*. 16, 6, p. 1601-1615

A two-dimensional approach to quantify stratigraphic uncertainty from borehole data using non-homogeneous random fields
Cardenas, I. C., 5. Mar 2023, In: *Engineering Geology*. 314, 107001.

Marine geohazards exposed: Uncertainties involved
Cardenas, I. C., Flage, R. & Aven, T., 28. May 2022, In: *Marine Georesources & Geotechnology*. 41, 6, p. 589-619

Discussing issues in uncertainty quantification. The case of geohazard assessments
Cardenas, I. C., 2022, *Book of Extended Abstracts for the 32nd European Safety and Reliability Conference*. Leva, M. C., Patelli, E., Podofilini, L. & Wilson, S. (eds.). Singapore: Research-publishing.net, p. 39-40

A structural causal model approach to specify trigger factors in geohazard assessments
Cardenas, I. C., 2021.

On the use of Bayesian networks as a meta-modelling approach to analyse uncertainties in slope stability analysis
Cárdenas, I. C., 2. Jan 2019, In: *Georisk*. 13, 1, p. 53-65

Business models for transport infrastructure assets? Some experiences in Europe
Roumboutsos, A., Voordijk, H., Karousos, I. & Cardenas, I. C., 2019, *The decision-making process for infrastructural investment choices*. Venezia, E. (ed.). Franco Angeli

Towards analysing risks to public safety from wind turbines
Brouwer, S. R., Al-Jibouri, S. H. S., Cárdenas, I. C. & Halman, J. I. M., Dec 2018, In: *Reliability Engineering & System Safety*. 180, p. 77-87

Beyond project governance. Enhancing funding and enabling financing for infrastructure in transport. Findings from the importance analysis approach
Cárdenas, I. C., Voordijk, H. & Dewulf, G., 2018, In: *European Journal of Transport and Infrastructure Research*. 18, 4, p. 481-498

Funding and Financing Transport Infrastructure: Business Models to Enhance and Enable Financing of Infrastructure in Transport
Bernardino, J., Campos, J., Cardenas, I. C., Cirilovic, J., González-Serrano, M. M., Inchausti-Sintes, F., Ivanisevic, N., Karousos, I., Łukasiewicz, A., Mikic, M., Mitusch, K., Mladenović, G., Moraiti, P., Moschouli, E., Nouaille, P., Pantelias, A., Roumboutsos, A., Soeipto, M., Temeljotov Salaj, A. & Trujillo, L. & 4 others, Vajdic, N., Vanelslender, T., Verhoest, K. & Voordijk, H., 2018, Routledge.

Beyond theory: Towards a probabilistic causation model to support project governance in infrastructure projects
Cardenas, I. C., Voordijk, H. & Dewulf, G., 2017, In: *International Journal of Project Management*. 35, 3, p. 432-450

Coping with uncertainty in environmental impact assessments: Open techniques
Cardenas, I. C. & Halman, J. I. M., 1. Sept 2016, In: *Environmental Impact Assessment Review*. 60, p. 24-39

Transport infrastructure business models: New sources of funding and financing.
Roumboutsos, A., Gouin, T., Leviäkangas, P., Mladenović, G., Voordijk, H., Moraiti, P. & Cardenas, I. C., 2016.

Using prior risk-related knowledge to support risk management decisions: Lessons learnt from a tunneling project
Cárdenas, I. C., Al-Jibouri, S. S. H., Halman, J. I. M., van de Linde, W. & Kaalberg, F., 1. Oct 2014, In: *Risk Analysis*. 34, 10, p. 1923-1943

Modeling risk-related knowledge in tunneling projects

Cárdenas, I. C., Al-Jibouri, S. S. H., Halman, J. I. M. & Van Tol, F. A., 2014, In: Risk Analysis. 34, 2, p. 323-339

Capturing and Integrating Knowledge for Managing Risks in Tunnel Works

Cárdenas, I. C., Al-Jibouri, S. S. H., Halman, J. I. M. & van Tol, F. A., 2013, In: Risk Analysis. 33, 1, p. 92-108

Relevant risk factors associated with the construction of excavated tunnel cross-passages in soft soils

Cardenas, I. C., Al-Jibouri, S. H. S. & Halman, J. I. M., 2013, In: Geotechniek. 17, 1

Integrating knowledge for managing risk in infrastructure projects: the case of tunnel works

Cárdenas, I. C., 16. Nov 2012

A bayesian belief networks approach to risk control in construction projects

Cardenas, I. C., Al-Jibouri, S. H. S. & Halman, J. I. M., 2012.

A bayesian network based risk model for volume loss in soft soils in mechanized bored tunnels

Cardenas, I. C., Al-Jibouri, S. H. S. & Halman, J. I. M., 2012.

Uncertainty modeling in risk analysis using Bayesian networks

Cardenas, I. C., Al-Jibouri, S. H. S. & Halman, J. I. M., 2012.

An uncertainty-based framework to support decision-making in geotechnical engineering projects

Cardenas, I. C., Halman, J. I. M. & Al-Jibouri, S. H. S., 2009.

Estimación de la susceptibilidad ante deslizamientos: aplicación de conjuntos difusos y las teorías de la posibilidad y de la evidencia

Cárdenas, I. C., 2008, In: Ingeniería e Investigación. 28, 1, p. 26-40

Modelación no paramétrica de lluvias para la ciudad de Manizales, Colombia: una aplicación de modelos multinomiales de probabilidad y de probabilidades imprecisas

Cárdenas, I. C., 2008, In: Ingeniería e Investigación. 28, 2, p. 22-29

Projects

Analysing safety risks for energy hubs in relation to maritime operations

Froholdt, L. L. (Head coordinator), Kozin, I. (In charge of work packages) & Cárdenas, I. C. (Project participant)
01/05/2023 → ...

ARTEMIs: Analysing Risk To Encourage collective climate change Mitigation

Cárdenas, I. C. (Project participant)
01/05/2025 → 31/12/2028

Coping with uncertainty in environmental impact assessments

Cárdenas, I. C. (PI) & Halman, J. I. M. (Project participant)
06/12/2012 → 01/09/2016

SDU Maritime Research Platform

Lützen, M. (Project manager), Froholdt, L. L. (Project participant), Pahl, J. (Project participant), Rytter, N. (Project participant), Nevers, J. (Project participant), Siig, K. (Project participant), Jensen, S. (Project participant), Jensen, N. V. (Project participant), Byskov, S. (Project participant), Møller, A. H. (Project participant), Jørstian, J. L. (Project participant), Polami, K. B. (Project participant), Avendaño-Valencia, L. D. (Project participant), Aaskov Drangsfeldt, C. (Project participant), Ramic, E. (Project participant), Palmgren, J. L. (Project participant), Rasmussen, H. B. (Project participant), Fenn, A. (Project participant), Kozin, I. (Project participant) & Cárdenas, I. C. (Project participant)

01/11/2022 → 31/10/2026

Activities

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
12. Jan 2025

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
19. Dec 2024

Ocean Engineering (Journal)

Cárdenas, I. C. (Peer reviewer)
3. Dec 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
10. Nov 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
23. Oct 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
16. Oct 2024

Mitigation and Adaptation Strategies for Global Change (Journal)

Cárdenas, I. C. (Peer reviewer)
22. Sept 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
10. Sept 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
5. Sept 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
3. Sept 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
21. Aug 2024

Mitigation and Adaptation Strategies for Global Change (Journal)

Cárdenas, I. C. (Peer reviewer)
19. Aug 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

9. Jul 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

24. Jun 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

21. Jun 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

20. Jun 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

10. Jun 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

3. Jun 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

31. May 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

19. Apr 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

29. Mar 2024

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

7. Mar 2024

Bulletin of Engineering Geology and the Environment (Journal)

Cárdenas, I. C. (Peer reviewer)

8. Feb 2024

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

30. Jan 2024

International Journal of Disaster Risk Reduction (Journal)

Cárdenas, I. C. (Peer reviewer)

29. Dec 2023

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

6. Dec 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

5. Dec 2023

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

28. Nov 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

21. Nov 2023

International Journal of Disaster Risk Reduction (Journal)

Cárdenas, I. C. (Peer reviewer)

13. Nov 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

9. Nov 2023

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)

31. Oct 2023

International Journal of Disaster Risk Reduction (Journal)

Cárdenas, I. C. (Peer reviewer)

25. Oct 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

12. Oct 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

5. Oct 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

1. Sept 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

28. Aug 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

11. Aug 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)

21. Jul 2023

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
10. Jul 2023

Landslides (Journal)

Cardenas, I. C. (Peer reviewer)
2. Jun 2023

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
16. Dec 2022

Landslides (Journal)

Cardenas, I. C. (Peer reviewer)
17. Oct 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
1. Sept 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
5. Jul 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
1. Jun 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
13. May 2022

Journal of Cleaner Production (Journal)

Cárdenas, I. C. (Peer reviewer)
12. May 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
9. Mar 2022

Journal of Cleaner Production (Journal)

Cardenas, I. C. (Peer reviewer)
15. Jan 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
4. Jan 2022

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
22. Dec 2021

Landslides (Journal)

Cardenas, I. C. (Peer reviewer)
28. Oct 2021

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
28. Sept 2021

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
2. Jul 2021

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
14. Jun 2021

Landslides (Journal)

Cárdenas, I. C. (Peer reviewer)
26. Apr 2021

Built Environment Project and Asset Management (Journal)

Cardenas, I. C. (Peer reviewer)
2021

Journal of Cleaner Production (Journal)

Cardenas, I. C. (Peer reviewer)
11. Oct 2020

Advanced Engineering Informatics (Journal)

Cardenas, I. C. (Peer reviewer)
2020

Ecological Economics (Journal)

Cardenas, I. C. (Peer reviewer)
2020

Advanced Engineering Informatics (Journal)

Cardenas, I. C. (Peer reviewer)
2019

Advanced Engineering Informatics (Journal)

Cardenas, I. C. (Peer reviewer)
2019

Environmental Impact Assessment Review (Journal)

Cardenas, I. C. (Peer reviewer)
2019

Risk Analysis (Journal)

Cardenas, I. C. (Peer reviewer)
2019

International Journal of Productivity and Performance Management (Journal)

Cardenas, I. C. (Peer reviewer)
2018

Transport Reviews (Journal)

Cardenas, I. C. (Peer reviewer)
2018

International Journal of Project Management (Journal)

Cardenas, I. C. (Peer reviewer)
2017

International Journal of Project Management (Journal)

Cardenas, I. C. (Peer reviewer) & Cardenas, I. C. (Peer reviewer)
2016

Teaching portfolio

1. Formal educational training

2024 Introduction to teachers - for new teachers, University of Southern Denmark

2024 Planning bias-aware interactions during teaching and supervision, University of Southern Denmark

2022 Basic course in HIGHER EDUCATION PEDAGOGIES, University of Stavanger, 150 hr.

2021 SUPERVISION IN HIGHER EDUCATION, University of Stavanger.

2021 STORYTELLING, University of Stavanger.

2. Administrative tasks relating to education

2015-2016 Coordination assistant and lecturer of the international summer course in Risk Management at the University of Twente. Main topics: Fundamentals of Risk management, Quantitative methods for risk analysis, Flood risk management, Disaster management.

3. Experience with study programmes, supervision and examinations

Internal co-examinator at University of Southern Denmark

2024 Course 'Applied biostatistics' of the programme Master in Public Health

Master thesis at University of Stavanger:

2023 "An evaluation of the Covid-19 risk assessments carried out by Yara in the crisis management, seen from a current risk science perspective".

2023 "Compare and discuss people's (politicians, media, ..) use of risk concepts relative to current risk science, for example in relation to climate change".

2023 "To identify effective strategies for the prevention, management, and communication of energy blackouts in Norway through an analysis of current practices and stakeholder perspectives"

4. Methods, materials and tools

This employee's teaching, learning, and supervision duties will be informed by an approach based on research and peer learning. This approach aims to increase the probability of study completion. Another important aim is to put to use the knowledge and skills acquired by the student in relevant professional challenges. To these aims, the design and implementation of individualised tutoring, guiding documents, lectures, and assignments, together with the graduation final assignment and thesis guidance, as well as the overall evaluation, will be informed by the continuous gathering and analysis of evidence on the following aspects:

Aspect 1. Current risk science relevant challenges.

Aspect 2. Fundamental students' skills deficit.

Aspect 3. Students' specific abilities to understand and address risk problems.

Aspect 4. Students' professional expectations.

Aspect 5. Students' course expectations.

Aspect 6. Students' attitude, motivation, and engagement.

6. Reflection on my own teaching practice and future development

The evidence on the above 6 aspects will be collected directly by early dialogues and standardised course evaluation, focused feedback by students, as well as observations in instances of interaction with students. Colleagues through informal consultations and joint classes can provide input as well. With focused and useful feedback, specific methods to address arising setbacks in the teaching-learning-supervision process will be more easily resolved using earlier experiences and by obtaining personalised advice from local and international experts in peer learning environments.

Note that, the above-focusing aspects of teaching, learning, and supervision have been frequently hypothesised in related literature. They are seen as factors that increase the probability of study completion, as well as the probability of exploiting the knowledge acquired by students during their professional and academic careers.