

GEOENGINEER.ORG REPORT GEO/01/06

Available at: <http://www.geoengineer.org>

GEOENGINEERING, REFEREED JOURNALS AND CASE HISTORIES

A survey

by

Adda G. Athanasopoulos, University of California at Berkeley

Dimitrios Zekkos, PhD, GeoSyntec Consultants



September 2006

ACKNOWLEDGEMENTS

This report summarizes the results of a survey titled “Geoengineering, Case Histories and Refereed Journals”, performed between December 15, 2005 and February 10, 2006. The preliminary results of the survey were presented in the workshop "International Journal of Geoengineering Case Histories: Case histories in the information technology age" on Sunday February 26th, 2006 as part of the GEOCONGRESS 2006 ASCE-GEOINSTITUTE annual conference from 9:00 am to 12:00 pm (<http://www.geoengineer.org/casehistoriesworkshop/>).

The survey was supported by Geoengineer.org (<http://www.geoengineer.org>) with the financial support of the Geoengineer.org Corporate Sponsors gINT Software and RocScience.

This report is available at:

http://www.geoengineer.org/files/GEO_01_06.pdf

Geoengineer.org Corporate Sponsors:



Website: <http://www.gintsoftware.com/>



Website: <http://www.rocscience.com/>

Acknowledgments.....	1
Table of contents.....	2
SECTION I: EXECUTIVE SUMMARY.....	3
1. INTRODUCTION.....	3
2. PARTICIPANTS BACKGROUND INFORMATION.....	3
2.1. Geographic Distribution.....	3
2.2. Practice Area.....	4
2.3. Educational background and experience.....	4
3. GEOENGINEERING AND REFEREED JOURNALS.....	4
3.1. Research dissemination and refereed journals.....	5
3.2. Journal subscription.....	5
4. GEOENGINEERING AND CASE HISTORIES.....	7
5. GEOENGINEERING AND INTERNET.....	8
SECTION II: SURVEY QUESTIONNAIRE.....	12
SECTION III: SURVEY QUESTIONS AND RESPONSES.....	16

SECTION I: EXECUTIVE SUMMARY

1. INTRODUCTION

A survey was performed for a period of 58 days, from December 15, 2005 to February 10, 2006. The survey, titled “Geoengineering, Case Histories and Refereed Journals”, intended to investigate the relationship of the members of the Geoengineering community with case histories and refereed journals. A total of 464 members of the Geoengineering community participated by responding to the questions posed by an online survey via the Internet.

Invitations to participate in the survey were sent to the members of the Geoengineer Newsletter on December 15, 2006. Additional invitations were sent to various electronic mailing lists in Geoengineering and an announcement was also posted at the main page of the Geoengineer website (<http://www.geoengineer.org>).

The results of the survey are presented in this report. Section I summarizes the results and findings of the report. Section II includes a copy of the questionnaire. Section III presents the questions and the statistics of the responses to this survey.

2. PARTICIPANTS BACKGROUND INFORMATION

The first four questions (questions 1-4) intended to collect relevant background information of the participants. Such information included geographic location, practice area, years of experience, and educational background.

2.1. Geographic Distribution

A total of 464 participants from 74 countries responded to the survey. A significant number of participants (135 individuals, 29% of total) are practicing in the United States of America. Practitioners from India represent also an important percentage of the

participants (50 individuals, 11% of total), while more than 10 practitioners participated from Iran (27 individuals, 6% of total), the United Kingdom (20 individuals, 4% of total), Greece (14 individuals, 3% of total), Egypt (13 individuals, 3% of total), Turkey (12 individuals, 3% of total) and Canada (11 individuals, 2% of total). Fewer than 10 participants responded from the remaining 66 countries, representing however 39% of the total participation. These statistics are summarized in Table 1 and Figure 1. The geographic distribution of the participants by continent is shown in Figure 2: 36% of the participants are from Asia, 32% from North America, 17% from Europe, 7% from Central and South America, 6% from Africa and 2% from Oceania.

2.2. Practice Area

Approximately half of the participants are actively involved in consulting and design (47.8%). About 1 out of 5 participants are Professors at various levels involved in the Academia (19.4%) and approximately 1 out of 10 participants are involved in construction (11.4%), are researchers (9.4%) or graduate students (9.4%). A small number of participants (2.4%) were undergraduate students.

2.3. Educational Background and experience

Approximately 4 out of 10 participants have been practicing for more than 15 years (39.9%) while the remaining participants were evenly distributed between younger geoengineers practicing for 0 to 5 years (29.1%) and 6 to 15 years (31%). Half of the participants responded that their highest academic degree in Geoengineering was a Master of Science or equivalent (51.1%) whereas 30.6% have earned a doctorate and 18.3% have earned a Bachelor of Science (or equivalent).

3. GEOENGINEERING AND REFEREED JOURNALS

The second group of questions (questions 5-9) intended to collect information regarding the relationship of the members of the Geoengineering community with refereed journals.

3.1. Research dissemination and refereed journals

When asked to describe their relationship with research and papers published in refereed journals, about a third (34.9% of total) of the participants responded that they are subscribed to at least one journal and they consider themselves being adequately informed with the latest research findings in their field of practice. Slightly fewer participants (27.3% of total) responded that they are subscribed to at least one journal, but only read occasionally some of the papers that are of interest to them. A similar fraction (29.3%), also about a third of the participants, responded that they are not subscribed to any journals, but consider themselves being informed of the latest findings by other means such as subscription to magazines, participation in conferences, interaction with colleagues etc. Approximately one out of ten (8.5%) participants responded that they are not systematically informed of the latest research findings in any way. While this question is subjective to the judgment of the participant, it is interesting that only a third of the participants consider themselves being systematically informed of the latest findings in their field by refereed journals, whereas the majority of the geoengineers are informed either occasionally by journals or use other resources.

3.2. Journal subscription

More than a third of the participants (35.6%) are not personally subscribed to any journals while another 23.4% are subscribed to only one journal. Another third of the participants (33.2%) are subscribed to 2-4 journals and only a small number (7.9%) are subscribed to more than 4 journals. Cumulatively, 59% of the participants are subscribed to one only or are not subscribed to any journal. The results of the survey were further studied to identify whether engineers with doctorates were subscribed to more journals than engineers with Masters' level education or engineers with a Bachelor's degree. The disaggregated results are presented in Table 2 and suggest that generally engineers with a PhD degree tend to be personally subscribed to more journals, but only slightly. About 46% of engineers with PhD degree are subscribed to more than 2 journals, as opposed to

39.2% of engineers with Master's degree and 36.8% of engineers with Bachelor's degree or equivalent.

This result is important, because it may explain partly other issues that need to be addressed in our profession. For example, the time delay typically observed between the publication of new research findings and methods and their implementation in practice, as well as the continued use of superseded methods by practitioners are phenomena that can at least in part be explained by the above situation. This phenomenon could also be a contributing cause for the disconnect between Geoengineering research and practice. Considering the responses to this question, a decision was made to include a new question identifying to how many journals of geo-interest is the participant's organization (e.g. company, institution, university) subscribed. Because this question was only added in the questionnaire at a later time, only 266 responses were collected, as opposed to about 460 responses collected for the remaining questions. Thus, the sample of responses to this question is smaller in size than the responses in the previous questions and should be considered less representative. Nevertheless, about half of the participants responded that their institution is subscribed to more than 4 journals whereas 28.9%, 11.3% and 14.3% responded that their organization is subscribed to 2-4, 1 and 0 journals.

The participants were requested to judge overall the usefulness of the papers published in refereed journals in their everyday practice. The vast majority of the participants (88.5%) responded that papers published in refereed journals are very or somewhat useful, while the minority (11.5%) considered the papers not that useful or not useful. The responses to this question are interesting when considering the responses to previous questions. While 88.5% of the participants consider papers published in refereed journals very or somewhat useful, 59% of the participants either are not subscribed or are subscribed to one journal only. The reasons for these apparently inconsistent responses can be explained by the responses to the following question. When asked what is the primary reason for not subscribing to more refereed journals than currently, the majority of the participants (60.2%) responded that the main reason is the subscription price. Only one out of ten participants responded that the reason is the content (8.4%), the lack of

available time (13.3%) and the fact that papers published are not of much interest to their practice (7.3%). A very small percentage provided as the most important reason the quality of the journals (3.3%) whereas 7.5% provided other reasons.

4. GEOENGINEERING AND CASE HISTORIES

Another set of questions (questions 10-17) aimed to provide some insight on how much the members of the Geoengineering community value published case histories. The vast majority (83.8%) of the participants consider case histories very important in the Geoengineering field and 15.4% consider case histories somewhat important. Only 0.9% considers case histories not that important and none of the participants considers case histories unimportant. Similar are the responses of the participants when asked how important are case histories in their specific practice: 73.9% consider case histories very important in their practice and 23.9% consider case histories somewhat important. Only 2.2% consider case histories not that important in their practice and again no participant considers case histories unimportant.

More than half (55.9%) of the participants read papers presenting case histories at a rate of at least once every month, whereas only 15.3% of the participants read case histories at an equivalent rate of at least one case history every week and the remaining 28.9% read case histories less often than once a month. According to the participants, primary sources of papers in case histories are journals (43.8%), conferences (33%) and magazines (23.1%).

When asked what information they find most interesting and valuable in a case history, 36.9% responded that they consider most interesting both the design, the construction as well as the financial, legal and client related issues. About 49.3% consider most interesting and valuable issues related to the design of a case history such as geotechnical investigations, design analyses and design concept and methodology whereas about 13.9% consider most interesting issues related to construction such as construction difficulties and challenges, construction details etc.

The majority of the participants consider a refereed journal entirely focused on case histories very useful (55.4%) and somewhat useful (40.1%) a cumulative positive response of 95.5%. Only 4.5% consider such a journal not that useful and no participant considered such a journal not useful.

5. GEOENGINEERING AND INTERNET

The last question in the survey attempted to identify the importance of the Internet as a resource in the practice of the participants. Since the survey was completed online, participants that responded to this question are expected to use the Internet and there is therefore an expected bias in the response: 76.5% consider the Internet a very important resource in their practice, and 21.3% considers the Internet somewhat important. A very small percentage considers the Internet not that important (1.8%) and not important (0.4%) as a resource in their practice.

Table 1: Number of participants by country

Country	# of participants	Country	# of participants
USA	135	Ethiopia	2
India	50	Ghana	2
Iran	27	Mauritius	2
UK	20	Nepal	2
Greece	14	Argentina	2
Egypt	13	Netherlands	2
Turkey	12	Paraguay	2
Canada	11	Puerto Rico	2
Portugal	9	Romania	2
Australia	8	Tanzania	2
Israel	7	Bangladesh	1
Malaysia	7	Bulgaria	1
Perú	7	Czech republic	1
Brazil	6	Eritrea	1
Italy	6	Russia	1
Philippines	6	France	1
Germany	5	Guatemala	1
Iraq	5	Honduras	1
Pakistan	5	Hong Kong	1
Singapore	5	Ireland	1
UAE	5	Jordan	1
Colombia	4	Korea	1
Japan	4	Kuwait	1
Nigeria	4	Lebanon	1
Qatar	4	Libya	1
Taiwan	4	Nicaragua	1
Algeria	4	Panama	1
Indonesia	3	Papua New Guinea	1
Mexico	3	Poland	1
Norway	3	Saudi Arabia	1
Palestine	3	Serbia & Montenegro	1
Spain	3	South Korea	1
Switzerland	3	Sudan	1
Thailand	3	Tehran	1
Cyprus	3	Tunisia	1
Chile	2	Venezuela	1
Cuba	2	Vietnam	1

Table 2: Number and percentage of participating engineers subscribed to journals as a function of the level of engineering education.

Number of journals individual is personally subscribed to	BSc or equivalent		MSc or equivalent		PhD or equivalent	
	Number	%	Number	%	Number	%
0	33	37.9	85	36.6	46	32.2
1	22	25.3	56	24.1	30	21.0
2-4	24	27.6	74	31.9	53	37.1
>4	8	9.2	17	7.3	14	9.8

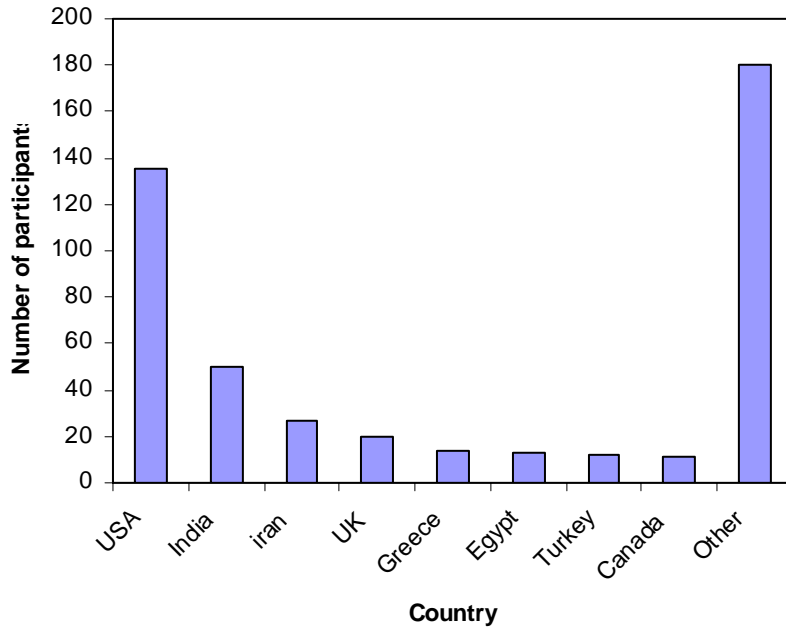


Figure 1: Countries with more than 10 participants

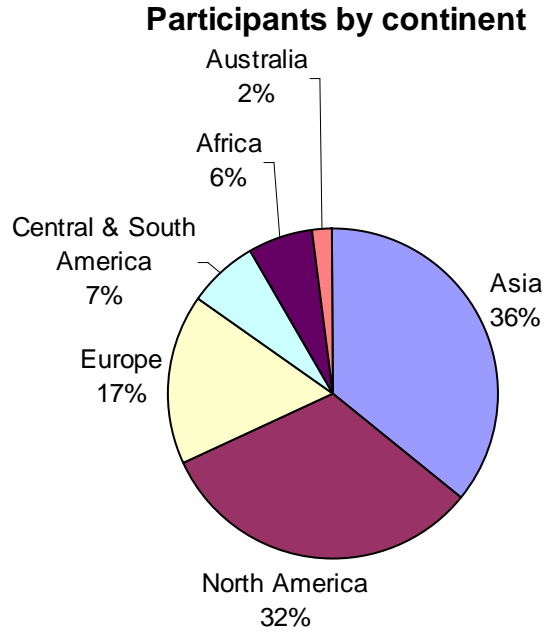


Figure 2: Distribution of participants by continent.

SECTION II: SURVEY QUESTIONS

Question #1: Country where you work: *

Question #2: Practice Area: *

Question #3: Years in current practice area: *

Question #4: Highest Academic Degree related to the Profession: *

Question #5: Which of the following describes best your relationship with research and papers published in refereed journals?

- I am subscribed to at least one journal and I consider myself being up to speed with the latest research findings in my field of practice.
- I am subscribed to at least one journal, but only read occasionally some of the papers that are of interest to me.
- I am not subscribed to any journal, but I am being informed of the latest findings by other means (magazines, conferences, colleagues etc.)
- I am not systematically informed of the latest research findings in any way.

Question #6: To how many journals are you personally subscribed?

- 0
- 1
- 2-4
- >4

Question #7: To how many journals of your interest is your organization (e.g. company, institution, university) subscribed?

- 0
- 1
- 2-4
- >4

Question #8: In your opinion, how useful are articles published in refereed journals in your everyday practice?

- Very useful
- Somewhat useful
- Not that useful
- Not useful

Question #9: What is the primary reason for not subscribing to more refereed journals?

- Price
- Content
- Not of much interest to my practice
- Quality
- No time to read it
- Other.

If other, please specify

Question #10: In your opinion, are refereed journals a major source of case histories?

- Yes
- No

Question #11: In your opinion, how important are well-documented case histories in the geoengineering field?

- Very important
- Somewhat important
- Not that important
- Unimportant

Question #12: In your opinion, how important are well-documented case histories in your practice?

- Very important
- Somewhat important
- Not that important
- Unimportant

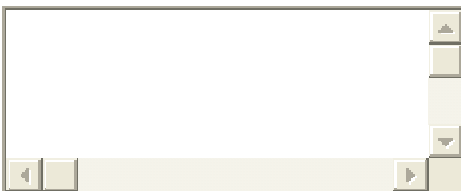
Question #13: How often do you read articles presenting case histories?

- Equivalent to at least one case history every week
- Equivalent to at least one case history every month
- Equivalent to at least one case history every six months
- Occasionally

Question #14: What is your primary source of articles presenting case histories?

- Journals. Please specify below
- Magazines. Please specify below
- Conferences. Please specify below.

Please specify which journals, magazines or conferences



Question #15: What information do you find most interesting and valuable in a case history?

- Design (Geotechnical investigation, design analyses, design concept and methodology etc.)
- Construction (construction difficulties and challenges, construction details, etc.)
- Financial, legal and client related issues
- All of the above

Question #16: Would you consider a refereed journal entirely focused on case histories useful in your practice?

- Very useful
- Somewhat useful
- Not that useful
- Not useful.

Question #17: How important is the internet as a resource in your practice?

- Very important
- Somewhat important
- Not that important
- Not important

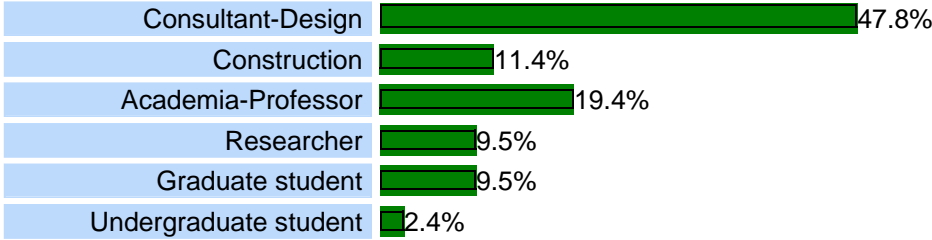
Question #18: Feel free to make any additional comments below:

Question #19: Optionally, send us your e-mail. You will be personally notified of the results of this investigation if you provide it.

Question #2: Practice Area:

Number of responses: 464

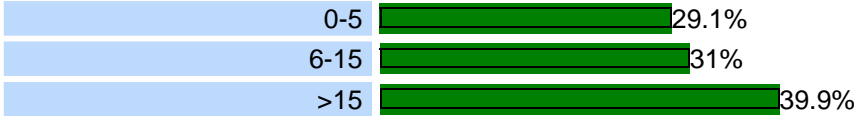
Responses



Question #3: Years in current practice area:

Number of responses: 464

Responses



Question #4: Highest Academic Degree related to the Profession:

Number of responses: 464

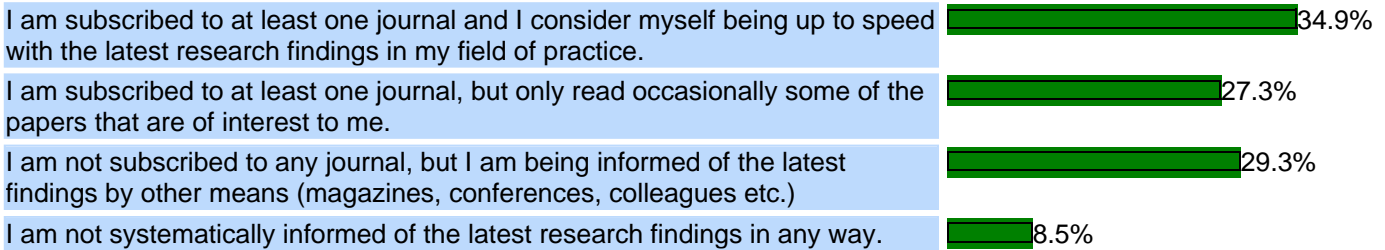
Responses



Question #5: Which of the following describes best your relationship with research and papers published in refereed journals?

Number of responses: 461

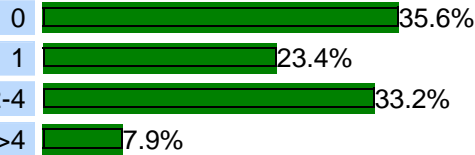
Responses



Question #6: To how many journals are you personally subscribed?

Number of responses: 458

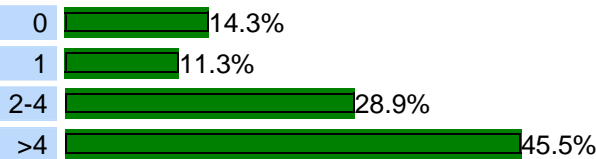
Responses



Question #7: To how many journals of your interest is your organization (e.g. company, institution, university) subscribed?

Number of responses: 266

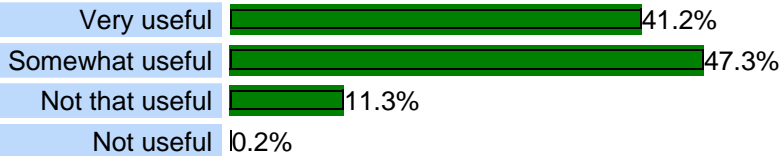
Responses



Question #8: In your opinion, how useful are articles published in refereed journals in your everyday practice?

Number of responses: 459

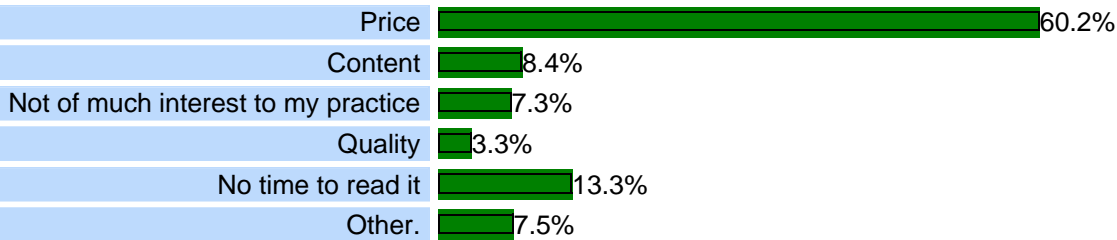
Responses



Question #9: What is the primary reason for not subscribing to more refereed journals?

Number of responses: 452

Responses



Question: If other, please specify

Number of responses: 61

Question #10: In your opinion, are refereed journals a major source of case histories?

Number of responses: 444

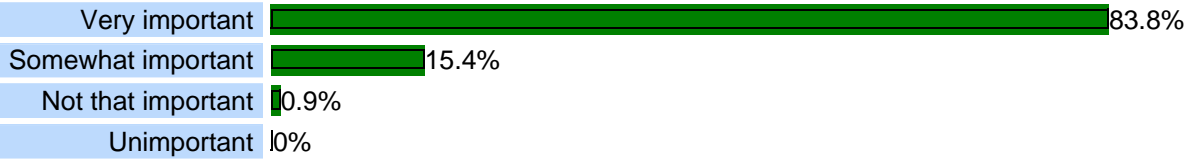
Responses



Question #11: In your opinion, how important are well-documented case histories in the geoen지니어ing field?

Number of responses: 456

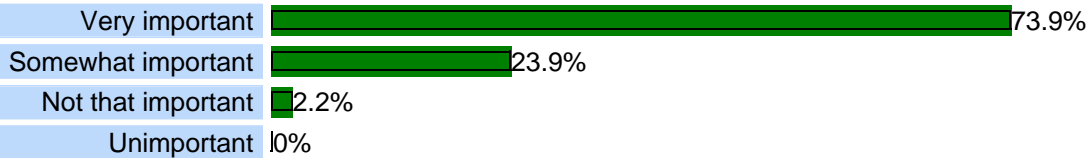
Responses



Question #12: In your opinion, how important are well-documented case histories in your practice?

Number of responses: 456

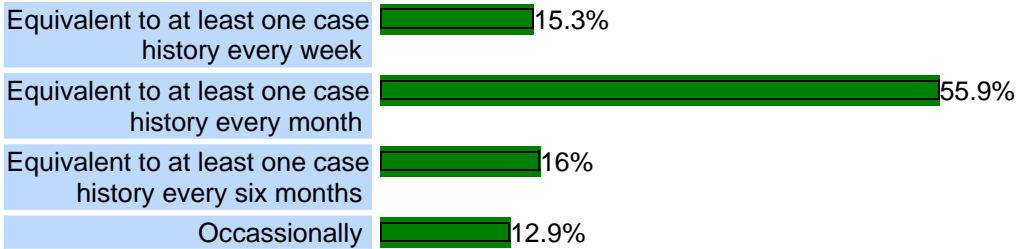
Responses



Question #13: How often do you read articles presenting case histories?

Number of responses: 451

Responses



Question #14: What is your primary source of articles presenting case histories?

Number of responses: 566

Responses



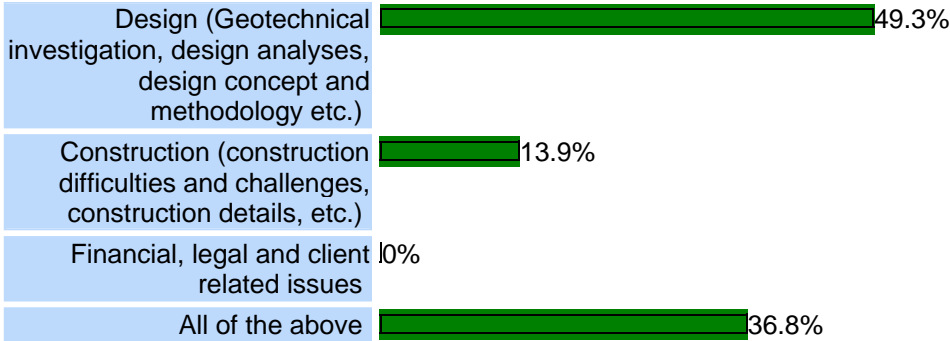
Question: Please specify which journals, magazines or conferences

Number of responses: 284

Question #15: What information do you find most interesting and valuable in a case history?

Number of responses: 454

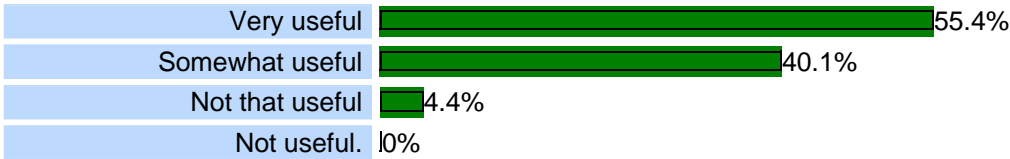
Responses



Question #16: Would you consider a refereed journal entirely focused on case histories useful in your practice?

Number of responses: 451

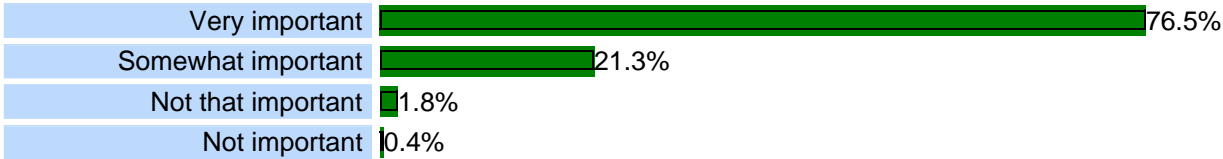
Responses



Question #17: How important is the internet as a resource in your practice?

Number of responses: 455

Responses



Question #18: Feel free to make any additional comments below:

Number of responses: 84

Responses to this question are not presented herein to respect the privacy of the participants.

Question #19: Optionally, send us your e-mail. You will be personally notified of the results of this investigation if you provide it.

Number of responses: 253

Responses to this question are not presented herein to respect the privacy of the participants.