2017 Scientific Ocean Drilling Bibliographic Database Report

Covering records related to the Deep Sea Drilling Project,
Ocean Drilling Program, Integrated Ocean Drilling Program,
and International Ocean Discovery Program
from 1969 through June 2017

Produced by

International Ocean Discovery Program

Publication Services

September 2017

Introduction

This Scientific Ocean Drilling Bibliographic Database Report demonstrates the impact of publications from the Deep Sea Drilling Project (DSDP), Ocean Drilling Program (ODP), Integrated Ocean Drilling Program, and International Ocean Discovery Program (IODP). The number of bibliographic records indexed by the American Geosciences Institute (AGI) in the Scientific Ocean Drilling Bibliographic Database (previously named the Ocean Drilling Citation Database) as of June 2017 and "cited-by" statistics obtained through CrossRef and Google Scholar in August 2017 are presented in tables and charts that demonstrate trends for both authorship and usage.

Report categories

Data collected for the annual Scientific Ocean Drilling Bibliographic Database Report are divided into two main categories:

- **Program** records: publications produced and published by DSDP, ODP, the Integrated Ocean Drilling Program, or IODP. These records include but are not limited to the *Initial Reports of the Deep Sea Drilling Project*; the *Initial Reports* and *Scientific Results* volumes of ODP; the *Proceedings* volumes of the Integrated Ocean Drilling Program and IODP, the report and technical note series from each Program, and *Scientific Drilling*.
- **Non-Program** records: Program-related scientific research published in the open literature.

Non-Program publications are further categorized into three groups:

- **Serial** records: drawn from any periodically produced analytic or monographic journal or report, especially those that are peer reviewed, but may also include reports from universities, organizations, or government entities (e.g., *Open-File Reports—U.S. Geological Survey*).
- **Theses and dissertations**: Bachelor's and Master's theses and Ph.D. dissertations.
- **Miscellaneous** records: books, reports, monographs, maps, abstracts, posters, newsletters, videos, and CD-ROM/DVD-ROMs.

Overview

The Scientific Ocean Drilling Bibliographic Database is a subset of AGI's GeoRef database. To generate the GeoRef database, AGI indexes and records bibliographic data from approximately 3,800 domestic and international publications. AGI also has arrangements to acquire metadata with many publishers, including Springer, Elsevier, the American Association for the Advancement of Science, Copernicus,

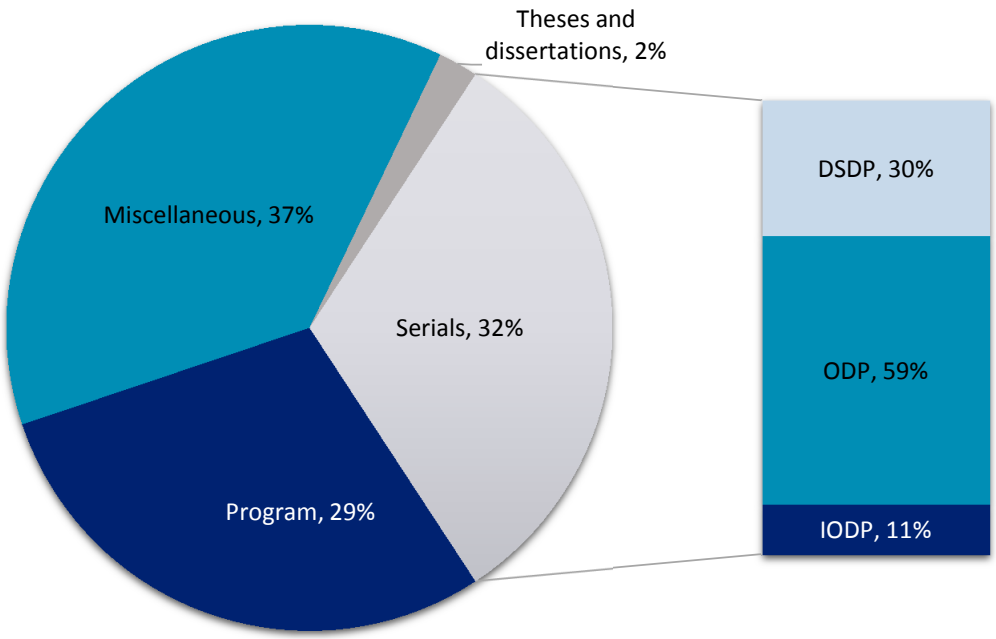
Wiley/Blackwell, the American Geophysical Union, and most of the Geoscience World publishers. In addition, IODP Publication Services notifies AGI when Program publications are released.

AGI produces the Scientific Ocean Drilling Bibliographic Database in collaboration with IODP. AGI uses a series of keywords to extract bibliographic records related to Program research from the GeoRef database. The database resides on the AGI server (http://iodp.americangeosciences.org/vufind) and is updated weekly. Metadata associated with each record can be saved to a personalized list, texted or emailed, or exported into common bibliographic software. The database also generates references in several formats.

Depending on the source from which AGI acquires its information, there may be a significant delay after publication before a record is included in the GeoRef database and later in the Scientific Ocean Drilling Bibliographic Database. There is no guarantee that all publication venues for Program research are included in GeoRef or the Scientific Ocean Drilling Bibliographic Database, but scientific publications throughout the world are represented.

As of June 2017, the database contains 33,587 records containing metadata from publications published from 1969 to 2017, including ~71% non-Program records and ~29% Program records (Figure 1). Since the 2016 report, 1,328 records have been added to the database. Figure 1 highlights the ~2% theses and dissertations (total = ~700) in the database, illustrating early career scientific research relating to the Program, and breaks out serial publications related to IODP and its predecessor programs. The IODP

Figure 1. Overview of records in the Scientific Ocean Drilling Bibliographic Database (total = 33,587).

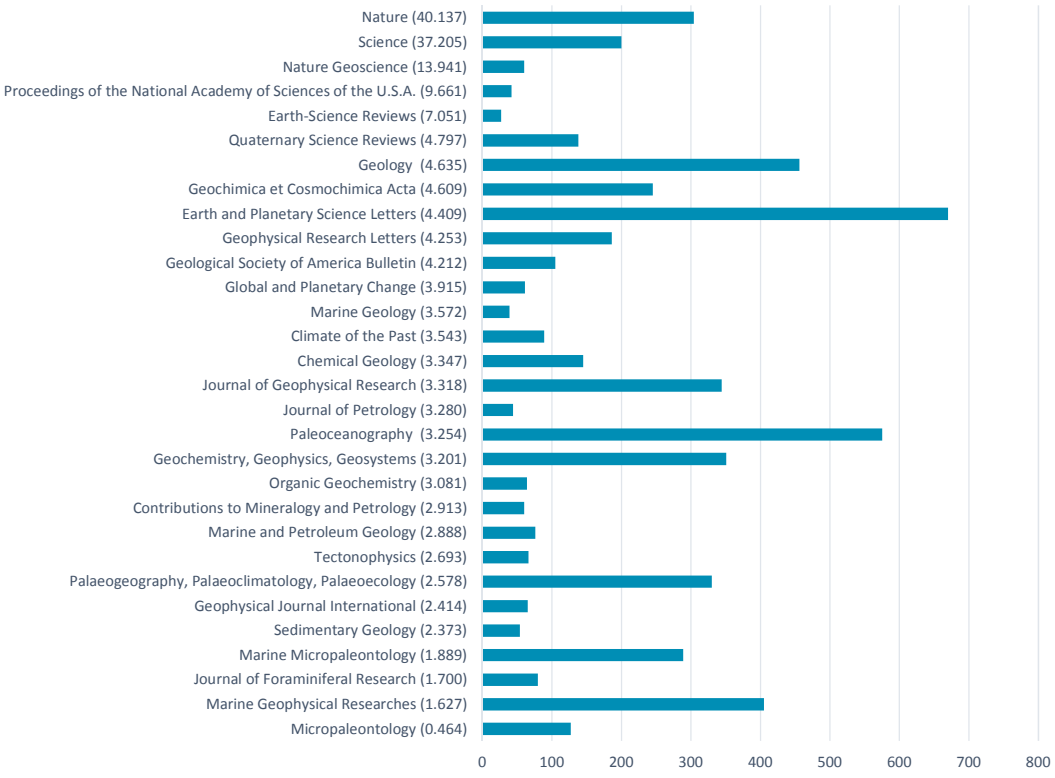


portion of this graph includes both Integrated Ocean Drilling Program and International Ocean Discovery Program records because counts for International Ocean Drilling Program publications are still low.

Publications from top-ranking peer-reviewed journals

Database records indicate that 10,627 Program-related papers have been published in non-Program, primarily peer-reviewed serial publications. A total of 5,697 of these research papers (more than 50% of the serial publications in the database) were published in 30 highly rated peer-reviewed journals, based on Thompson/Reuters ISI impact factor (see Figure 2). Starting in 1996, ODP permitted scientists to fulfill their ODP publication obligation by publishing postcruise research results in English language peer-reviewed journals. Approximately 75% of the papers illustrated in Figure 2 are Program-related research results that have been published in top-rated journals since 1996, the year the publication policy change took effect.

Figure 2. Highly rated peer-reviewed serials publishing Program-related expedition research results (1969–2017). Thompson/Reuters impact factor is given in parenthesis for each title.



Publications by authors from current member countries

Of the 10,627 Program-related papers published in serial publications, 9,332 (88%) are first-authored by scientists from current IODP member countries (Table 1). First authors are those who are listed first in

the authorship of a paper. Contributing authors are those listed after the first authors. In Table 1, "Serial contributions by country" shows the number of serial papers for which each country's researchers are listed as contributing authors. The country is counted once per paper regardless of the number of authors from that country. "Serial contributions by author" shows the number of times researchers from each country are listed as contributing authors, including multiple contributors from a single country per paper. The column "Total contributions" shows the total number of times researchers from each country are included in the authorship of peer-reviewed serials, including first and contributing authors and multiple contributors from a single country per paper.

Table 1. Serial publication authorship by first author, contributing country, contributing authors, and total contributions (1969–2017).

Member country or consortia	First authors of serials	Serial contributions by country	Serial contributions by author	Total contributions
Australia/New Zealand Consortium	298	273	330	628
Australia	173	180	205	378
New Zealand	125	93	125	250
Brazil	20	17	18	38
China	363	125	155	518
ECORD	3,967	3,073	3,941	7,908
Austria	13	18	18	31
Belgium	43	43	47	90
Canada	318	224	274	592
Denmark	48	70	74	122
Finland	8	6	6	14
France	595	496	694	1,289
Germany	940	620	814	1,754
Ireland	5	13	15	20
Israel	21	6	6	27
Italy	260	217	277	537
Netherlands	206	139	151	357
Norway	134	112	127	261
Poland	16	4	4	20
Portugal	10	26	29	39
Spain	137	141	177	314
Sweden	100	80	80	180
Switzerland	129	108	117	246
United Kingdom	984	750	1,031	2,015
India	168	33	34	202
Japan	651	537	1,260	1,911
Republic of Korea	42	45	50	92
United States	3,823	1,663	3,427	7,250
Total papers:	**9,332**			**18,547**

Table 2 expands on the first author column reported in the table above to show the breakdown of first author country or consortium affiliation for all non-Program publication types in the database. Note that theses and dissertations are underreported to AGI and are not fully represented.

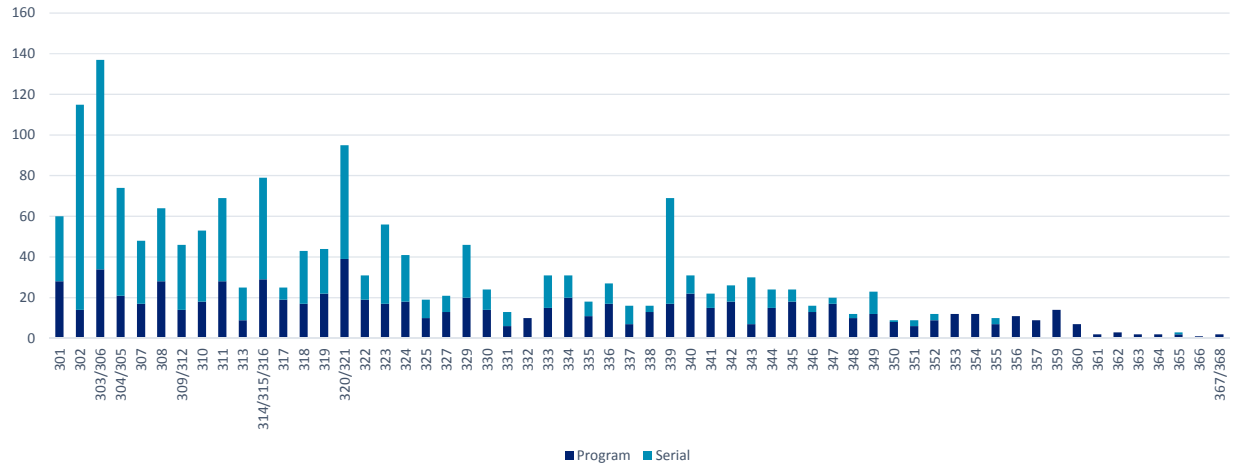
Table 2. Serial publication authorship by first author, contributing country, contributing authors, and total contributions (1969–2017).

Member country or consortia	Serials	Misc.	Theses and dissertations		
			B.S.	M.S.	Ph.D.
Australia/New Zealand Consortium	298	308	4	6	3
Brazil	20	21	0	0	0
China	363	49	0	0	0
ECORD	3,967	3,478	14	17	100
India	168	30	0	3	3
Japan	651	428	0	0	0
Republic of Korea	42	18	0	0	0
United States	3,823	4,988	24	226	307
Totals:	**9,332**	**9,320**	**42**	**252**	**413**

Publications by expedition

Figure 3 shows Program (Expedition Reports, post-expedition research data reports, and *Scientific Drilling* papers) and non-Program serial publications for all completed Integrated Ocean Drilling Program and IODP expeditions at the end of June 2017 (Expeditions 301–368). Note that the publication tail for postcruise expedition research in both Program and serial publications extends for several years after the end of the expedition; hence, more recent expeditions have fewer publications credited to them, as illustrated in the figure.

Figure 3. Publication records for Expeditions 301–368 (2003–2017).



Publications by Science Plan theme

Figure 4 shows Program and non-Program (all types) records related to Integrated Ocean Drilling Program expeditions (Expeditions 301–348) and sorted by Integrated Ocean Drilling Program Initial Science Plan themes. Initial Science Plan themes are tied to the primary objectives of each expedition as listed in *Developments in Marine Geology 7: Earth and Life Processes Discovered from Subseafloor Environments (A Decade of Science Achieved by the Integrated Ocean Drilling Program [IODP])*.

- Deep Biosphere: Expeditions 308, 313, 314/315/316, 319, 332–336, 339, 341, and 342.
- Environmental Change, Processes and Effects: Expeditions 309/312, 310, 318, 320/321, 323, 324, 330, 344, 346, and 347.
- Solid Earth Cycles and Geodynamics: Expeditions 311, 317, 322, 325, 357, 329, 331, 337, 338, 340, 343, and 345.

Figure 4. Integrated Ocean Drilling Program publication records by Initial Science Plan theme (2006–2017).

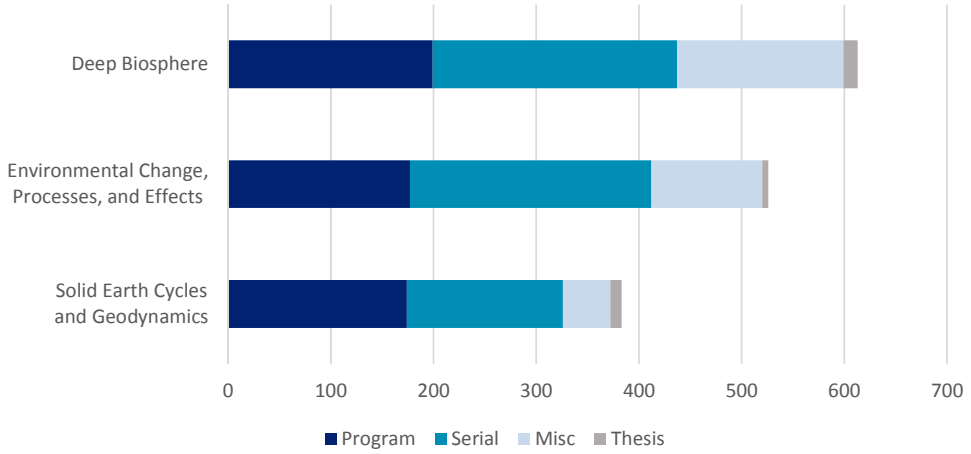
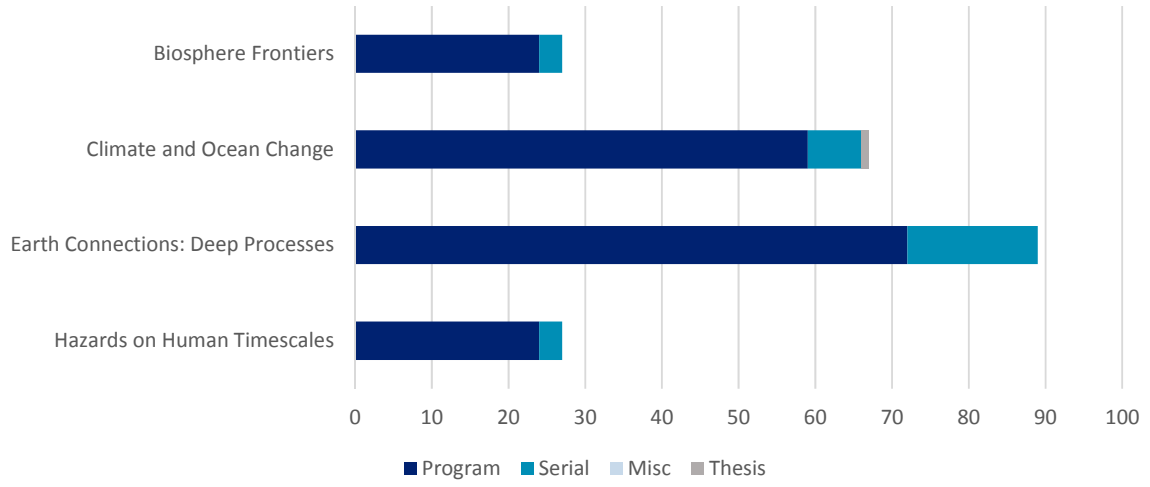


Figure 5 shows Program and non-Program (all types) serial, miscellaneous, and thesis/dissertation publication records related to IODP (Expeditions 349–365) and sorted by IODP Science Plan themes.

- Biosphere Frontiers: Expeditions 357, 360, and 364.
- Climate and Ocean Change: Expeditions 353–356, 359, 361, 363, and 369.
- Earth Connections: Deep Processes: Expeditions 349–352, 355, 360, and 366–368.
- Hazards on Human Timescales: Expeditions 357, 362, and 365.

Figure 5. International Ocean Discovery Program publication records by Science Plan theme (2013–2017).



Cited-by statistics

As indexing and interconnectivity of scientific research results increase, we are better able to illustrate through "cited-by" data how often scientific publications are cited in other research articles. Cited-by data, in the form of number of times an article has been cited, can be accrued through several venues: Science Direct, SCOPUS, CrossRef, Web of Science, Web of Knowledge, and others. Comprehensive cited-by results are unavailable at this time, as not all publishers utilize cited-by data compilers. For this report, we collected cited-by data in July 2017 through Google Scholar (which seems to have the most comprehensive data). Review of these cited-by data shows that Program publications and non-Program serial publications containing research results from Integrated Ocean Drilling Program and IODP expeditions have been cited in other research articles more than 27,000 times between 2003 and 2017. Figure 6 includes available cited-by counts for Expeditions 301–345.

Figure 6. Number of times Program or non-Program serial publications from Integrated Ocean Drilling Program and IODP expeditions were cited by other research articles (2003–2016).

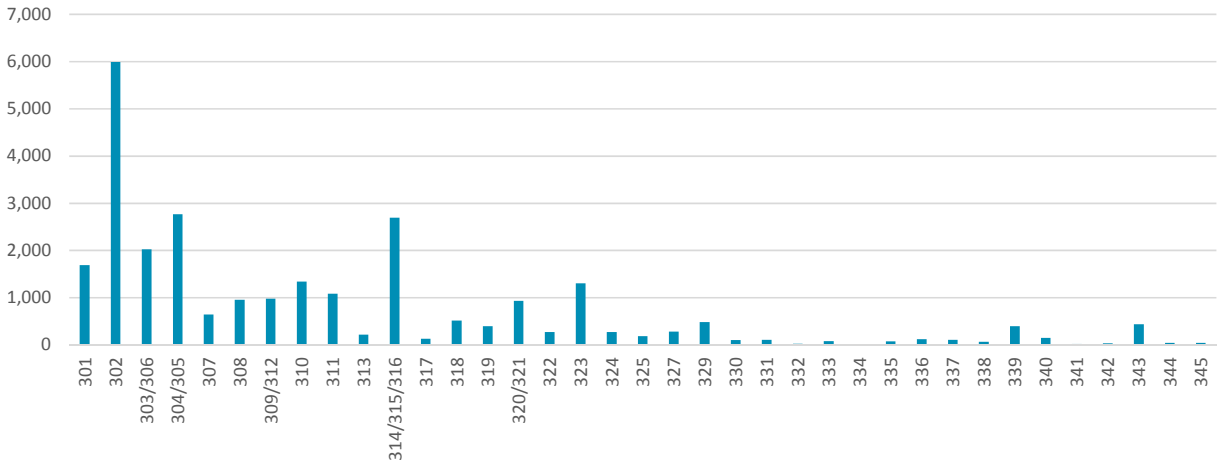


Table 3 lists the IODP expedition–related papers that have been most cited as of July 2017. As mentioned above, it takes several years for papers to be published, and even more time for them to build up a high cited-by number; all of the most-cited papers are related to volumes published in 2011 or before. Most of them are in the top journals by impact factor, as shown in Figure 2.

Table 3. Top cited IODP expedition–related papers as of July 2017.

Expedition	Expedition-related paper (DOI)	Times cited
301	https://doi.org/10.1038/nature07174	417
302	https://doi.org/10.1038/nature04668	508
	https://doi.org/10.1038/nature04800	458
	https://doi.org/10.1029/2008GL033520	402
303/306	https://doi.org/10.1016/j.epsl.2005.06.020	276
304/305	https://doi.org/10.1093/petrology/egm021	249
309/312	https://doi.org/10.1126/science.1126090	153
310	https://doi.org/10.1038/nature10902	261
	https://doi.org/10.1126/science.1180557x	215
314/315/316	https://doi.org/10.1126/science.1147195	269
319	https://doi.org/10.1146/annurev-earth-040610-133408	149
323	https://doi.org/10.1073/pnas.1203849109	299

In 2013, IODP instituted a web-based cited-by linking function that parses metadata from CrossRef's Cited-by Linking service to provide links from *Proceedings* table of contents pages to scientific articles or books that cite a Program publication. Cited-by results are continually updated (http://publications.iodp.org). Note that these cited-by results include cites only from publishers that participate in CrossRef DOI services. Cited-by statistics for Program and non-Program publications can also be found at Science Open (http://ScienceOpen.com).

Customized reports

IODP funding agencies, implementing organizations, program member offices, and individual member countries may request customized reports that may include combinations of publication data organized by

- Country or consortia;
- Program (DSDP, ODP, Integrated Ocean Drilling Program, or IODP);
- Leg, expedition, complex science program, or geographic area;
- Publication year; or
- Specific serial publication.

To request a customized report, contact Citations@iodp.tamu.edu.