

# PIDs and Metadata





[https://orcid.org/  
0000-0002-1201-3114](https://orcid.org/0000-0002-1201-3114)


**Keywords** >

Vigilance and Nightly Motion Lecturer,  
CEO & Co-Owner of Wayne Enterprises,  
Wayne Foundation, Philantropist

**Countries** >

USA

 Is this you? [Sign in to start editing](#)

 Printable version

Name

**Bruce Wayne**

**Activities**

[Collapse all](#)

 **Employment (3)**

 Sort

**Institute for Vigilance and Nightly Motion - Justice League: Gotham City, New Jersey, USA**

1955-08-15 to present | Research Associate, Lecturer in Nightly Motion  
Employment

[Show more detail](#)

**Source:**  Bruce Wayne

**Wayne Enterprises: Gotham City, New Jersey, USA**

1939-03-30 to present | CEO, Co-Owner  
Employment

[Show more detail](#)

**Source:**  Bruce Wayne

**Wayne Foundation Gotham City, New Jersey, USA**

1945-04-01 to present | General Secretary  
Employment

[Show more detail](#)

Search...



https://orcid.org/  
0000-0002-1201-3114

Is this you? [Sign in to start editing](#)

Printable version

Name

**Bruce Wayne**

Activities

Collapse all

Keywords

Vigilance and Nightly Motion Lecturer,  
CEO & Co-Owner of Wayne Enterprises,  
Wayne Foundation, Philanthropist

Countries

Employment (3)

Sort

**Institute for Vigilance and Nightly Motion - Justice League: Gotham City, New Jersey, USA**

1955-08-15 to present | Research Associate, Lecturer in Nightly Motion  
Employment

[Show more detail](#)



The **ORCID ID** is a **unique and persistent identifier** for researchers, that comes with a **set of professionally relevant information** about the person.

[Show more detail](#)

[Show more detail](#)

Employment



to the profile page to start editing

Profile owner



The **ORCID iD**: a unique, persistent identifier free of charge to researchers



An **ORCID record** connected to the ORCID iD, and



A set of **Application Programming Interfaces (APIs)**, as well as the services and support of communities of practice that enable interoperability between an ORCID record and member organizations so researchers can choose to allow connection of their iD with their affiliations and contributions

1988-09-01 to present | ORCID Co-Chair  
Employment

Show more about

Source: ORCID

Wayne Foundation | South Plain City, New Jersey, USA

1988-09-01 to present | General Secretary  
Employment

Show more about



[https://orcid.org/  
0000-0002-1201-3114](https://orcid.org/0000-0002-1201-3114)


**Keywords** >

Vigilance and Nightly Motion Lecturer,  
CEO & Co-Owner of Wayne Enterprises,  
Wayne Foundation, Philanthropist

**Countries** >

USA

 Is this you? [Sign in to start editing](#)

 Printable version

Name

**Bruce Wayne**

**Activities**

[Collapse all](#)

 **Employment (3)**

 Sort

**Institute for Vigilance and Nightly Motion - Justice League: Gotham City, New Jersey, USA**

1955-08-15 to present | Research Associate, Lecturer in Nightly Motion  
Employment

[Show more detail](#)

**Source:**  Bruce Wayne

**Wayne Enterprises: Gotham City, New Jersey, USA**

1939-03-30 to present | CEO, Co-Owner  
Employment

[Show more detail](#)

**Source:**  Bruce Wayne

**Wayne Foundation Gotham City, New Jersey, USA**

1945-04-01 to present | General Secretary  
Employment

[Show more detail](#)





# PIDs can be used as identifiers

”creator” : “https://orcid.org/0000-0002-1201-3114”

## ORCiD Metadata

```
1  {
2    "creator": {
3      "given-names": "Bruce",
4      "family-name": "Wayne",
5      "credit-name": "Bruce Wayne",
6      "other-names": "Batman",
7      "researcher-urls": [
8        {
9          "type": "researcher-url",
10         "url": "https://x.com/characters/batman",
11         "url-name": "Justice League",
12       },
13       {
14         "type": "researcher-url",
15         "url": "https://twitter.com/Batman",
16         "url-name": "Twitter",
17       }
18     ],
19     "email": [
20       "b.wayne@lva.gotham.com",
21       "batman@justice-league.org",
22     ],
23     "address": {
24       "country": "USA",
25       "state": "New Jersey",
26       "city": "Gotham City",
27       "zip-code": "08903",
28       "street": "Wayne Rd 1",
29     },
30     "employment": [
31       {
32         "department-name": "Institute for Vigilance and Nightly Action",
33         "start-date": {
34           "year": 1993,
35           "month": 08,
36           "day": 15,
37         },
38         "organization": {
39           "name": "Justice League",
40           "address": {
41             "city": "Gotham City",
42             "region": "New Jersey",
43             "country": "USA",
44             "is-an-quoted-organization-identifier": "https://ror.org/095118",
45           }
46         },
47         "department-name": "Board of Leaders",
48         "start-date": {
49           "year": 1939,
50           "month": 09,
51           "day": 30,
52         },
53         "organization": {
54           "name": "Wayne Enterprises",
55           "address": {
56             "city": "Gotham City",
57             "region": "New Jersey",
58             "country": "USA",
59             "is-an-quoted-organization-identifier": "https://ror.org/04ue50",
60           }
61         },
62         "department-name": "Executive Office",
63         "start-date": {
64           "year": 1965,
65           "month": 14,
66           "day": 01,
67         },
68         "organization": {
69           "name": {
70             "city": "Gotham City",
71             "region": "New Jersey",
72             "country": "USA",
73             "is-an-quoted-organization-identifier": "https://ror.org/02eod4",
74           }
75         }
76       ]
77     }
78   }
79 }
80 }
```

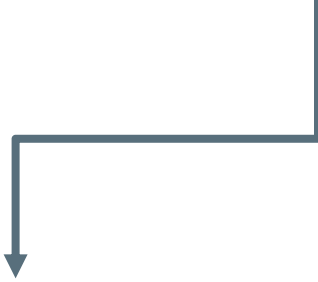


# PIDs can be used as identifiers

”creator” : “https://orcid.org/0000-0002-1201-3114”

## ORCiD Metadata

```
1  "creator": {
2    "given-names": "Bruce",
3    "family-name": "Wayne",
4    "credit-name": "Bruce Wayne",
5    "other-names": "Batman",
6    "researcher-urls": [
7      {
8        "type": "researcher-url",
9        "url": "https://x.com/characters/batman",
10       "url-name": "Justice League",
11     },
12     {
13       "type": "researcher-url",
14       "url": "https://twitter.com/Batman",
15       "url-name": "Twitter"
16     }
17   ],
18   "email": [
19     "b.wayne@lva.gotham.com",
20     "batman@justice-league.org",
21     "address": {
22       "country": "USA",
23       "state": "New Jersey",
24       "city": "Gotham City",
25       "zip-code": "08903",
26       "street": "Wayne Rd 1"
27     }
28   ],
29   "employment": [
30     {
31       "department-name": "Institute for Vigilance and Nightly Action",
32       "start-date": {
33         "year": 1993,
34         "month": 08,
35         "day": 15
36       },
37       "organization": {
38         "name": "Justice League",
39         "address": {
40           "city": "Gotham City",
41           "region": "New Jersey",
42           "country": "USA",
43           "is-ambiguous-organization-identifier": "https://ror.org/09518"
44         }
45       }
46     },
47     {
48       "department-name": "Board of Leaders",
49       "start-date": {
50         "year": 1939,
51         "month": 09,
52         "day": 30
53       },
54       "organization": {
55         "name": "Wayne Enterprises",
56         "address": {
57           "city": "Gotham City",
58           "region": "New Jersey",
59           "country": "USA",
60           "is-ambiguous-organization-identifier": "https://ror.org/04ue5"
61         }
62       }
63     },
64     {
65       "department-name": "Executive Office",
66       "start-date": {
67         "year": 1965,
68         "month": 04,
69         "day": 01
70       },
71       "organization": {
72         "name": {
73           "city": "Gotham City",
74           "region": "New Jersey",
75           "country": "USA",
76           "is-ambiguous-organization-identifier": "https://ror.org/02bo"
77         }
78       }
79     }
80   ]
81 }
82 }
```

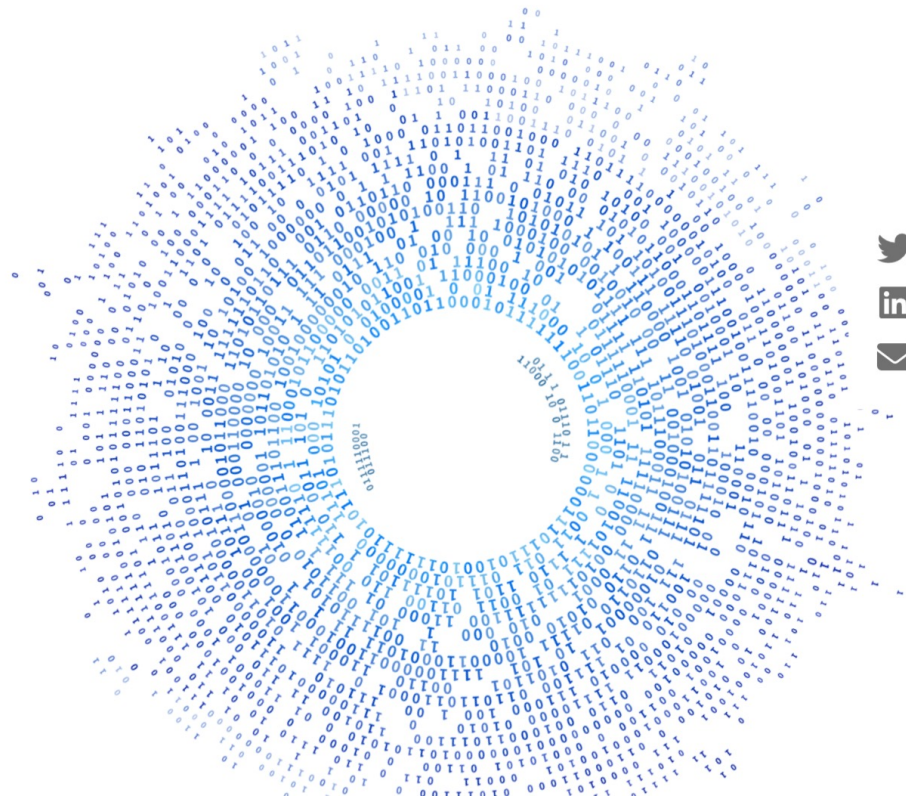




The DOI Foundation is a not-for-profit organization. We govern the Digital Object Identifier (DOI) system on behalf of the agencies who manage DOI registries and provide services to their respective communities. We are the registration authority for the ISO standard (ISO 26324) for the DOI system and we are governed by our Registration Agencies.

Read more about us, our operations and our community of communities from construction to entertainment to scholarly research.

**LEARN MORE** →





# PIDs can be used as identifiers


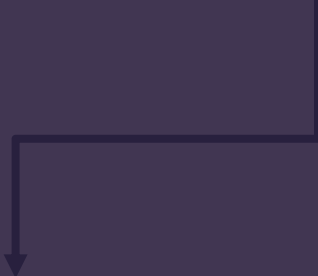
”creator” : “https://orcid.org/0000-0002-1201-3114”

## ORCiD Metadata

```

10  "creator": "https://orcid.org/0000-0002-1201-3114",
11  "affiliation": "University of California, Berkeley",
12  "name": "John Doe",
13  "email": "john.doe@berkeley.edu",
14  "url": "https://orcid.org/0000-0002-1201-3114",
15  "photo": "https://orcid.org/photos/0000-0002-1201-3114",
16  "work": [
17    {
18      "type": "journal-article",
19      "title": "The impact of climate change on the environment",
20      "url": "https://doi.org/10.1000/12345678",
21      "date": "2023-01-01",
22      "publisher": "Springer",
23      "volume": "123",
24      "issue": "4",
25      "page": "1-10"
26    },
27    {
28      "type": "journal-article",
29      "title": "The impact of climate change on the environment",
30      "url": "https://doi.org/10.1000/12345678",
31      "date": "2023-01-01",
32      "publisher": "Springer",
33      "volume": "123",
34      "issue": "4",
35      "page": "1-10"
36    }
37  ]
38  "work-summary": [
39    {
40      "type": "journal-article",
41      "title": "The impact of climate change on the environment",
42      "url": "https://doi.org/10.1000/12345678",
43      "date": "2023-01-01",
44      "publisher": "Springer",
45      "volume": "123",
46      "issue": "4",
47      "page": "1-10"
48    }
49  ]
50  "work-ids": [
51    {
52      "type": "journal-article",
53      "url": "https://doi.org/10.1000/12345678",
54      "date": "2023-01-01",
55      "publisher": "Springer",
56      "volume": "123",
57      "issue": "4",
58      "page": "1-10"
59    }
60  ]
61  "work-ids-external": [
62    {
63      "type": "journal-article",
64      "url": "https://doi.org/10.1000/12345678",
65      "date": "2023-01-01",
66      "publisher": "Springer",
67      "volume": "123",
68      "issue": "4",
69      "page": "1-10"
70    }
71  ]
72  "work-ids-internal": [
73    {
74      "type": "journal-article",
75      "url": "https://doi.org/10.1000/12345678",
76      "date": "2023-01-01",
77      "publisher": "Springer",
78      "volume": "123",
79      "issue": "4",
80      "page": "1-10"
81    }
82  ]
83  "work-ids-external-ids": [
84    {
85      "type": "journal-article",
86      "url": "https://doi.org/10.1000/12345678",
87      "date": "2023-01-01",
88      "publisher": "Springer",
89      "volume": "123",
90      "issue": "4",
91      "page": "1-10"
92    }
93  ]
94  "work-ids-internal-ids": [
95    {
96      "type": "journal-article",
97      "url": "https://doi.org/10.1000/12345678",
98      "date": "2023-01-01",
99      "publisher": "Springer",
100     "volume": "123",
101     "issue": "4",
102     "page": "1-10"
103   }
104 ]

```



When your **personal information changes** (e.g. new affiliation, new name, new contact), the **ORCiD stays valid** and will resolve to the updated metadata record.



- PIDs ensure **sustainable retrievability** of any kind of web resource
- PIDs are **connected to metadata records** describing the resource and can be used to unambiguously identify objects on the Web

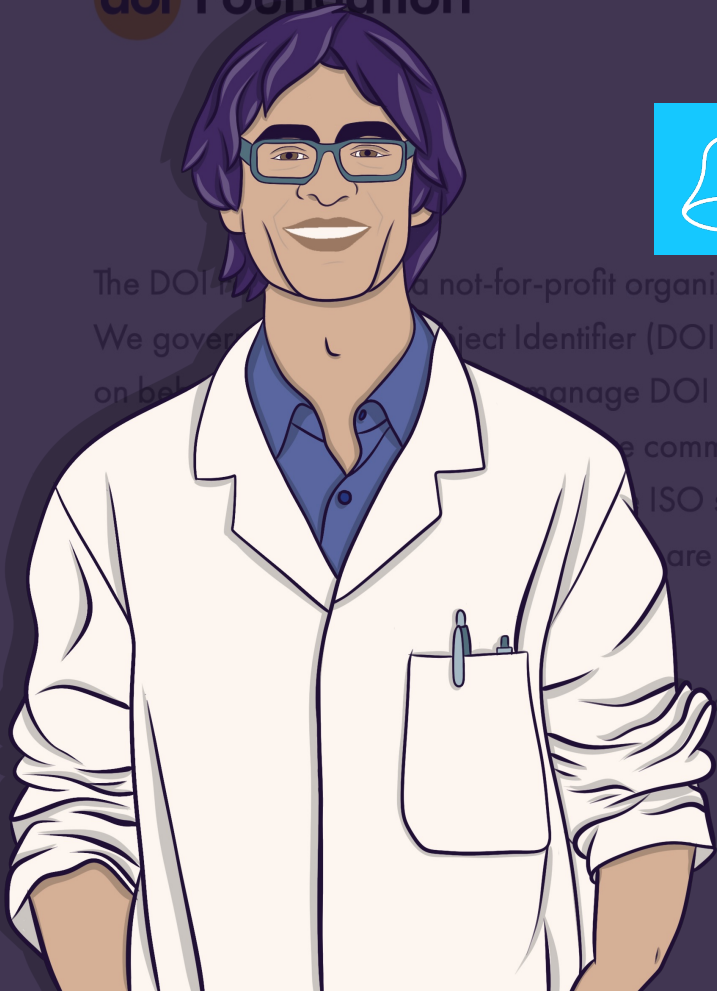
The DOI Foundation is a not-for-profit organization. We govern the Digital Object Identifier (DOI) system on behalf of the agencies who manage DOI registries and provide services to their respective communities.

We are the registration authority for the ISO standard (ISO 26324) for the DOI system and we are governed by our Registration Agencies.

Read more about us, our operations and our community of communities from construction to entertainment to scholarly research.

[LEARN MORE →](#)





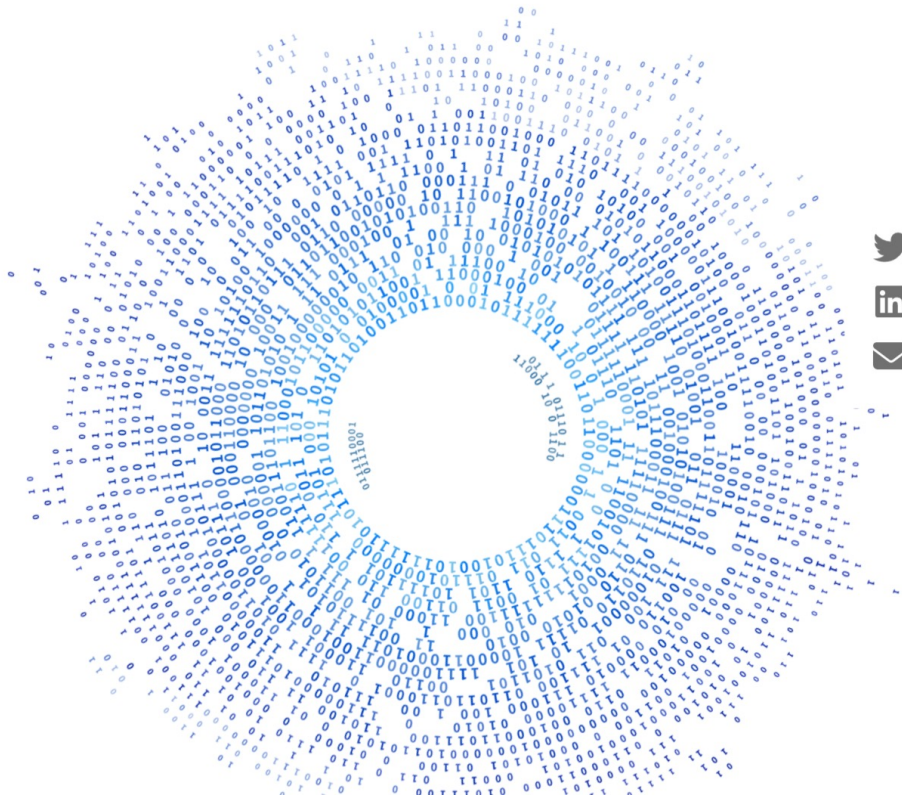
- PIDs ensure **sustainable retrievability** of any kind of web resource
- PIDs are **connected to metadata records** describing the resource and can be used to unambiguously identify objects on the Web



The DOI Foundation is a not-for-profit organization. We govern the Digital Object Identifier (DOI) system on behalf of the agencies who manage DOI registries and provide services to their respective communities. We are the registration authority for the ISO standard (ISO 26324) for the DOI system and we are governed by our Registration Agencies.

Read more about us, our operations and our community of communities from construction to entertainment to scholarly research.

**LEARN MORE** →







## Collective Motion of Humans in Mosh and Circle Pits at Heavy Metal Concerts

Jesse L. Silverberg,<sup>\*</sup> Matthew Bierbaum, James P. Sethna, and Itai Cohen

*Department of Physics and Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, New York 14853, USA*

(Received 13 February 2013; published 29 May 2013)

Human collective behavior can vary from calm to panicked depending on social context. Using videos publicly available online, we study the highly energized collective motion of attendees at heavy metal concerts. We find these extreme social gatherings generate similarly extreme behaviors: a disordered gaslike state called a *mosh pit* and an ordered vortexlike state called a *circle pit*. Both phenomena are reproduced in flocking simulations demonstrating that human collective behavior is consistent with the predictions of simplified models.

DOI: [10.1103/PhysRevLett.110.228701](https://doi.org/10.1103/PhysRevLett.110.228701)

PACS numbers: 89.65.Ef, 47.32.-y, 87.15.Zg, 87.23.Cc

Human collective behaviors vary considerably with social context. For example, lane formation in pedestrian traffic [1], jamming during escape panic [2], and Mexican waves at sporting events [3] are emergent phenomena that have been observed in specific social settings. Here, we study large crowds ( $10^2$ – $10^5$  attendees) of people under the extreme conditions typically found at heavy metal concerts [4]. Often resulting in injuries [5], the collective mood is influenced by the combination of loud (130 dB [6]), fast

Fig. 2, the decay length was  $0.39 \pm 0.03$  m, which is approximately human shoulder width. Taken together, these findings offer strong support for the analogy between mosh pits and gases. As a further check, we examined the 2D speed distribution. Previous observations of human pedestrian traffic and escape panic led us to expect a broad distribution not well described by simple analytic expressions [2,13]. However, the measured speed distribution in mosh pits was well fit by the 2D Maxwell-Boltzmann



## Collective Motion of Humans in Mosh and Circle Pits at Heavy Metal Concerts

Jesse L. Silverberg,\* Matthew Bierbaum, James P. Sethna, and Itai Cohen

*Department of Physics and Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, New York 14853, USA*

(Received 13 February 2013; published 29 May 2013)

Human collective behavior can vary from calm to panicked depending on social context. Using videos publicly available online, we study the highly energized collective motion of attendees at heavy metal concerts. We find these extreme social gatherings generate similarly extreme behaviors: a disordered gaslike state called a *mosh pit* and an ordered vortexlike state called a *circle pit*. Both phenomena are reproduced in flocking simulations demonstrating that human collective behavior is consistent with the predictions of simplified models.

DOI: 10.1103/PhysRevLett.110.228701

PACS numbers: 89.65.Ef, 47.32.-y, 87.15.Zg, 87.23.Cc

Human collective behaviors vary considerably with social context. For example, lane formation in pedestrian traffic [1], jamming during escape panic [2], and Mexican waves at sporting events [3] are emergent phenomena that have been observed in specific social settings. Here, we study large crowds ( $10^2$ – $10^5$  attendees) of people under the extreme conditions typically found at heavy metal concerts [4]. Often resulting in injuries [5], the collective mood is influenced by the combination of loud (130 dB [6]), fast

Fig. 2, the decay length was  $0.39 \pm 0.03$  m, which is approximately human shoulder width. Taken together, these findings offer strong support for the analogy between mosh pits and gases. As a further check, we examined the 2D speed distribution. Previous observations of human pedestrian traffic and escape panic led us to expect a broad distribution not well described by simple analytic expressions [2,13]. However, the measured speed distribution in mosh pits was well fit by the 2D Maxwell-Boltzmann

DOI Records

Demonstration





```
2   "status": "ok",
3   "message-type": "work",
4   "message-version": "1.0.0",
5   "message": {
6     "indexed": {
7       "date-parts": [
8         [
9           2023,
10          10,
11          12
12        ]
13      ],
14      "date-time": "2023-10-12T10:24:41Z",
15      "timestamp": 1697106281178
16    },
17    "reference-count": 31,
18    "publisher": "American Physical Society (APS)",
19    "issue": "22",
20    "license": [
21      {
22        "start": {
23          "date-parts": [
24            [
25              2013,
26              5,
27              29
28            ]
29          ],
30          "date-time": "2013-05-29T00:00:00Z",
31          "timestamp": 1369785600000
32        },
33        "content-version": "vor",
34        "delay-in-days": 0,
35        "URL": "http://link.aps.org/licenses/aps-default-license"
36      }
37    ],
38    "content-domain": {
39      "domain": [],
40      "crossmark-restriction": false
41    },
42    "short-container-title": [
```

```
43     "Phys. Rev. Lett."
44   ],
45   "DOI": "10.1103/physrevlett.110.228701",
46   "type": "journal-article",
47   "created": {
48     "date-parts": [
49       [
50         2013,
51         5,
52         30
53       ]
54     ],
55     "date-time": "2013-05-30T05:08:06Z",
56     "timestamp": 1369890486000
57   },
58   "source": "Crossref",
59   "is-referenced-by-count": 118,
60   "title": [
61     "Collective Motion of Humans in Mosh and Circle Pits at Heavy Metal Concerts"
62   ],
63   "prefix": "10.1103",
64   "volume": "110",
65   "author": [
66     {
67       "given": "Jesse L.",
68       "family": "Silverberg",
69       "sequence": "first",
70       "affiliation": []
71     },
72     {
73       "given": "Matthew",
74       "family": "Bierbaum",
75       "sequence": "additional",
76       "affiliation": []
77     },
78     {
79       "given": "James P.",
80       "family": "Sethna",
81       "sequence": "additional",
82       "affiliation": []
83     },
84     {
85       "given": "Tara",
86       "family": "Sethna",
87       "sequence": "additional",
88       "affiliation": []
89     },
90     {
91       "given": "Tara",
92       "family": "Sethna",
93       "sequence": "additional",
94       "affiliation": []
95     },
96     {
97       "given": "Tara",
98       "family": "Sethna",
99       "sequence": "additional",
100      "affiliation": []
101    }
102  ]
103 }
```

```
1 {
2   "status": "ok",
3   "message-type": "work",
4   "message-version": "1.0.0",
5   "message": {
6     "indexed": {
7       "date-parts": [
8         [
9           2023,
10          10,
11          12
12        ]
13      ],
14      "date-time": "2023-10-12T10:24:41Z",
15      "timestamp": 1697106281178
16    },
17    "reference-count": 31,
18    "publisher": "American Physical Society (APS)",
19    "issue": "22",
20    "license": [
21      {
22        "start": {
23          "date-parts": [
24            [
25              2013,
26              5,
27              29
28            ]
29          ],
30          "date-time": "2013-05-29T00:00:00Z",
31          "timestamp": 1369785600000
32        },
33        "content-version": "vor",
34        "delay-in-days": 0,
35        "URL": "http://link.aps.org/licenses/aps-default-license"
36      }
37    ],
38    "content-domain": {
39      "domain": [],
40      "crossmark-restriction": false
41    },
42    "short-container-title": [
```

```
43     "Phys. Rev. Lett."
44   ],
45   "DOI": "10.1103/physrevlett.110.228701",
46   "type": "journal-article",
47   "created": {
48     "date-parts": [
49       [
50         2013,
51         5,
52         30
53       ]
54     ],
55     "date-time": "2013-05-30T05:08:06Z",
56     "timestamp": 1369890486000
57   },
58   "source": "Crossref",
59   "is-referenced-by-count": 118,
60   "title": [
61     "Collective Motion of Humans in Mosh and Circle Pits at Heavy Metal Concerts"
62   ],
63   "prefix": "10.1103",
64   "volume": "110",
```



## PID Records

- are stored at the PID resolver
- hold machine-readable information
- support machine-actionability for interoperability

```
80     "family": "Sethna",
81     "sequence": "additional",
82     "affiliation": []
83   },
84   {
85     "family": "APS",
```

Questions?



# DISCLAIMER

This slide deck is part of the Lesson

**Fundamentals of Scientific Metadata:  
Why Context Matters**

published on **The Carpentries Incubator**.

**Please cite this presentation as:**

Gerlich, S., Strupp, A., Hofmann, V., Sandfeld, S. (2023).  
*Fundamentals of Scientific Metadata: Why Context Matters*.  
The Carpentries Incubator. DOI: [10.5281/zenodo.10091708](https://doi.org/10.5281/zenodo.10091708)

You can find more information about this course on [Github](https://github.com).



image:  
[https://c.pxhere.com/photos/35/f5/coffee\\_notebook\\_wooden\\_backgroud\\_orange\\_work\\_table\\_office-1222115.jpgld](https://c.pxhere.com/photos/35/f5/coffee_notebook_wooden_backgroud_orange_work_table_office-1222115.jpgld)