

2023 SIAG/ACDA

SIAM Conference on Applied and Computational Discrete Algorithms

Co-located with the SIAM Conference on Optimization

Activity Group on Applied and Computational Discrete Algorithms Business Meeting

Thursday, June 1st, 6:30 - 7:30 pm PDT
Aspen, 2nd floor
The Sheraton Grand Seattle
Seattle, Washington U.S.

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Applied & Computational
Discrete Algorithms

2023 SIAG/ACDA BUSINESS MEETING

SIAG/ACDA Welcome

SIAM President

Sven Leyffer, Argonne National Laboratory

SIAG/ACDA Officers



Chair:

Blair D. Sullivan, University of Utah

*

Vice Chair:

Michael Bender, Stony Brook University

*

Program Director:

Bora Uçar, CNRS, ENS de Lyon

*

Secretary:

Kathrin Hanauer, University of Vienna



SIAG/ACDA Thank you to all 2021-2022 Officers

Chair:

Cynthia Phillips, Sandia National Laboratory

*

Vice Chair:

Henning Meyerhenke, HU Berlin

*

Program Director:

Uwe Naumann, RWTH Aachen

*

Secretary:

Bora Uçar, CNRS, ENS de Lyon

2023 SIAG/ACDA

State of the SIAG

(data as of December 31, 2022)

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SIAG/ACDA SIAM Fellows

Class of 2022

Bonnie Berger

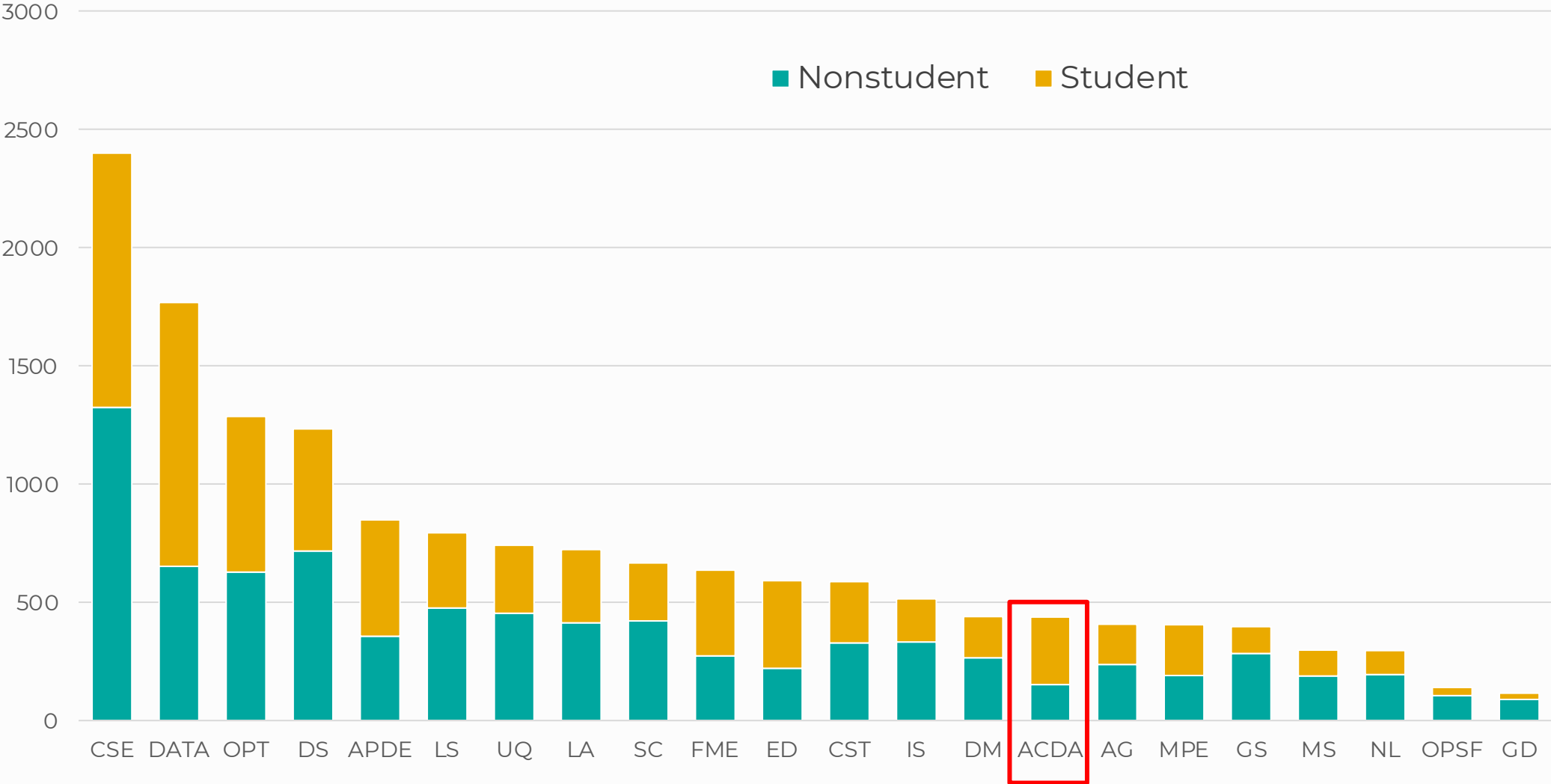
Class of 2023

Lenore Cowen

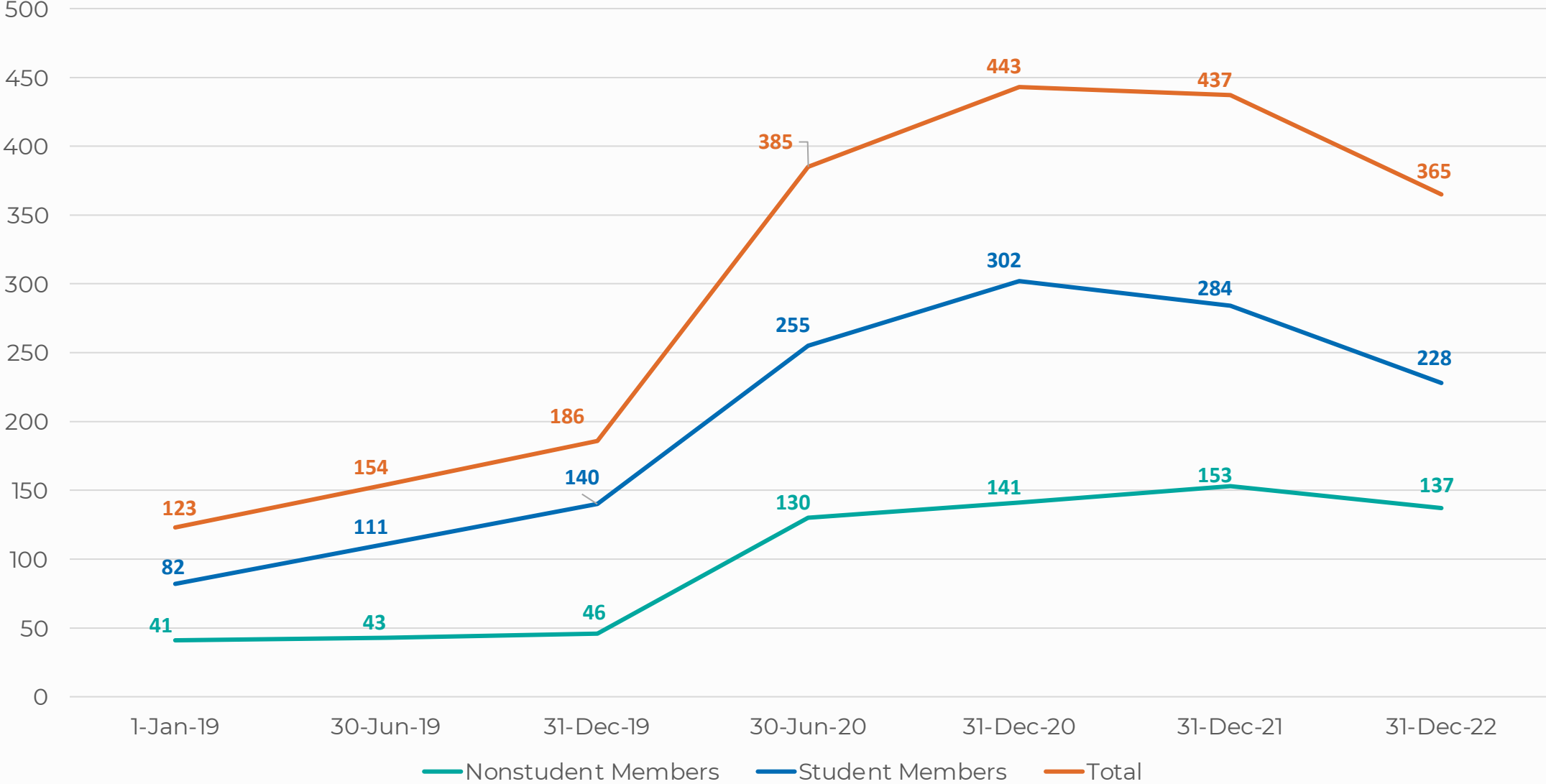
Ali Pinar

Sivan Toledo

SIAG Overall Membership



SIAG/ACDA Membership Demographics

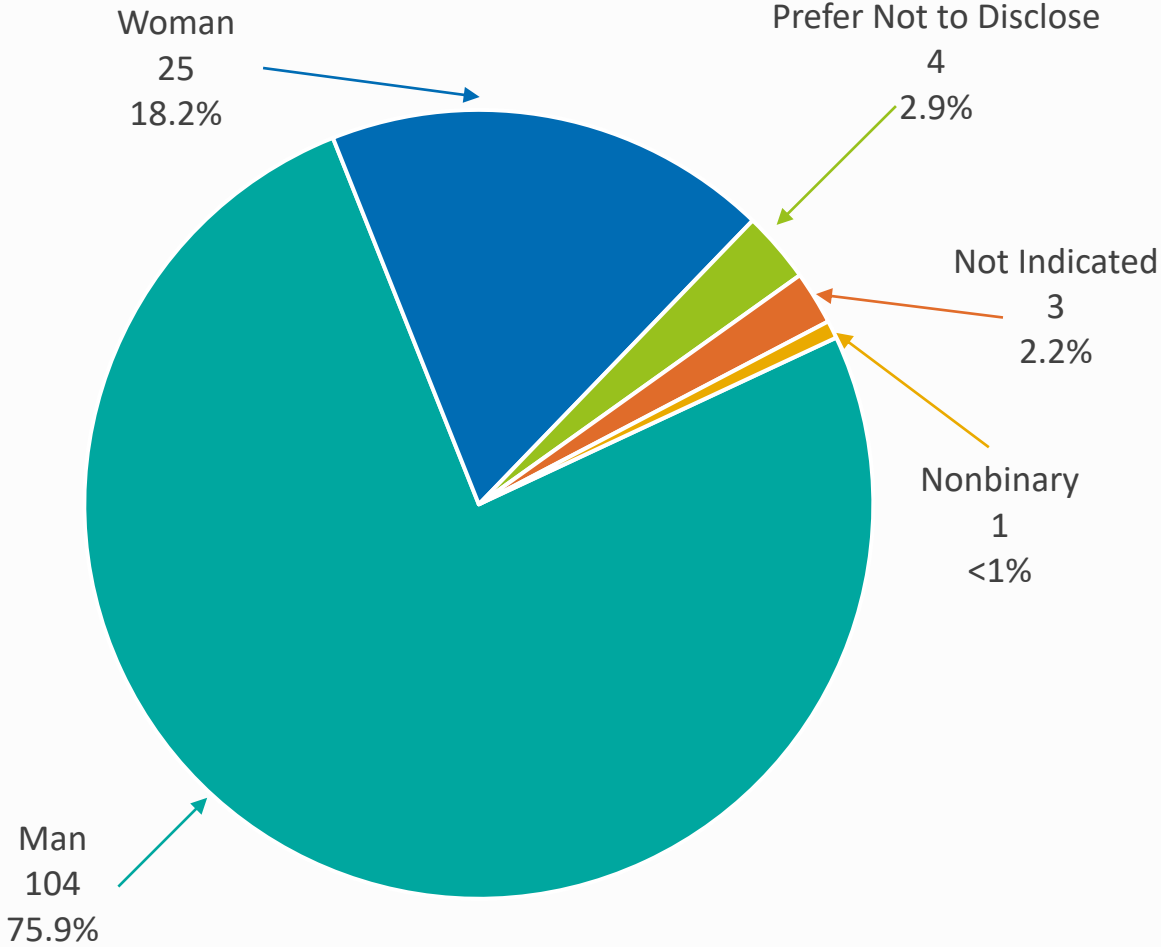


SIAG/ACDA Membership by Geography

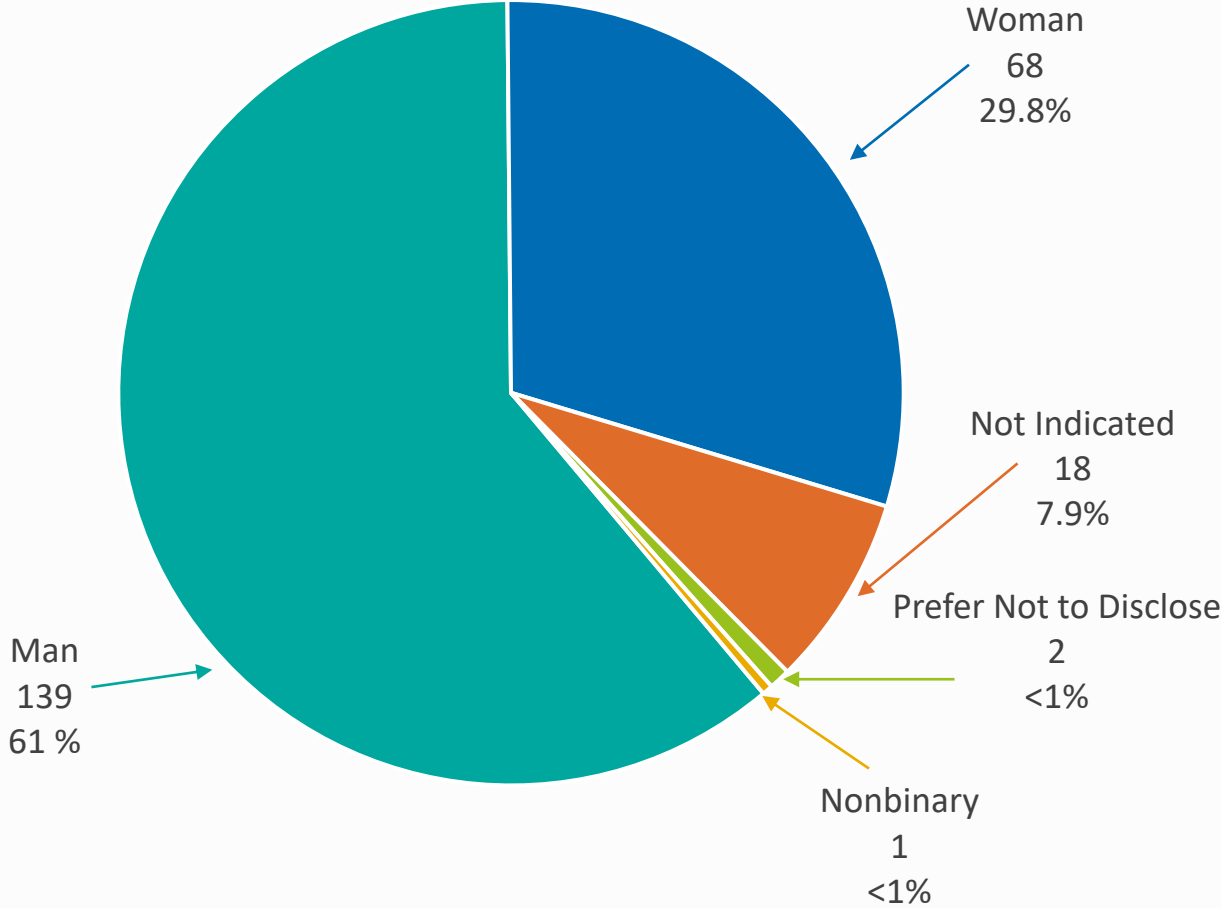
| | US | | Non-US | | Total | |
|------------|-----|-------|--------|-------|-------|-------|
| Nonstudent | 100 | 27.4% | 27 | 10.1% | 137 | 37.5% |
| Student | 159 | 43.6% | 69 | 18.9% | 228 | 62.5% |
| Total | 259 | 71% | 106 | 29% | 365 | |

SIAG/ACDA Membership by Gender

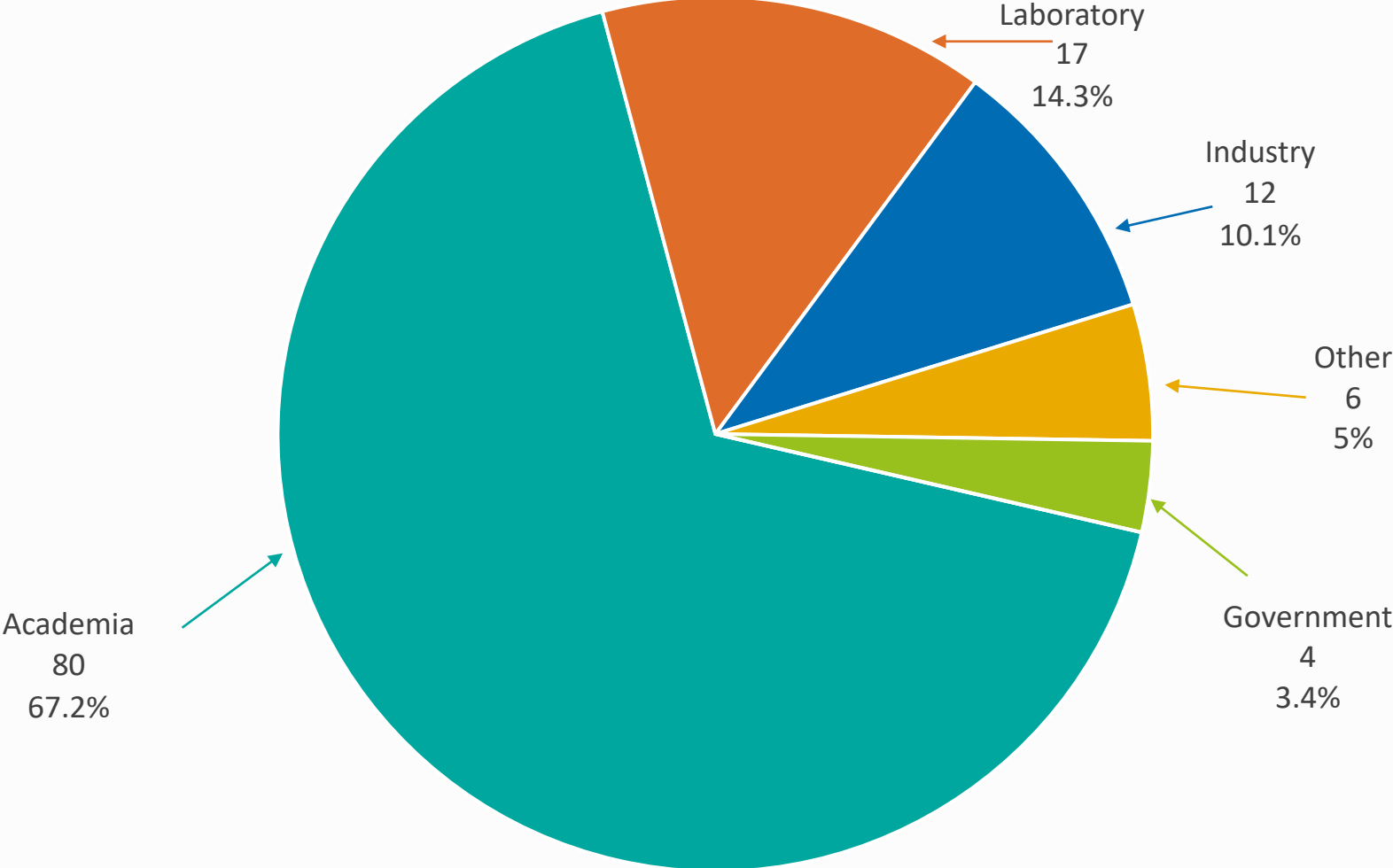
Nonstudents



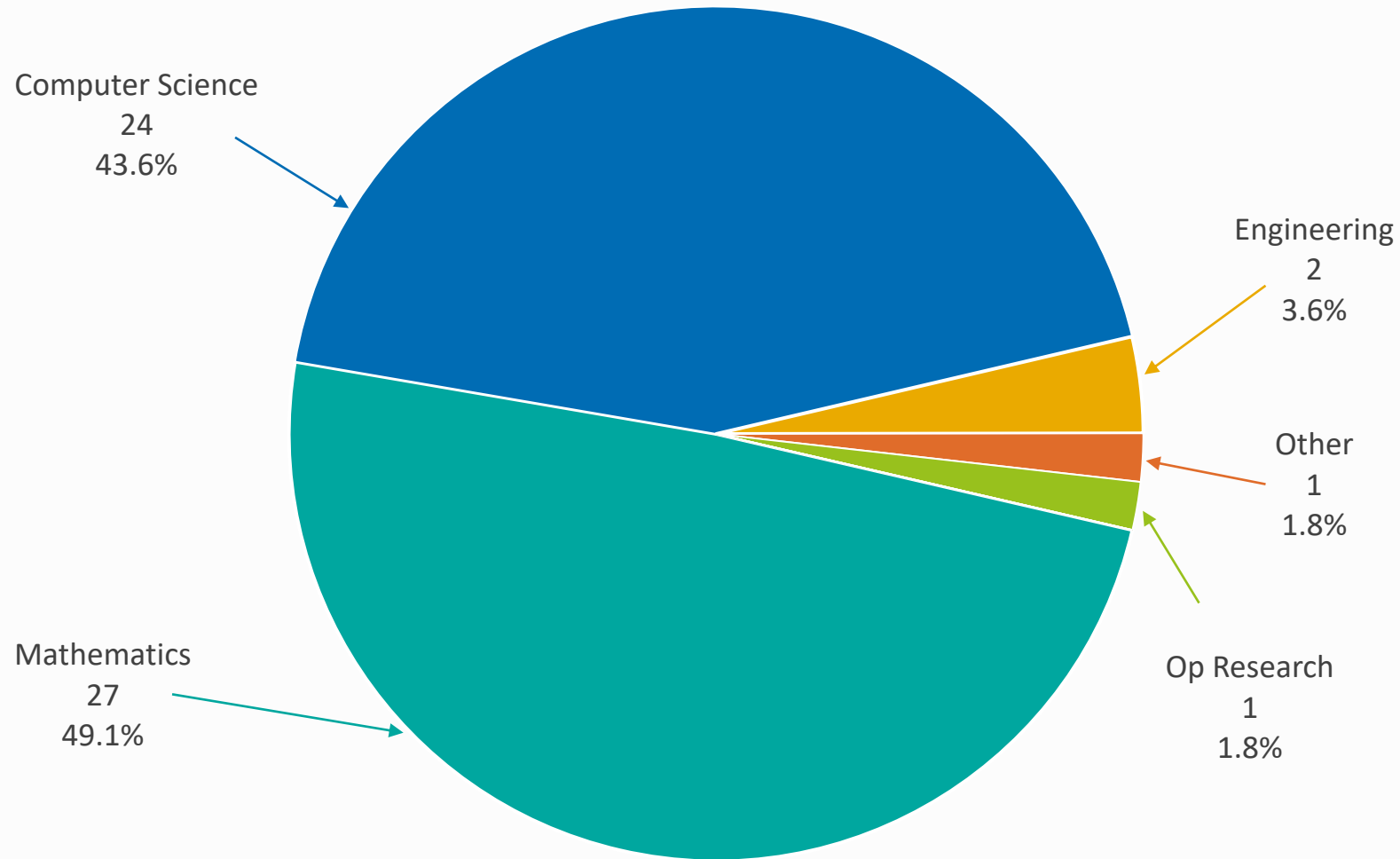
Students



SIAG/ACDA Membership by Employer Type



SIAG/ACDA Membership by Department Type



SIAG/ACDA Conference History

2021: July 19-21; joint with AN21; virtual

OC co-chairs: Bruce Hendrickson, Blair D. Sullivan

PC co-chairs: Michael Bender, John Gilbert

421 attendees indicated interest in ACDA during registration (including AN+ACDA)*

2023: May 31-Jun 2; joint with OP23; Seattle

OC co-chairs: Lenore Cowen, Uwe Naumann

PC co-chairs: Jonathan Berry, David Shmoys

202++ attendees indicated interest in ACDA during registration*

**35 ACDA-only + 168 ACDA+OP + 200 currently un-labelled additional registrations since May 5*

2023 SIAG/ACDA

ACDA23 Program Committee Report

Jonathan Berry, Sandia National Laboratories

David Shmoys, Cornell University

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SIAG/ACDA ACDA23 Highlights (May 31 – Jun 2, 2023)

SIAG/ACDA **Early Career Prize**: Nate Veldt (Texas A&M University), Generalized Hypergraph Cut Algorithms and Their Applications (today at 9:15am)

6 **Plenary Presentations**
(jointly/aligned with OP23)

21 **Proceedings Papers** (⇒ “Best Paper” Award)

Poster Session (today at 6:30pm
⇒ “Best Poster” Award)

26 **Contributed Presentations**
(⇒ “Best Student Presentation” Award)

Business Meeting
(tomorrow at 6:30pm).

Minitutorial: Sergei Vassilvitskii (Google),
Beyond Worst Case Analysis (today at 4:30pm)

SIAG/ACDA ACDA23 Submission Formats

- Submissions for Inclusion in an Archival Proceedings
- Submissions for Presentation without Inclusion in Archival Proceedings
 - Common submission format for both streams
 - At most 10-page extended abstract with appendices allowed
 - “Lightly” double-blind
 - Common decision/evaluation process
 - Papers without proceedings could be concurrent submissions (but not appeared)
- Submissions for Posters

SIAG/ACDA ACDA23 Submission Formats (with Statistics)

- Submissions for Inclusion in an Archival Proceedings

21 papers accepted from among 48 submissions

- Submissions for Presentation without Inclusion in Archival Proceedings

- Common submission format for both streams
- At most 10-page extended abstract with appendices allowed
- “Lightly” double-blind
- Common decision/evaluation process
- Papers without proceedings could be concurrent submissions (but not appeared)

6 papers accepted from among 12 submissions

- Submissions for Posters

10 posters accepted from among 16 submissions

SIAG/ACDA ACDA23 Best Paper Award

Jarno N. Alanko, Simon J. Puglisi, Jaakko Vuohtoniemi:
**Small Searchable K-Spectra via Subset Rank Queries on
the Spectral Burrows-Wheeler Transform.**

SIAG/ACDA ACDA23 Best Student Presentation Finalists

- **Jannick Borowitz, Engineering Fully Dynamic $\Delta\Delta$ -Orientation Algorithms.**
- **Shangdi Yu, Faster Parallel Exact Density Peaks Clustering.**
- **Xiaojun Dong, Provably Fast and Space-Efficient Parallel Biconnectivity.**
- **Hunter McCoy, Singleton Sieving: Overcoming the Memory/Speed Trade-Off in Exascale K-Mer Analysis**

SIAG/ACDA ACDA23 Best Student Presentation

Xiaojun Dong

Provably Fast and Space-Efficient Parallel Biconnectivity

SIAG/ACDA ACDA23 Best Poster Award

Ishan Bansal

Extending Primal-Dual Methods for Edge Connectivity

SIAG/ACDA ACDA23 Program Committee

Jonathan Berry, Sandia National Laboratories, U.S. (co-chair)
David Shmoys, Cornell University, U.S. (co-chair)
Martin Bücker, Friedrich-Schiller-Universität Jena, Germany
David Bader, New Jersey Institute of Technology, U.S.
Michael Bender, SUNY Stony Brook, U.S.
Anne Benoit, ENS Lyon, France
Dan Bienstock, Columbia University, U.S.
Sarah Cannon, Claremont McKenna College, U.S.
Lenore Cowen, Tufts University, U.S.
Martin Farach-Colton, Rutgers University, U.S.
Maryam Fazel, University of Washington, U.S.
Sándor Fekete, Technische Universität Braunschweig, Germany
Xin Gao, King Abdullah University of Science and Technology, Saudi Arabia
Assefaw Gebremedhin, Washington State University, U.S.
Phil Gibbons, Carnegie Mellon University, U.S.
John Gilbert, University of California, Santa Barbara, U.S.
Andrew Goldberg, Amazon, U.S.
Giulia Gudi, University of California, Berkeley, U.S.
Swati Gupta, Georgia Institute of Technology, U.S.
Kathrin Hanauer, University of Vienna, Austria
Bruce Hendrickson, Lawrence Livermore National Laboratory, U.S.
Dorit Hochbaum, University of California, Berkeley, U.S.
Paul Hovland, Argonne National Laboratory, U.S.
Rob Johnson, VMware Research, U.S.
Jeremy Kepner, Massachusetts Institute of Technology, U.S.
Smita Krishnaswamy, Yale University, U.S.
Kamesh Madduri, Pennsylvania State University, U.S.

Fredrick Manne, University of Bergen, Norway
Samuel McCauley, Williams College, U.S.
Nicole Megow, University of Bremen, Germany
Ben Moseley, Carnegie Mellon University, U.S.
Eisha Nathan, Lawrence Livermore National Laboratory, U.S.
Uwe Naumann, RWTH Aachen University, Germany
Richard Peng, Georgia Institute of Technology, U.S.
Cynthia Phillips, Sandia National Laboratories, U.S.
Alex Pothén, Purdue University, U.S.
Emilie Purvine, Pacific Northwest National Laboratory, U.S.
Ted Ralphs, Lehigh University, U.S.
Julian Shun, Massachusetts Institute of Technology, U.S.
Aravind Srinivasan, University of Maryland, College Park, U.S.
Cliff Stein, Columbia University, U.S.
Blair Sullivan, University of Utah, U.S.
Adrian Tate, NAG, United Kingdom
Shang-Hua Teng, University of Southern California, U.S.
Denis Trystam, Grenoble Institute of Technology, France
Fabio Vandin, University of Padova, Italy
Santosh Vempala, Georgia Institute of Technology, U.S.
Rich Vuduc, Georgia Institute of Technology, U.S.
Andrea Walther, Humboldt Universität Berlin, Germany
Jean-Paul Watson, Lawrence Livermore National Laboratory, U.S.
David Woodruff, Carnegie Mellon University, U.S.
Shenghao Yang, University of Waterloo, Canada

SIAG/ACDA Conference 2023

Organizing Committee Co-Chairs

Lenore Cowen, Tufts University, U.S.

Uwe Naumann, RWTH Aachen University, Germany



Organizing Committee

Anne Benoit, ENS Lyon, France

Dorit Hochbaum, University of California, Berkeley, U.S.

Fredrik Manne, University of Bergen, Norway

Cynthia Phillips, Sandia National Laboratories, U.S.

Adrian Tate, NAG, United Kingdom

Shang-Hua Teng, University of Southern California, U.S.

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Other SIAG Activities

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SIAG/ACDA Early Career Prize

2023: Nate Veldt, Texas A&M University

Generalized Hypergraph Cut Algorithms and Their Applications

Wednesday, May 31st, 9:15 AM – 10:45 AM PDT

2025: Nominate Early-Career Colleagues!!

Deadline will be in October 2024

Nominees must be SIAG/ACDA members within 6 years* of PhD as of Jan 1 of award year

<https://www.siam.org/prizes-recognition/activity-group-prizes/detail/full-prize-specifications/siag-acda-early-career-prize>

* *Exceptions possible for career interruptions or delays due to e.g. child rearing, elder care, etc.*

SIAG/ACDA Online Seminar Series

- Steering committee
 - Anne Benoit, ENS de Lyon, France
 - Julian Shun, MIT, USA
 - Uwe Naumann, RWTH Aachen University, Germany
 - Bora Ucar, ENS de Lyon, France
(since 01/23; was Blair D. Sullivan, University of Utah until 12/22);
- Members serve two year staggered terms
- Planned recruitment of **three new members** by end of 2023

SIAG/ACDA Online Seminar Series

So far,

- [Katherine Yelick](#) (UC Berkeley, Lawrence Berkeley National Laboratory, USA)
Genomic Analysis at Scale: Mapping Irregular Computations to Advanced Architectures
Dec 16, 2021
- [Monika Henzinger](#) (University of Vienna, Austria)
Dynamic graph algorithms and their implementation
May 25, 2022
- [Michael Bender](#) (Stonybrook University, USA)
Online Parallel Paging & Green Paging
Dec 14, 2022
- Next seminar planned in Late Summer / Autumn 2023

Q: How frequent should these be? How can we increase participation? Is this a good use of energy?

SIAG/ACDA Affiliated Workshops & Minisymposia/Tracks

So far,

- CNRS Aussois Workshop
ACDA in Aussois, **September 2022**
Organizers: Michael A. Bender, Aydin Buluç, and Bora Uçar
- ICIAM Minisymposium
Applied & Computational Discrete Algorithms, **August 2023**
Organizers: Alex Pothen, Bora Uçar
- Dagstuhl Seminar
Discrete Algorithms on Modern & Emerging Compute Infrastructure, **May 2024**
Organizers: Kathrin Hanauer, Uwe Naumann, Alex Pothen, Rob Schreiber
- **Your workshop here?**
Please contact officers if you need help identifying possible co-organizers for a proposal!

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Other SIAG Activities

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SIAG/ACDA Ways to Connect

- Twitter: **@siam_acda**
- SIAM Engage:
 - <https://engage.siam.org/communities/siag-acda-home?CommunityKey=c9ac6d6c-1d32-4553-ac80-d2c84dd9aa54>
- SIAG/ACDA websites:
 - <https://www.siam.org/membership/activity-groups/detail/applied-and-computational-discrete-algorithms>

SIAG/ACDA Get Involved!

- Organize an ACDA-related workshop or minisymposium!
- Help our work be featured in SIAM News:
 - Story Ideas?
 - Want to be the SIAG liason? Please contact me!
- Volunteer – let us know if there’s something you’d like to do!
- SIAG/ACDA Leadership Suggestion Form:
 - <https://www.siam.org/forms/siam-activity-group-leadership-form>
- Nominate colleagues for prizes & honors!
 - SIAM Fellows Program (every year; next deadline: Oct. 2023)
 - SIAG/ACDA Early Career Prize (every 2 years; next deadline: Oct. 2024)
 - Polya Prize in Applied Combinatorics (every 4 years; next deadline: Oct. 2023)
 - *ACDA’s own Alex Pothen won this in 2021!*

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Discussion Topics

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Future conference(s)?

(CO)-LOCATION?

DATES?

FREQUENCY?

SIAG/ACDA ACDA25 co-location possibilities

Annual Meeting (AN25)

Montreal, Quebec, Canada

July 28 – Aug 2

Anticipated paper deadline: March 2025?

Computational Science & Engineering (CSE25)

Fort Worth, Texas, USA

March 3-7

Anticipated paper deadline: October 2024?

Other SIAG Activities?

WHAT SHOULD WE BE DOING MORE OF?

IS THERE SOMETHING WE SHOULD NOT DO?

WHAT COMMUNITY NEEDS ARE UNMET?

Matters Arising

SIAG/ACDA Happy Birthday, John!



In honor of John Gilbert's 70th Birthday (& retirement)

SIAG/ACDA Special Acknowledgment

In honor of Alex Pothén's
service to the community and SIAG

Contacts

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Vice Chair Michael Bender
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Program Director Bora Uçar
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Secretary Kathrin Hanauer
kathrin.hanauer@univie.ac.at

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