2024 SIAG/IS

SIAM Conference on Imaging Science Business Meeting

Wednesday, May 29th at 6:45 PM in Peachtree CD 8th Floor

siam | Society for Industrial and Applied Mathematics

SIAG/IS Officers

Chair:
Gabriele Steidl
*

Vice Chair:
Kui Ren
*

Program Director:
Yifei Lou
*

Secretary:
Fatma Terzioglu

SIAG/IS Thank you to the 2022/23 Officers

Chair:

Hongkai Zhao

*

Vice Chair:

Rebecca Willett

*

Program Director:

Samuli Siltanen

*

Secretary:

Angelica I Aviles-Rivero

SIAG/IS Announcements

- SIAM Engage

  - https://engage.siam.org/communities/siag-is-home?CommunityKey=db5f27fc-3676-4a80-b66c-34dc9f7d6635

  - SIAG/IS websites:

  - https://www.siam.org/membership/activity-groups/detail/imaging-science

  - http://wiki.siam.org/siag-is/index.php/Main_Page

- SIAM Blogs

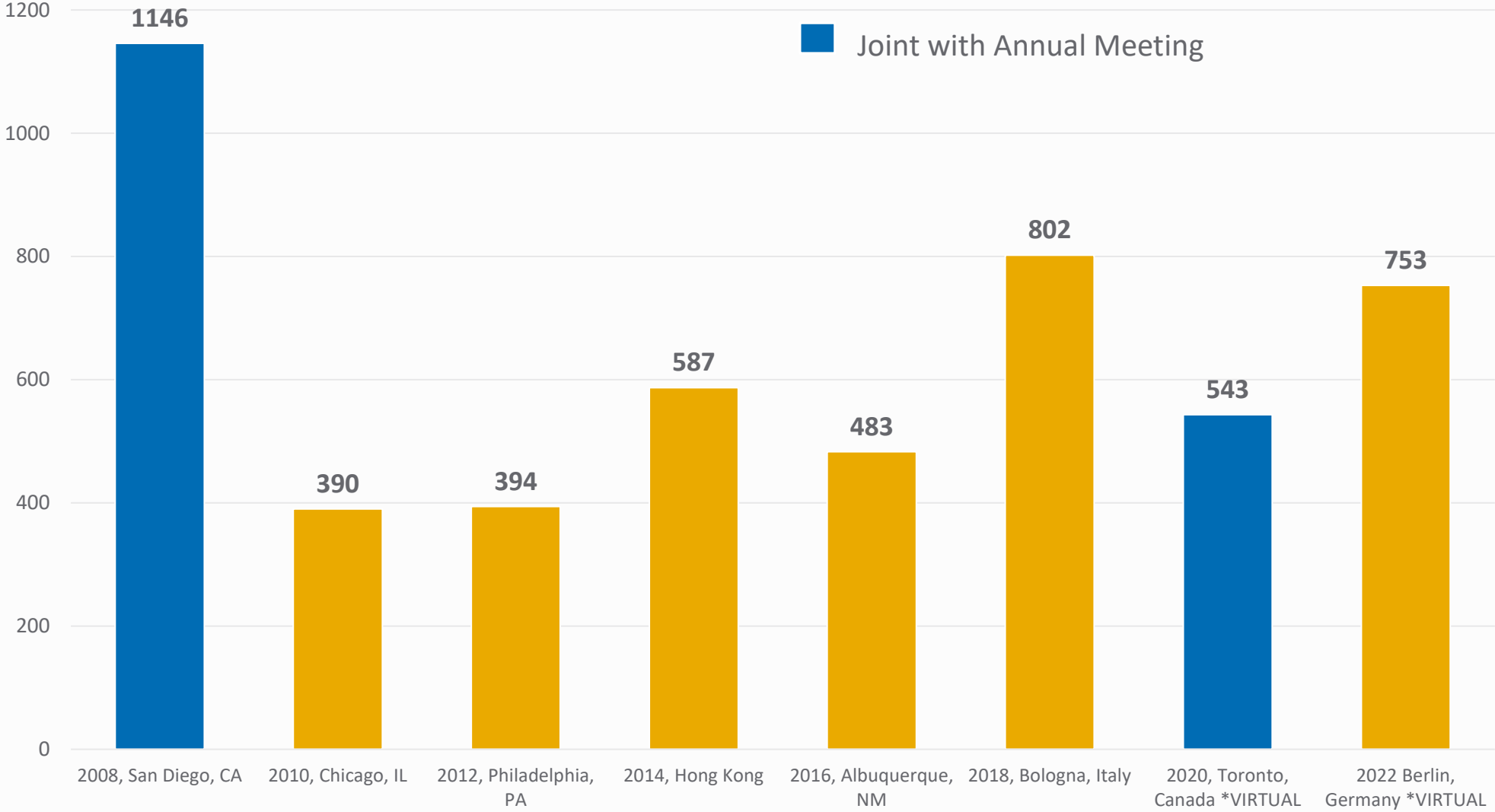- SIAM News: Story Ideas

- SIAG/IS Leadership Suggestion Form:

  - https://www.siam.org/forms/siam-activity-group-leadership-form

SIAG/IS Fellows

Class of 2023

Laurent Younes

Class of 2024

Hans de Sterck

Carola-Bibiane Schönlieb

SIAG/IS Conference History

Joint with Annual Meeting

Year, Location	Attendance
2008, San Diego, CA	1146
2010, Chicago, IL	390
2012, Philadelphia, PA	394
2014, Hong Kong	587
2016, Albuquerque, NM	483
2018, Bologna, Italy	802
2020, Toronto, Canada *VIRTUAL	543
2022 Berlin, Germany *VIRTUAL	753

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SIAG/IS Conference 2024

Organizing Committee Co-Chairs

Kui Ren, Columbia University, U.S.
Samuli Siltanen, University of Helsinki, Finland

*

Organizing Committee

Mark Anastasio, University of Illinois Urbana-Champaign, U.S.
Liliana Borcea, University of Michigan, Ann Arbor, U.S.
Julianne Chung, Emory University, U.S.
Juan Carlos De los Reyes, MODEMAT, Escuela Politecnica Nacional Quito, Ecuador
Bin Dong, Peking University, China
Hui Ji, National University of Singapore, U.S.
Audrey Repetti, Heriot-Watt University, United Kingdom
Tanja Tarvainen, University of Eastern Finland, Finland
Joachim Weickert, Saarland University, Germany
Xiaoqun Zhang, Shanghai Jiao Tong University, China

SIAG/IS Conference 2024

SIAG/IS Best Paper Prize

Implicit Regularization in Nonconvex Statistical Estimation:
Gradient Descent Converges Linearly for Phase Retrieval, Matrix Completion and Blind Deconvolution
Wednesday May 19th, 1:00 PM – 1:45 PM, Peachtree CD 8th Floor

Recent years have seen significant progress in designing efficient nonconvex procedures for statistical estimation. These procedures often require regularization to ensure fast convergence. This paper reveals that gradient descent implicitly enforces proper regularization, even without explicit regularization terms. It follows a trajectory within a basin that has favorable geometry, leading to aggressive yet stable optimization. We demonstrate this "implicit regulatization" phenomenon in phase retrieval, low-rank matrix completion, and blind deconvolution problems, showing near-optimal statistical and computational guarantees. Our approach, a leave-one-out perturbation argument, marries statistical modeling with optimization theory, providing a general recipe for analyzing iterative algorithms' trajectories.

Cong Ma
University of Chicago, U.S.
Kaizheng Wang
Columbia University, U.S.
Yuejie Chi
Carnegie Mellon University, U.S.
Yuxin Chen
University of Pennsylvania, U.S.

July 8th – July 12th, 2024
Spokane Convention Center
Spokane, Washington, U.S.

The Annual Meeting provides a broad view of the state of the art in applied mathematics, computational and data science, and their applications through invited presentations, prize lectures, minitutorials, minisymposia, contributed presentations, and posters.

The 2024 online component will take place July 18th-20th

Organizing Committee Co-Chairs

Michael P. Friedlander, University of British Columbia, Canada
Anna Mazzucato, Pennsylvania State University, U.S.

SIAM 2024 | Annual Meeting

July 8th – July 12th, 2024
Spokane Convention Center
Spokane, Washington, U.S.

- *Online component July 18th-20th*

Held Jointly with:

- SIAM Conference on Discrete Mathematics (DM24)
- SIAM Conference on Applied Mathematics in Education (ED24)

Tracks of Sessions by SIAM SIAGs:

- Dynamical Systems

Registration Deadline:

- June 10th, 2024

Hotel Registration Deadline:

- June 10th, 2024

Travel Fund Application Deadline:

- April 8th, 2024

More information available at:
https://www.siam.org/conferences/cm/conference/an24

Plenary Speakers

Carrie Diaz Eaton, Bates College, U.S. (ED24)
Maryam Fazel, University of Washington, U.S.
Ulrike Feudel, Universität Oldenburg, Germany
George Haller, ETH Zürich, Switzerland
Youssef Marzouk, MIT, U.S.
Jonathan Mattingly, Duke University, U.S.
Raghu Meka, UCLA, U.S. (DM24)
Siddhartha Mishra, ETH Zürich, Switzerland
Sebastian Reich, University of Potsdam, Germany
Juan Restrepo, Oak Ridge National Laboratory, U.S.
Leslie Smith, University of Wisconsin, U.S.
Gabriele Steidl, Technische Universität Berlin, Germany

More information available at:
https://www.siam.org/conferences/cm/conference/an24

Gene Golub SIAM Summer School

Iterative and Randomized Methods for Large-Scale Inverse Problems

July 22nd - August 2nd 2024

Campus of the Escuela Politécnica Nacional, Ladrón de Guevara E11-253, Quito, Ecuador.

Our Summer School will enable students to learn state-of-the-art mathematical and statistical tools to discover information hidden within large-scale data sets and solve complex inverse problems. Through hands-on experience with techniques from Randomized Numerical Linear Algebra, data assimilation, iterative algorithms, and inverse problems we will offer students a two-week summer school to learn this valuable range of computational mathematics topics.

SIAM will be accepting proposals for the 2026 school in the fall, with a deadline of January 31, 2025.

For more information visit: https://www.siam.org/students-education/programs-initiatives/gene-golub-siam-summer-school

SIAM Journals

SIAM's 18 journals are all available for download on SIAM's virtual library, epubs.siam.org. SIAM's virtual library is the definitive source for the final, peer-reviewed version of every published article, so be sure to utilize it!

Questions about using epubls.siam.org? Contact sales@siam.org for a user guide and personal assistance!

Society for Industrial and Applied Mathematics

Future conferences?

LOCATION

TIMING

PROGRAM COMMITTEE

Join SIAM Today!

Benefits of SIAM Membership Include………

- *SIAM Review* (Print & Electronic)
- *SIAM News* (Print)
- 30% Off SIAM Books
- $15 / Activity Group Membership
- 20% - 30% Off Registrations
- 80% Off Journals (up to 4)
- 95% Off e-Access to Journals
- Spouse may join as Associate Member
- *SIAM Unwrapped*

- Vote in SIAM Elections
- Eligible to Hold Office
- Eligible for Committee Appointments
- Nominate SIAM Fellows
- Be Nominated as a SIAM Fellow
- Eligible for Group Insurance
- Nominate 2 Students for Free Membership
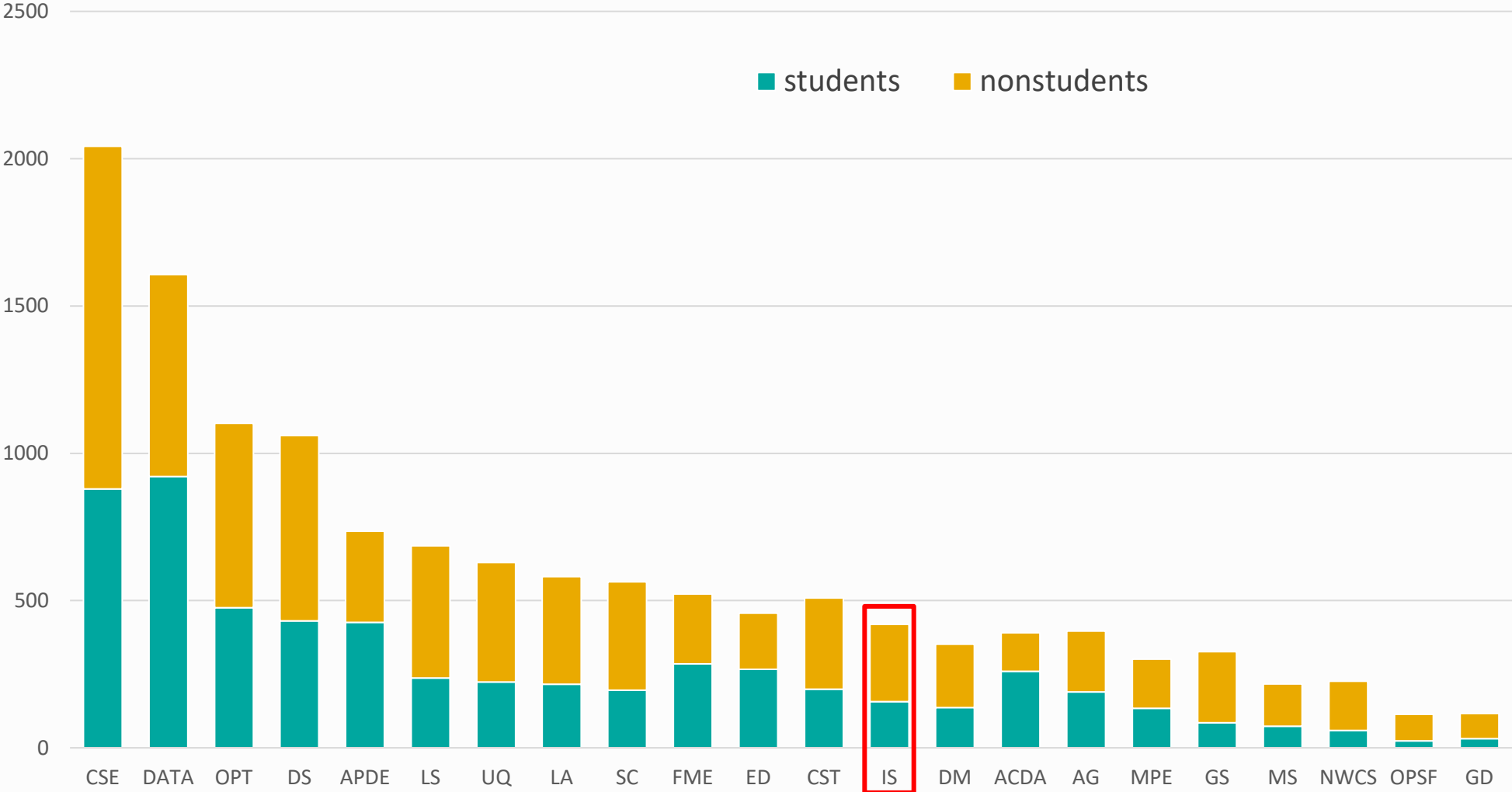- Qualifying Student Members can join 2 SIAGs for *free*!
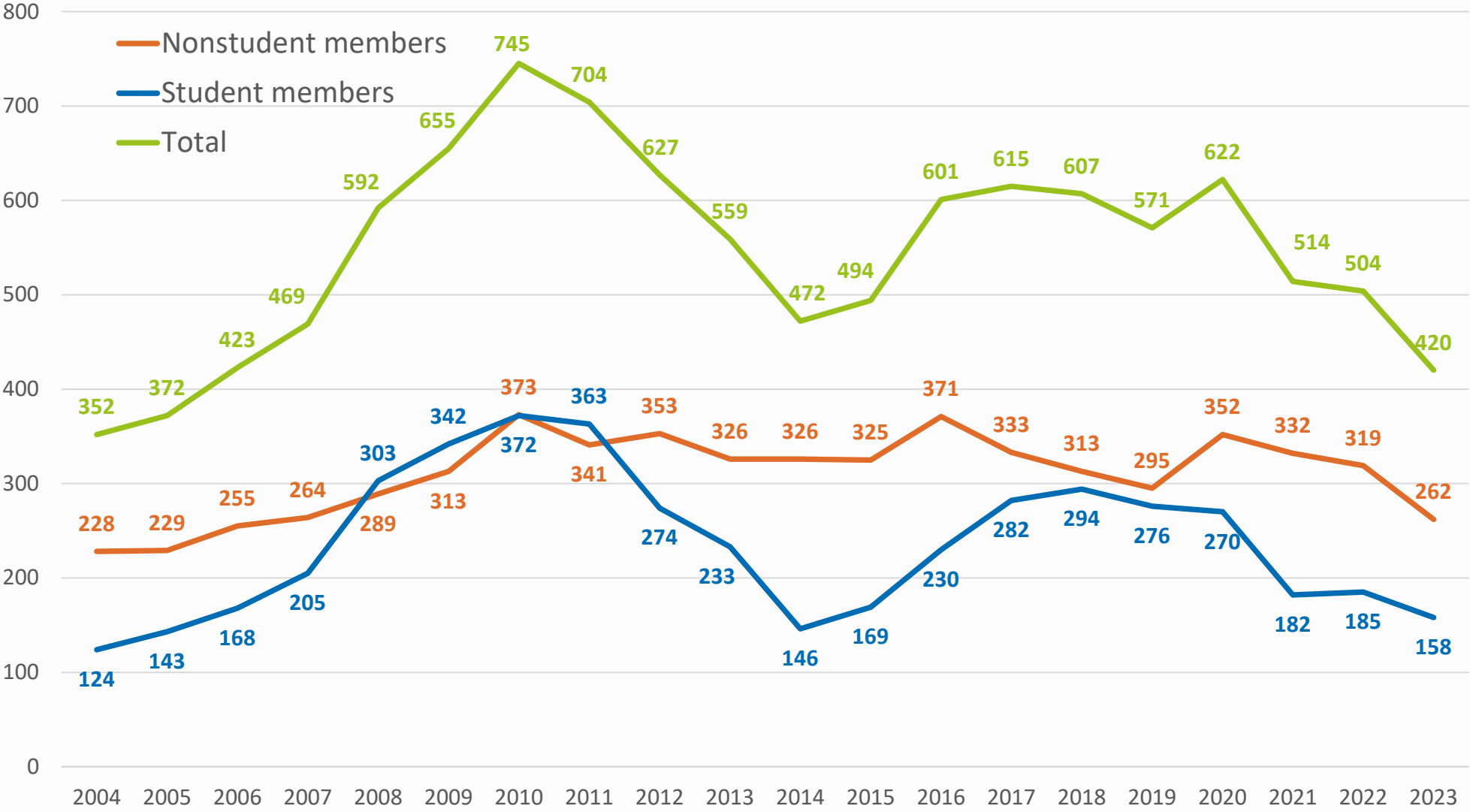
2024 SIAG/IS

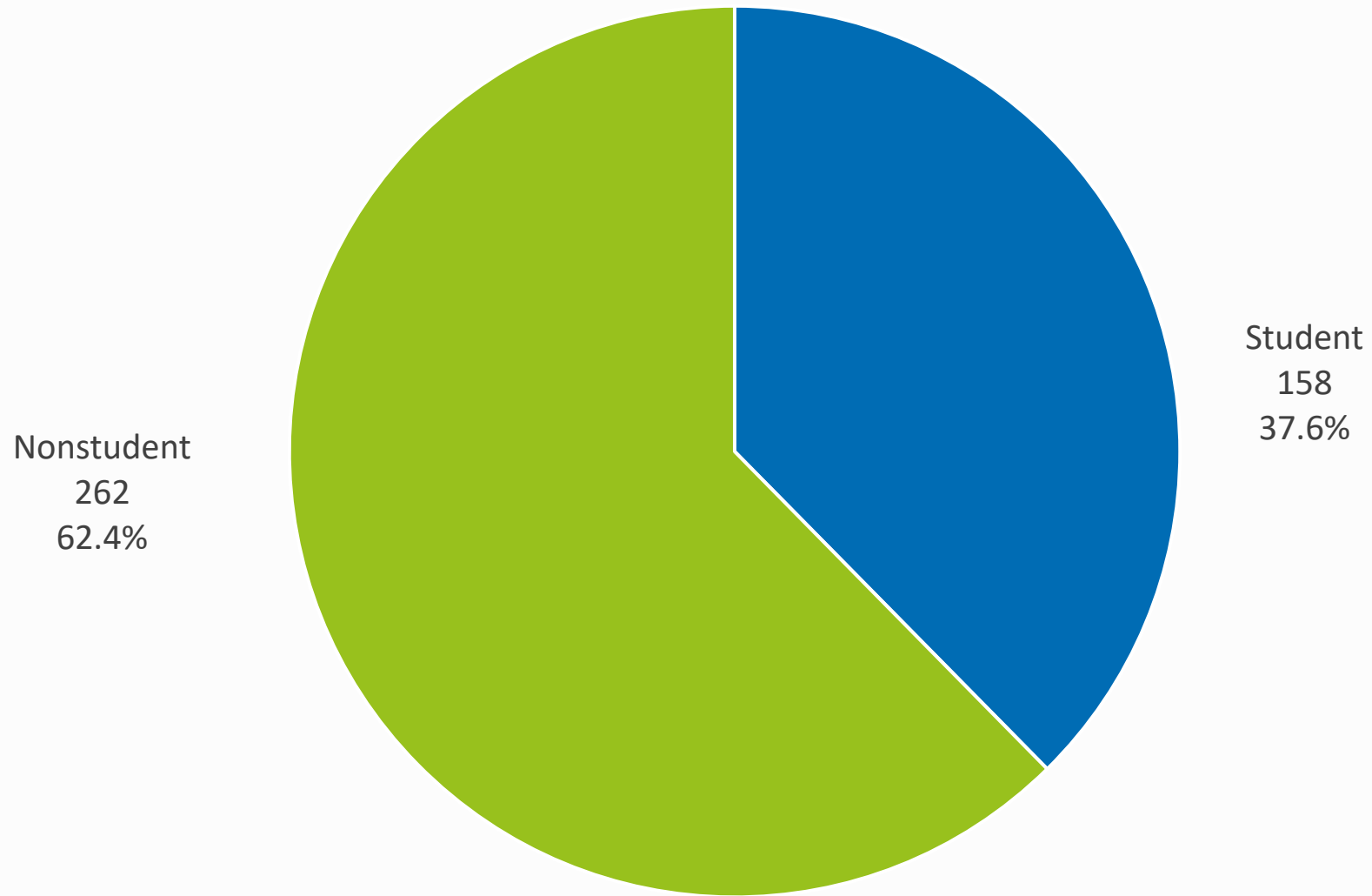## Membership Report

(data as of December 31, 2023)

SIAG Overall Membership

SIAG/IS Membership Demographics

SIAG/IS Membership Demographics

Student
158
37.6%
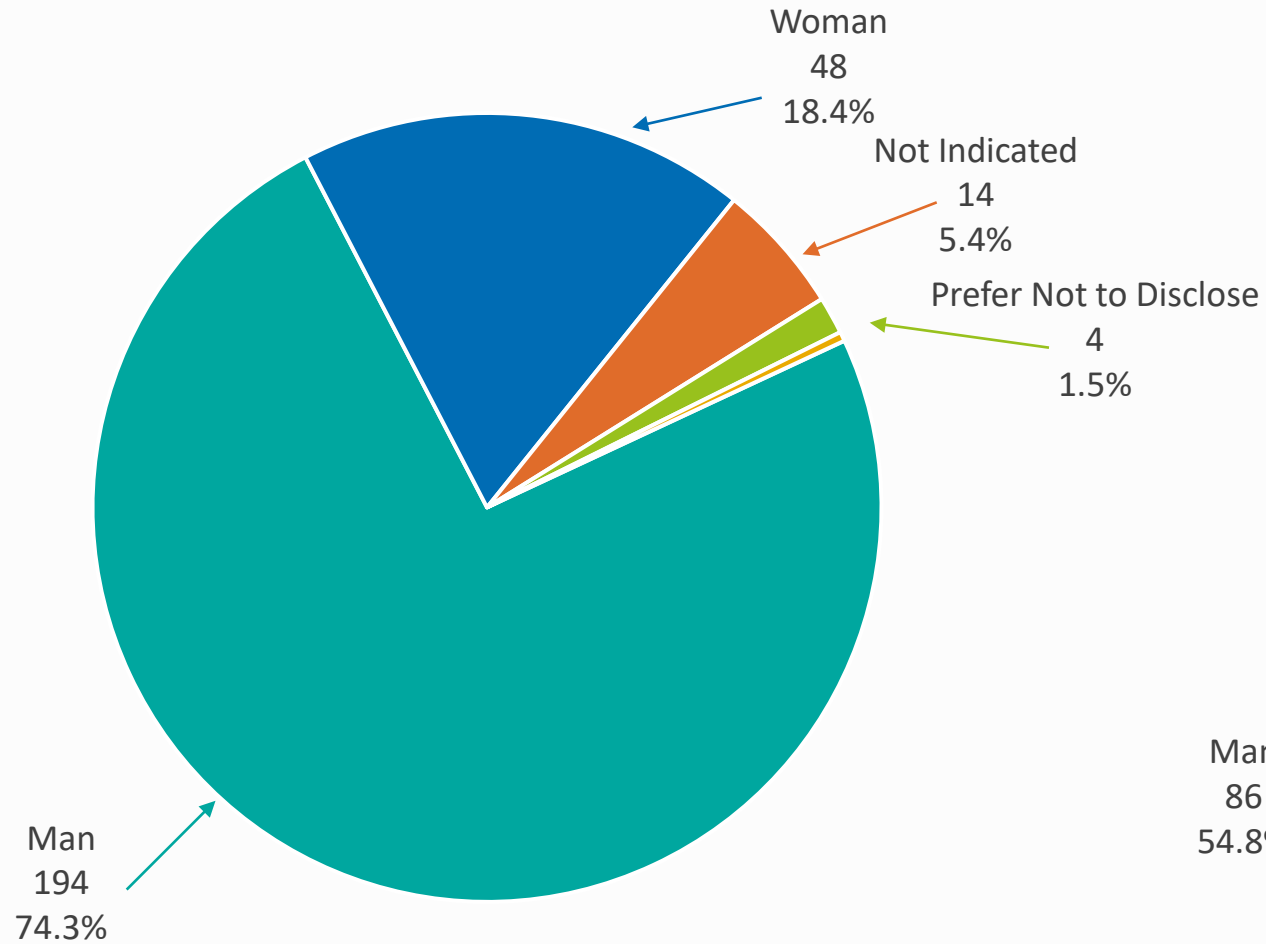
Nonstudent
262
62.4%

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SIAG/IS Membership by Geography

	US		Non-US		Total	
Nonstudent	155	37%	107	25%	262	62%
Student	91	22%	67	16%	158	38%
Total	246	59%	174	41%	420	

SIAG/IS Membership by Gender

Nonstudents

Woman
48
18.4%

Not Indicated
14
5.4%

Prefer Not to Disclose
4
1.5%

Man
194
74.3%

Students

Woman
53
33.8%

Not Indicated
15
9.6%

Prefer Not to Disclose
3
1.9%

Man
86
54.8%
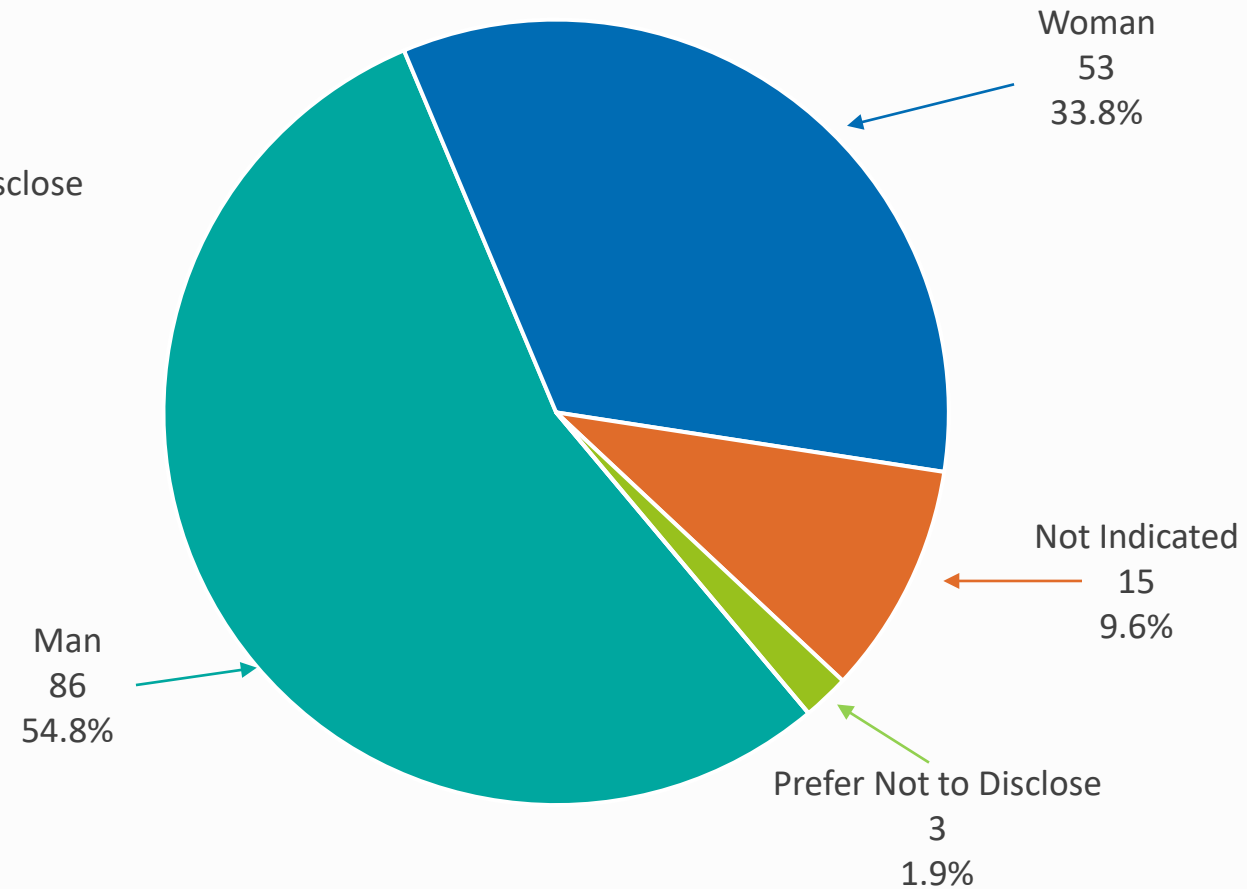
SIAG/IS Membership by Employer Type

Industry
28
8.7%

Laboratory
10
3.1%

Government
5
1.5%

Other
8
2.5%

Academia
272
84.2%

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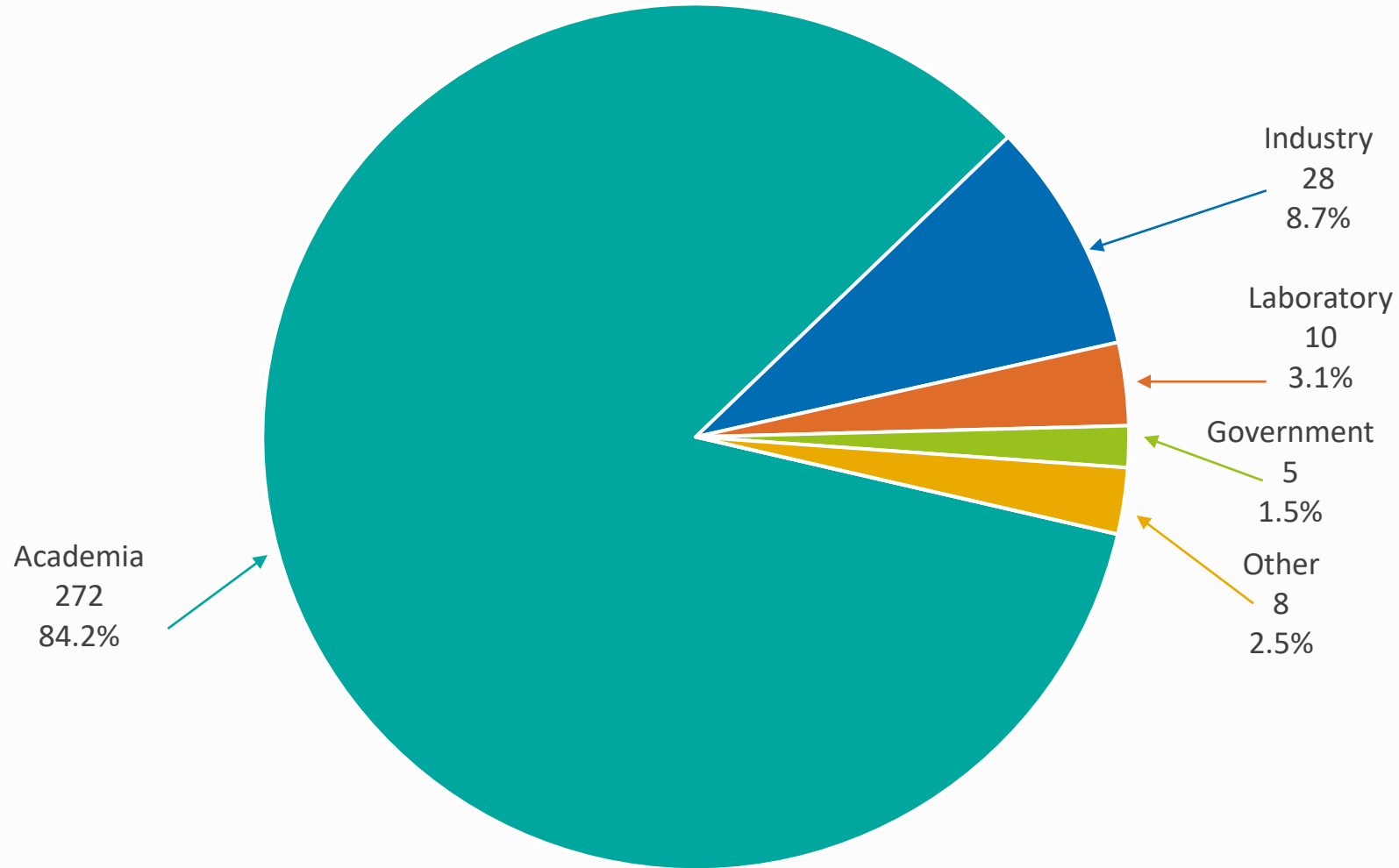
SIAG/IS Membership by Department Type

Engineering
24
17.1%

Computer Science
11
7.9%

Other
6
4.3%

Physics
5
3.6%

Statistics
6
4.3%

Other
(Physical Science)
6
4.3%

Mathematics
81
57.9%
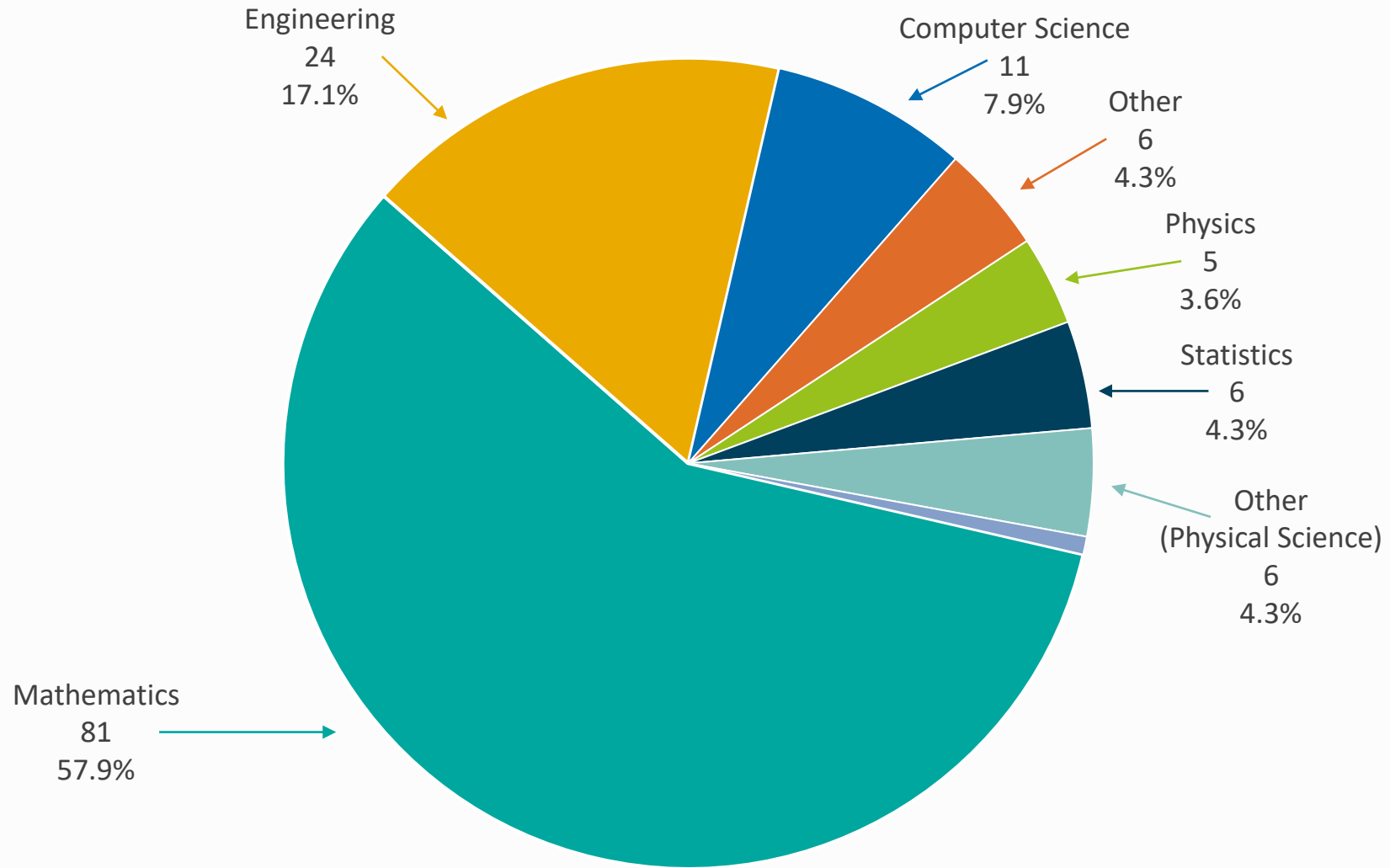
Other Business

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