2024 SIAG/LA

SIAM Conference on Applied Linear Algebra Business Meeting

Wednesday, May 15th at 6:45pm, in Auditorium CICSU

siam Society for Industrial and Applied Mathematics

SIAG/LA Officers

Chair:

Melina A. Freitag

*

Vice Chair:

Silvia Gazzola

*

Program Director:

Agnieszka Miedlar

*

Secretary:

Arvind K. Saibaba

SIAG/LA Announcements

- SIAM Engage
- SIAG/LA websites:
  - https://www.siam.org/membership/activity-groups/detail/linear-algebra
  - SIAM News: Story Ideas
- SIAM Blogs
- SIAG/LA Leadership Suggestion Form:
  - https://www.siam.org/forms/siam-activity-group-leadership-form

SIAG/LA Fellows

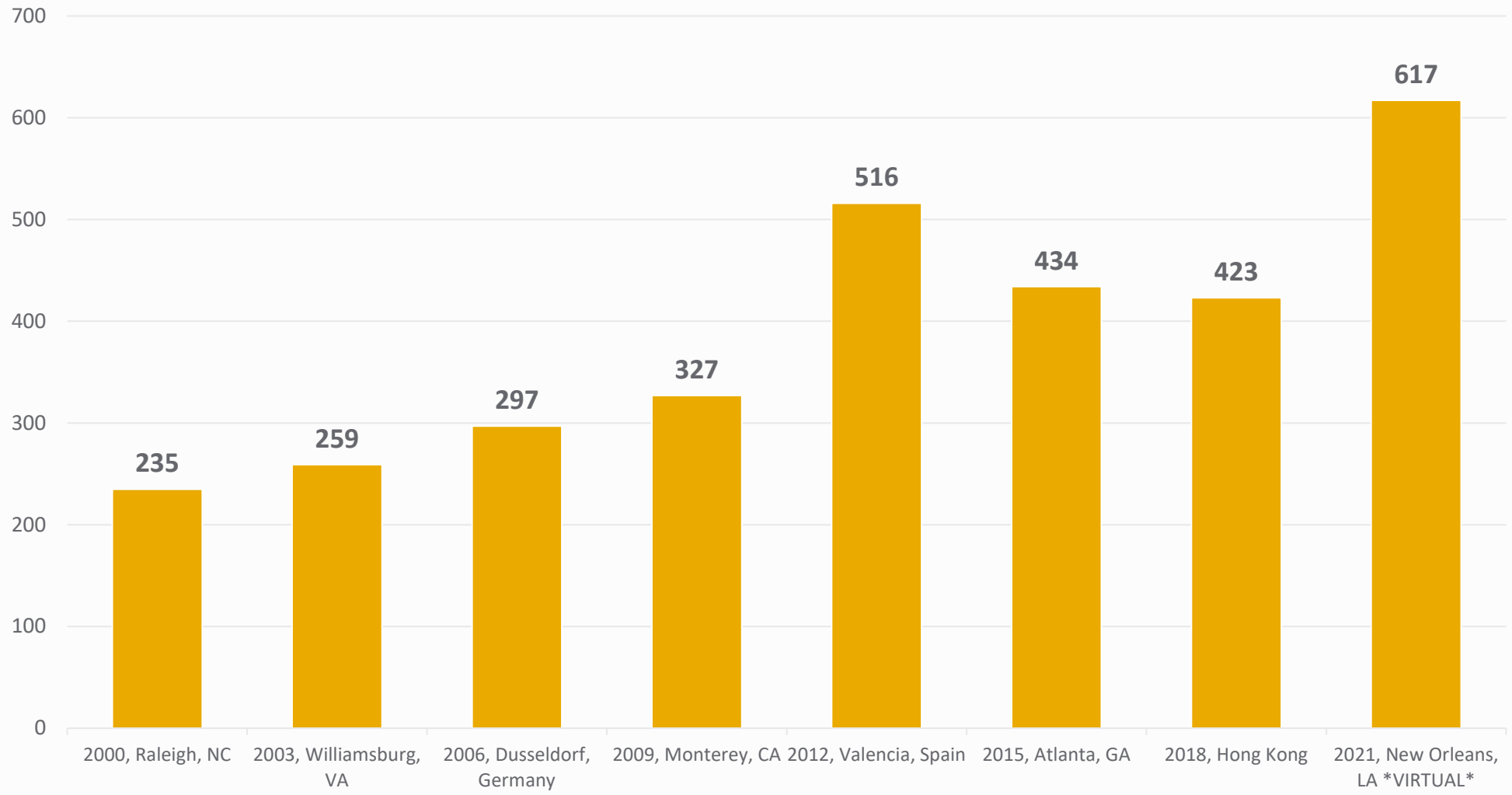
Class of 2022

James Curry
Chen Greif
Daniel Kressner
Rosemary Renaut
Wil Schilders
Raymond Tuminaro

Class of 2024

David Bindel
Hans de Sterck
Chao Yang
Ulrike Meier Yang

SIAG/LA Conference History



SIAG/LA Conference 2024

Organizing Committee Co-Chairs

Laura Grigori, EPFL and PSI, Switzerland
Daniel Kressner, EPFL, Switzerland

*

Organizing Committee

Erin Carson, Charles University, Czech Republic
Edmond Chow, Georgia Institute of Technology, U.S.
Julianne Chung, Emory University, U.S.
Andreas Frommer, Wuppertal University, Germany
Chen Greif, The University of British Columbia, Canada
Tamara Kolda, MathSci.ai, U.S.
Lin Lin, University of California, Berkeley, U.S.
Agnieszka Miedlar, Virginia Tech, U.S.
Yuji Nakatsukasa, University of Oxford, United Kingdom
Catherine Powell, University of Manchester, United Kingdom
Rio Yokota, Tokyo Institute of Technology, Japan

SIAG/LA Early Career Prize

The Growth Factor in Gaussian Elimination

Tuesday, May 14th, 6:35 PM - 7:20 PM

Auditorium CICSU

The solution of a linear system, i.e., given a matrix A and vector b, finding a vector x satisfying Ax = b, is one of the oldest problems in mathematics. Gaussian elimination is one of the most fundamental and well-known techniques for solving linear systems, by factoring a matrix into the product of a lower and upper triangular matrix. Surprisingly, a number of questions regarding the worst-case stability of this algorithm remains.

In this talk, we will study the history of this subject, a story that spans over seventy-five years, and discuss some recent progress.

John Urschel

Massachusetts Institute of Technology, U.S.

SIAG/LA Best Paper Prize

Recovering Green's Functions with Randomized Numerical Linear Algebra

Thursday, May 16th, 5:10 PM – 5:55 PM

Auditorium CICSU

There is a strong connection between the recovery of structured matrices from matrix-vector products in numerical linear algebra and the growing field of operator learning, which aims to discover properties of unknown physical systems from experimental data. The randomized SVD is one of the most popular algorithms for constructing low-rank approximations to matrices using matrix-vector products with standard Gaussian random vectors.

In this talk, we will generalize the randomized SVD to random vectors generated from any multivariate Gaussian distribution. Our approach allows us to extend the randomized SVD to infinite dimensions and approximate Hilbert-Schmidt operators, which are continuous analogues of matrices, from integration against random functions sampled from a Gaussian process. Finally, we will construct a randomized algorithm for recovering Green's functions of elliptic partial differential equations and derive a learning rate to characterize the number of input-output pairs needed to learn Green's functions within a prescribed tolerance.

Nicolas Boulle

University of Cambridge, United Kingdom

Alex Townsend

Cornell University, U.S.

SIAM 2024 Annual Meeting

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.

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

- *Online component July 18th-20th*

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.

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!

Future conferences?

LOCATION

TIMING

PROGRAM COMMITTEE

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Benefits of SIAM Membership Include……

- *SIAM Review* (Print & Electronic)
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- 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*!
- Reciprocal member discount for members of SMAI

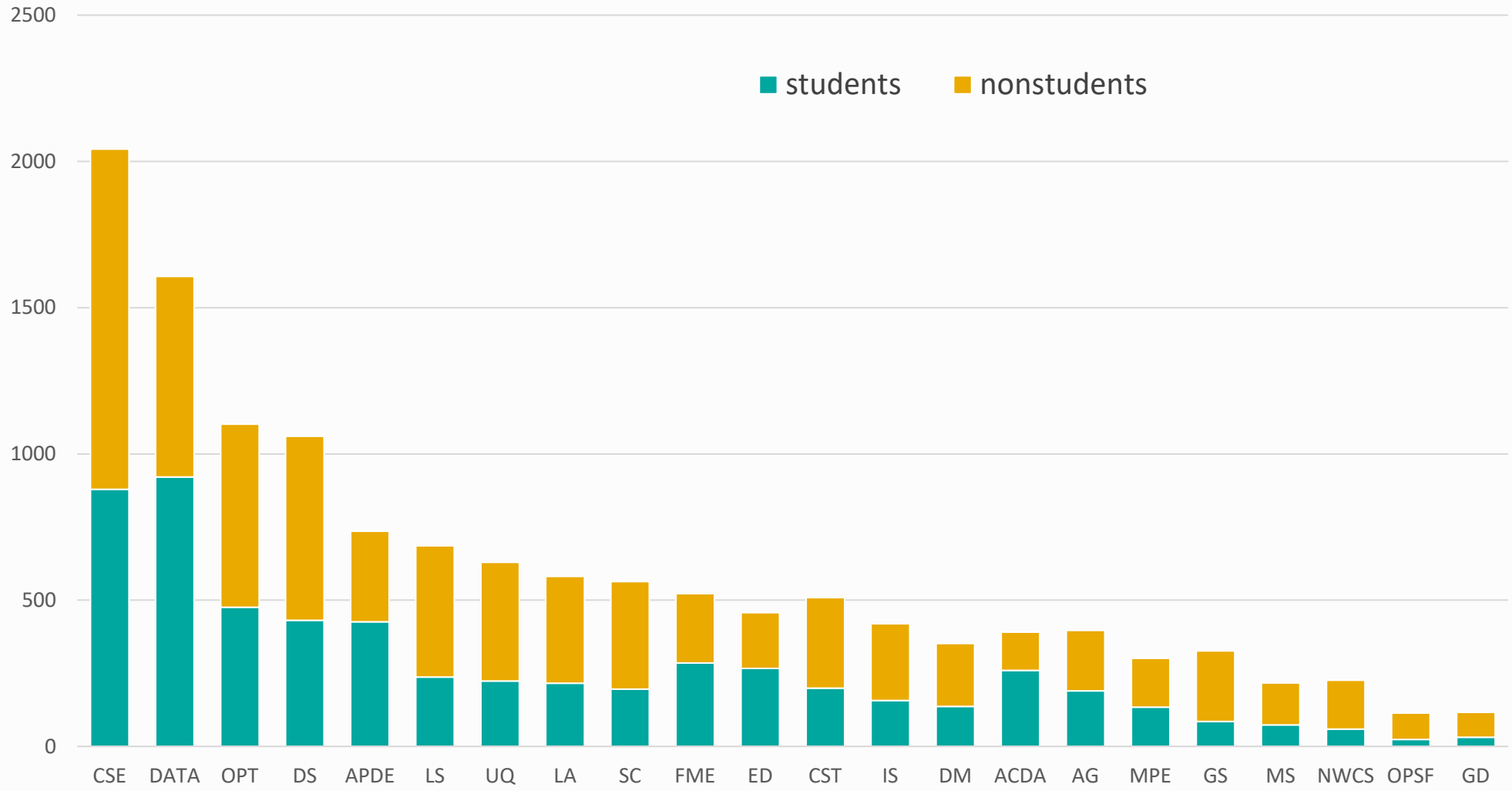
2024 SIAG/LA

Membership Report

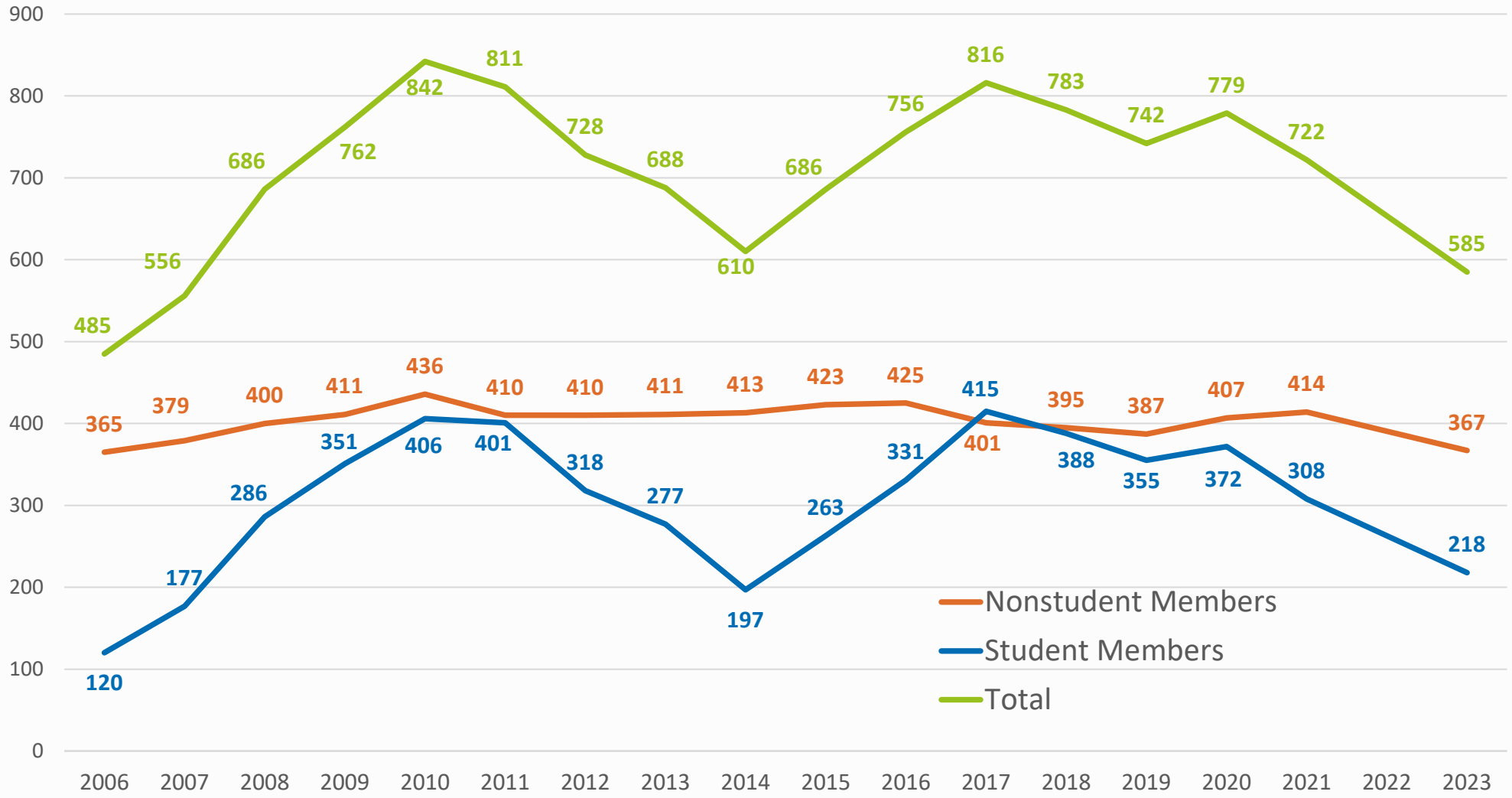
(data as of December 31, 2023)

siam Society for Industrial and Applied Mathematics

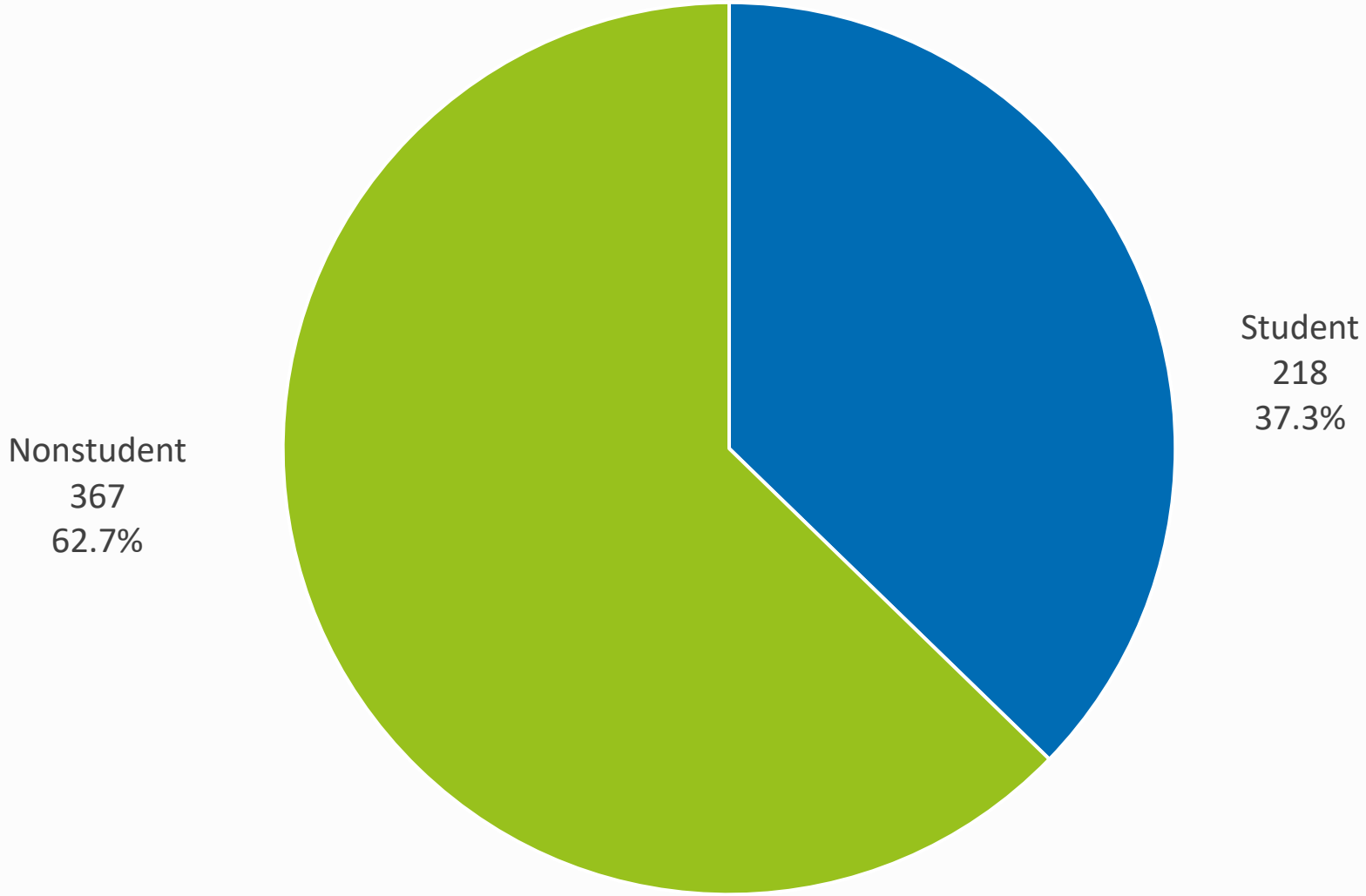
SIAG Overall Membership



SIAG/LA Membership Demographics



SIAG/LA Membership Demographics

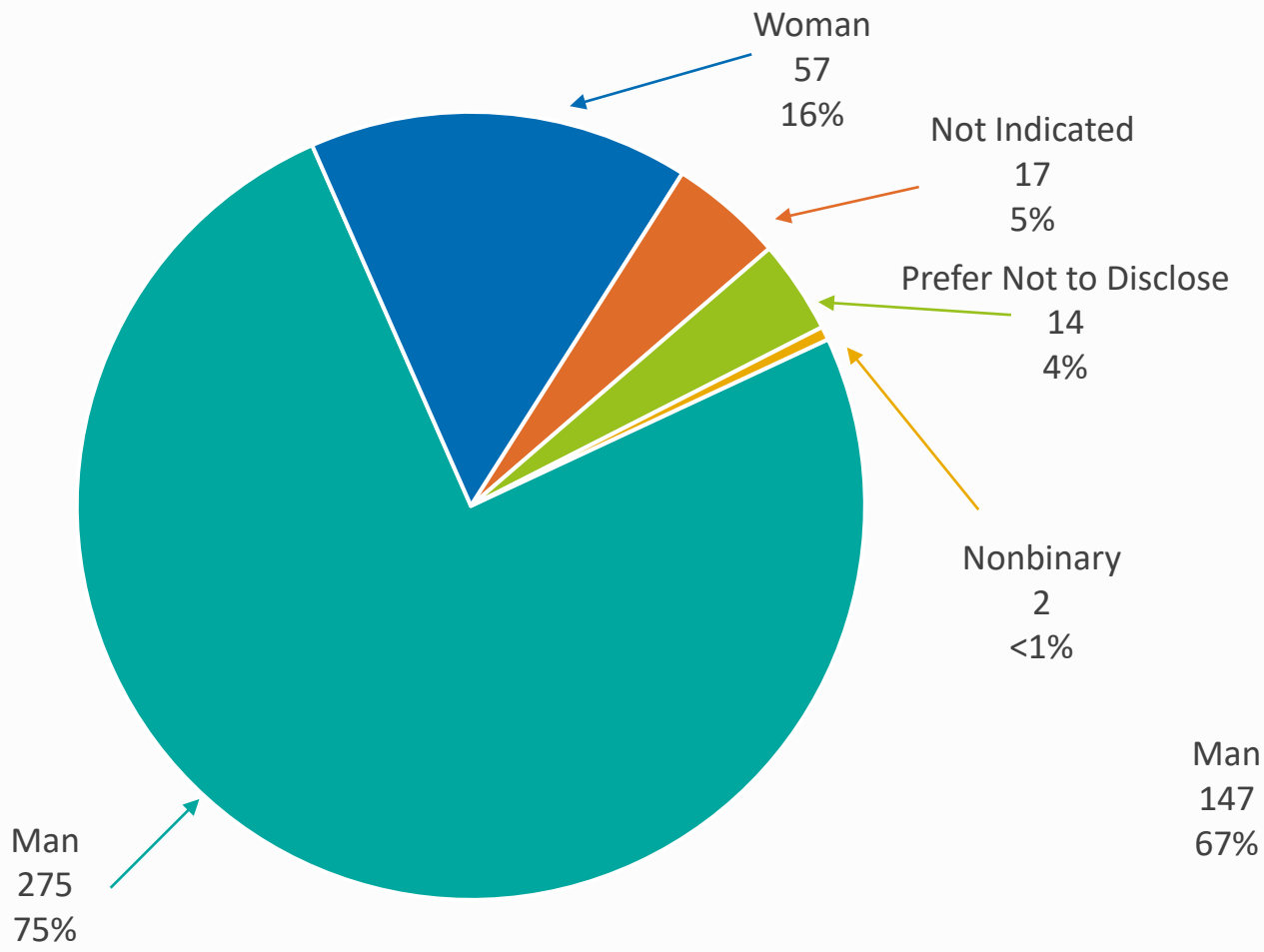


SIAG/LA Membership by Geography

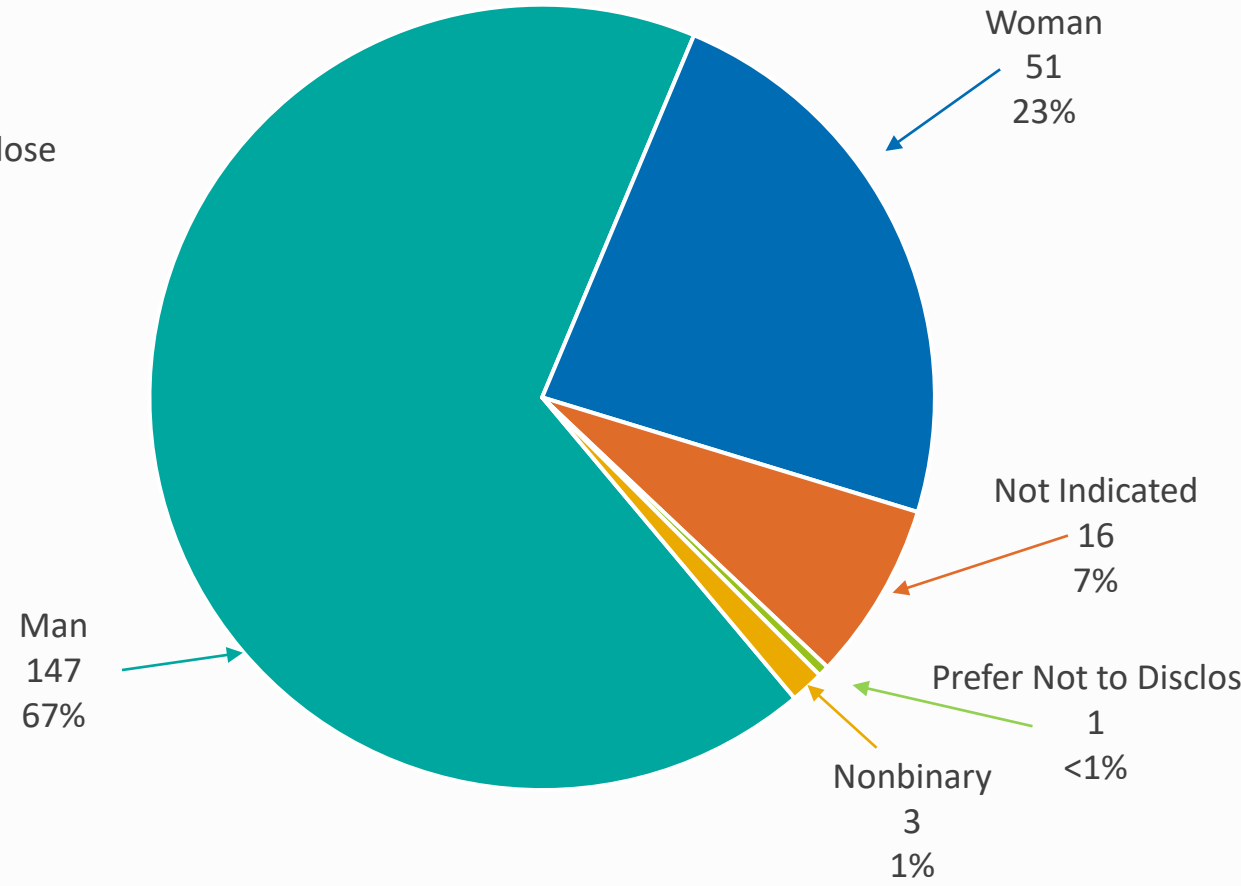
	US		Non-US		Total	
Nonstudent	192	33%	175	29%	367	62%
Student	120	21%	98	17%	218	38%
Total	312	54%	273	46%	585	

SIAG/LA Membership by Gender

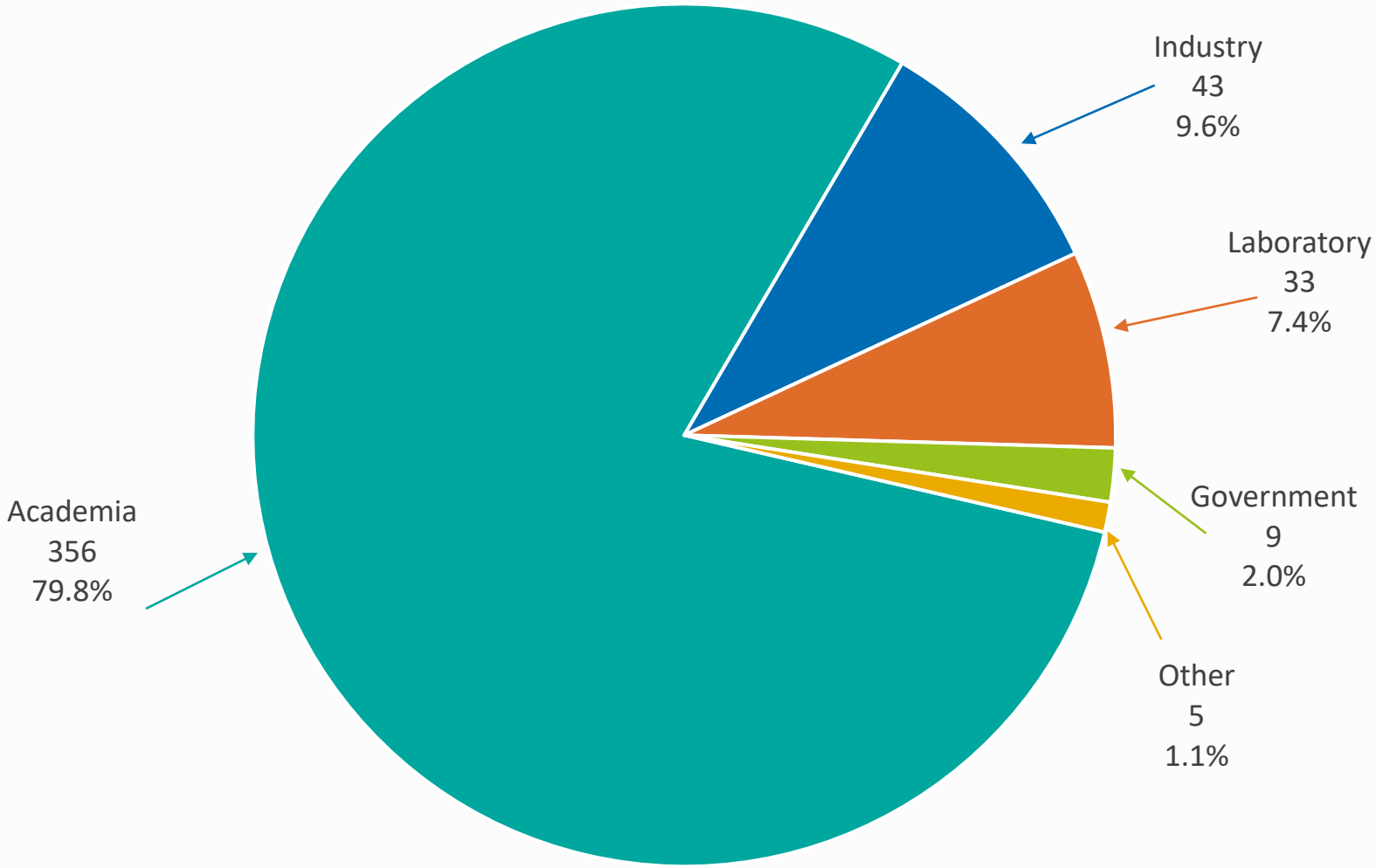
Nonstudents



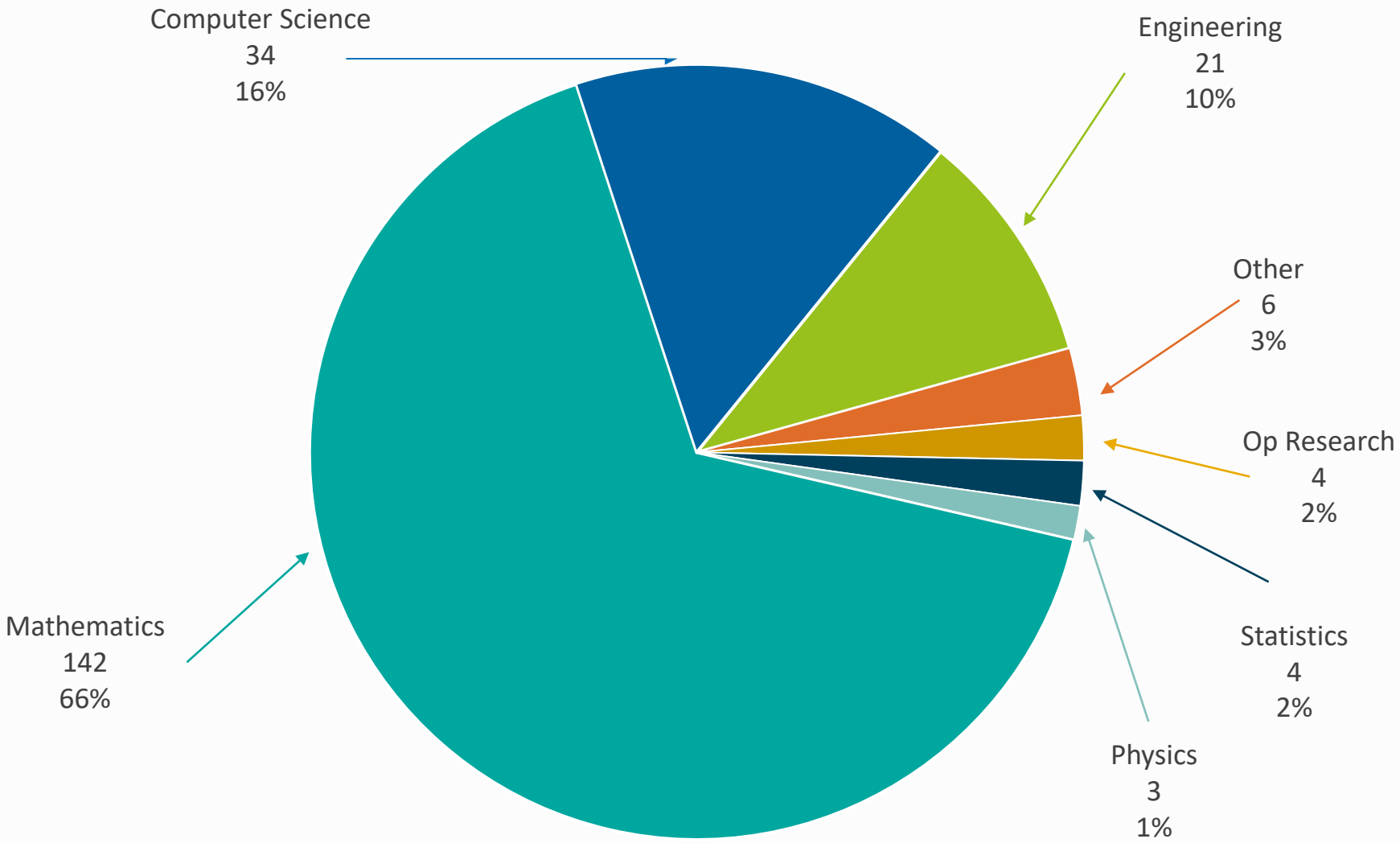
Students



SIAG/LA Membership by Employer Type



SIAG/LA Membership by Department Type



Other Business

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Secretary	Arvind K. Saibaba asaibab@ncsu.edu