2024 SIAG/UQ

SIAM Conference on Uncertainty Quantification

Uncertainty Quantification Business Meeting

Thursday, February 29th, 7:15-8:15pm CET
Tergeste, Hotel Savoia Excelsior Palace
Trieste, Italy

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SIAG/UQ Officers

Chair:

Amy Braverman

*

Vice Chair:

Adrian Sandu

*

Program Director:

Claudia Schillings

*

Secretary:

Emil Constantinescu

SIAG/UQ Announcements

- SIAM Engage:

    - https://engage.siam.org/communities/siag-uq-home?CommunityKey=cc2f5a14-a5c1-41e1-9fa8-0b71492544cb

- SIAG/UQ websites:

    - https://www.siam.org/membership/activity-groups/detail/uncertainty-quantification

      SIAM News: Story Ideas

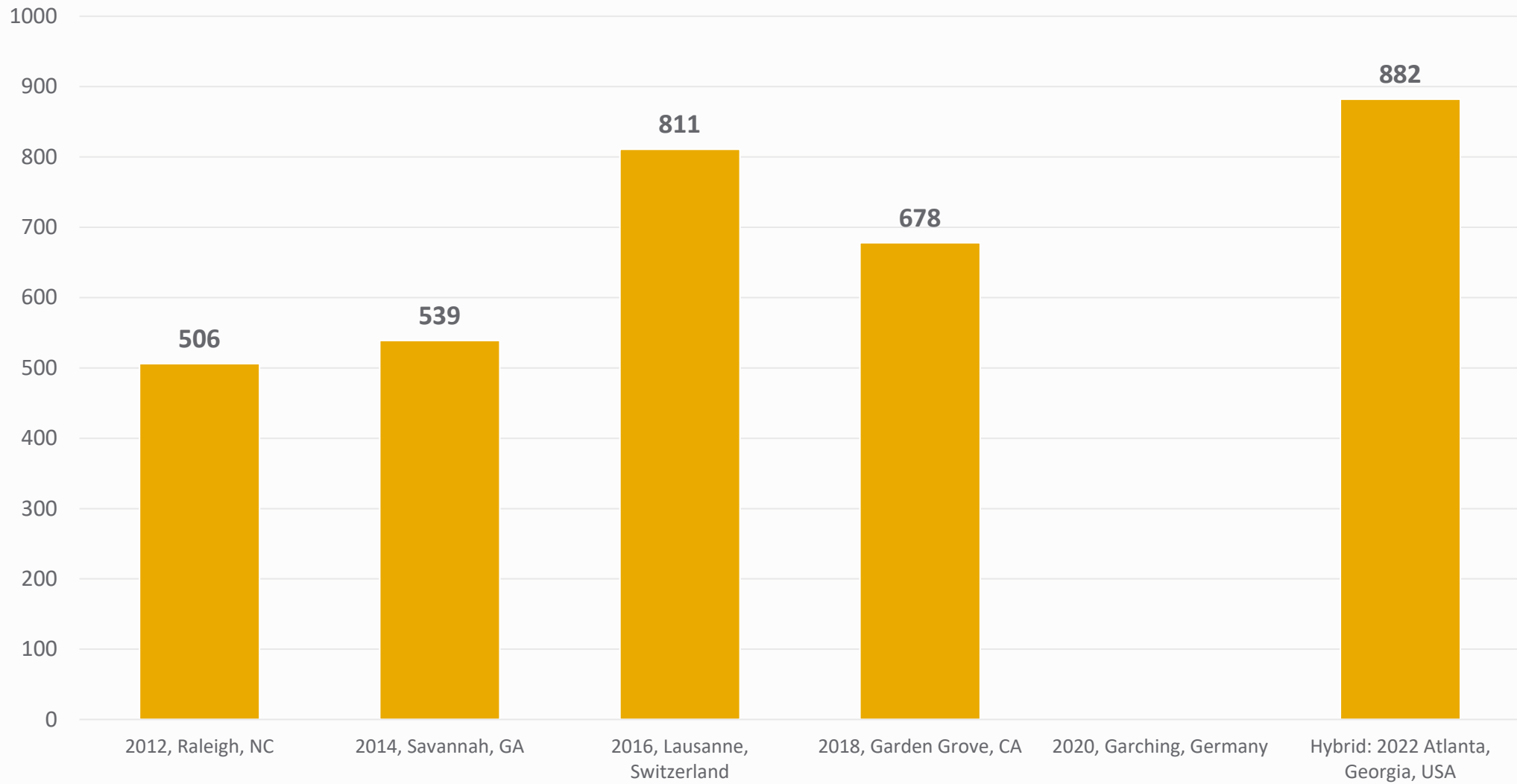- SIAM Blogs

- SIAG/UQ Leadership Suggestion Form:

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

SIAG/UQ Fellows

Class of 2022

James Crowley

Houman Owhadi

Class of 2023

Alina Chertock

SIAG/UQ Conference History

Society for Industrial and Applied Mathematics

SIAG/UQ Conference 2024

Organizing Committee Co-Chairs

Amy Braverman, NASA Jet Propulsion Laboratory, U.S.

Gianluigi Rozza, SISSA, Italy

Claudia Schillings, Freie Universität Berlin, Germany

*

Organizing Committee

Daniela Calvetti, Case Western University, U.S.

Jana de Wiljes, Ilmenau University of Technology, TU Ilmenau

Tapio Helin, Lappeenranta University of Technology, Finland

Emily Kang, University of Cincinnati, U.S.

Earl Lawrence, Los Alamos National Laboratory, U.S.

Siddhartha Mishra, ETH Zurich, Switzerland

Annalisa Quaini, University of Houston, U.S.

Lars Ruthotto, Emory University, U.S.

Adrian Sandu, Virginia Tech, U.S.

Aretha Teckentrup, University of Edinburgh, United Kingdom

Lorenzo Tamellini, CNR-IMATI Pavia, Italy

Thordis Thorarinsdottir, University of Oslo and the Norwegian Computing Center, Norway

SIAG/UQ Conference 2024

SIAG/UQ Early Career Prize

Perspectives on Stochastic Gradient Descent

Friday, March 1st, 1:30 PM - 2:15 PM

Room: Saturnia/Vulcania 1 - Stazione Marittima

The stochastic gradient descent (SGD) algorithm has been a staple in stochastic optimisation, the control of stochastic systems, and — probably most prominently — the training of deep neural networks. SGD allows to replace expectations in target functions by sample averages and, hence, sums over large data sets by sums over small subsampled data sets. Thus, stochastic optimisation problems become computationally accessible, machine learning problems become scalable. In deep learning, SGD has further objectives: the stochasticity aims to `implicitly' regularise the problem, it allows the trajectory to overcome local minimisers in nonconvex target functions, and it possibly even quantifies uncertainties.

In this talk, we discuss stochastic gradient descent in machine learning and analyse it using a novel continuous-time formulation. Here, we have a particular focus on implicit regularisation and uncertainty quantification.

Jonas Latz

University of Manchester, United Kingdom

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

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

DATES

THEMES

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*!
- Reciprocal member discount for members of SIMAI and Unione Matematica Italiana

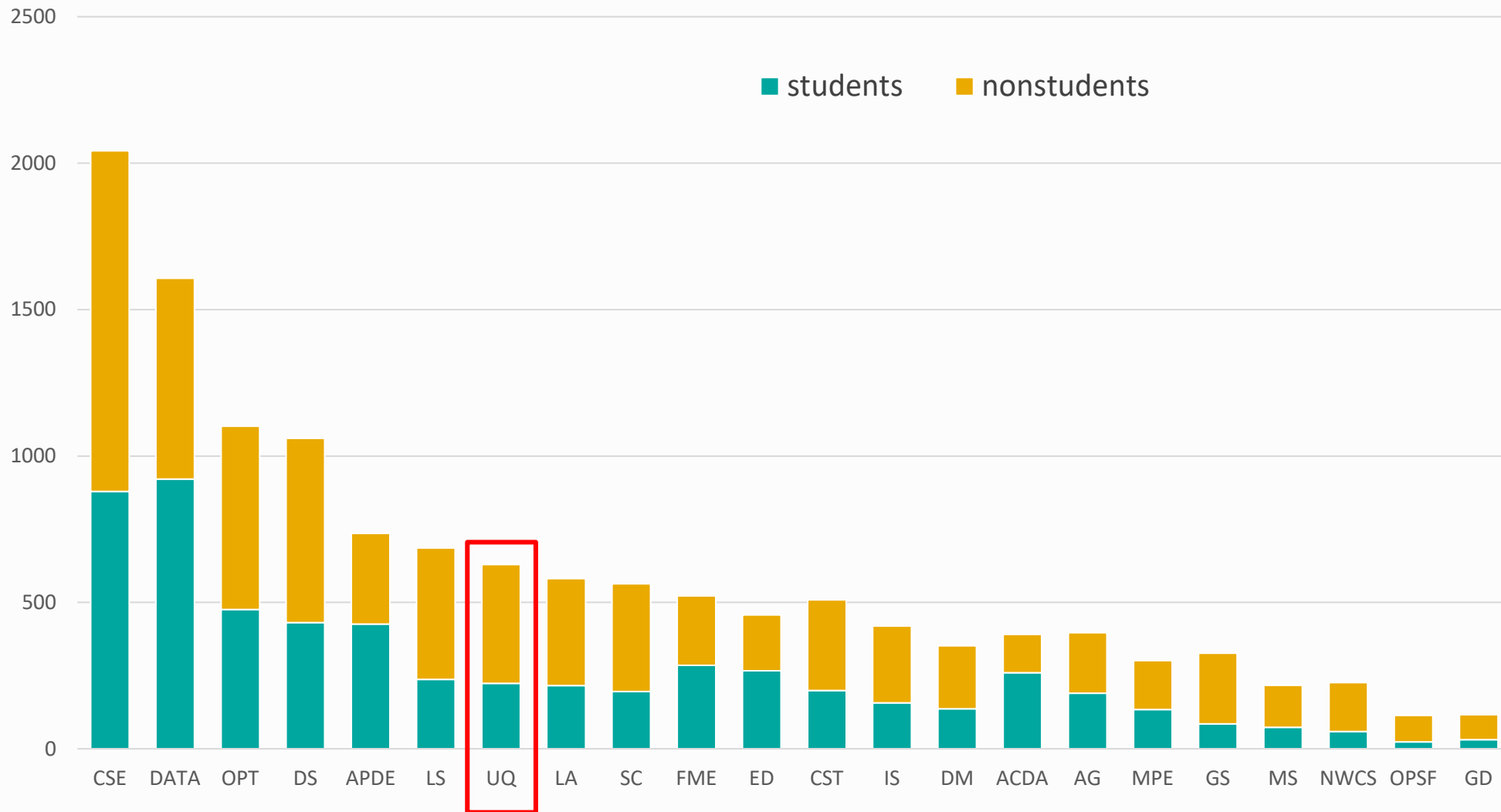## Nonmember attendees can save up to $160 their 2022 membership!
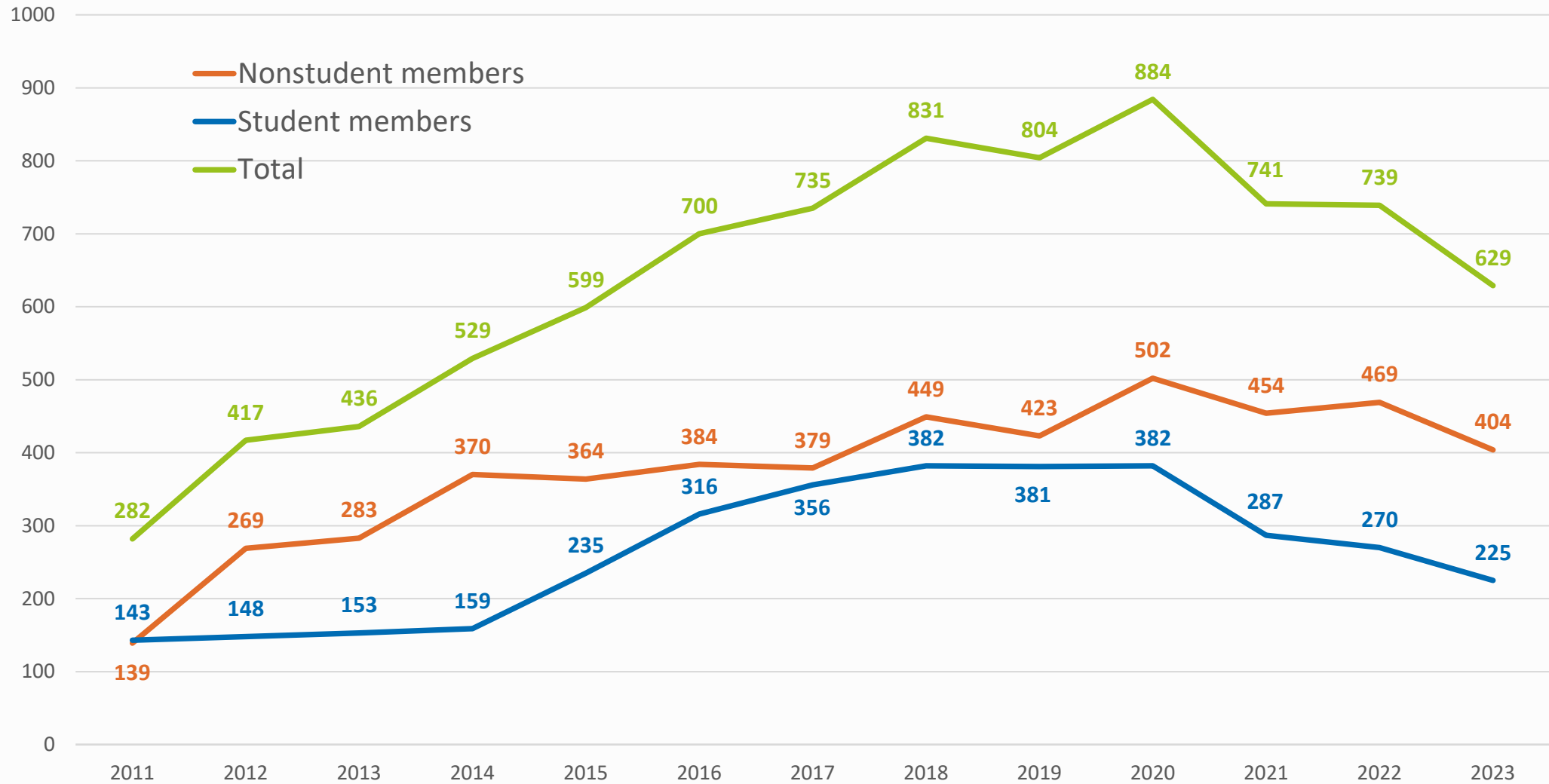
2024 SIAG/UQ

Membership Report

(data as of December 31, 2023)

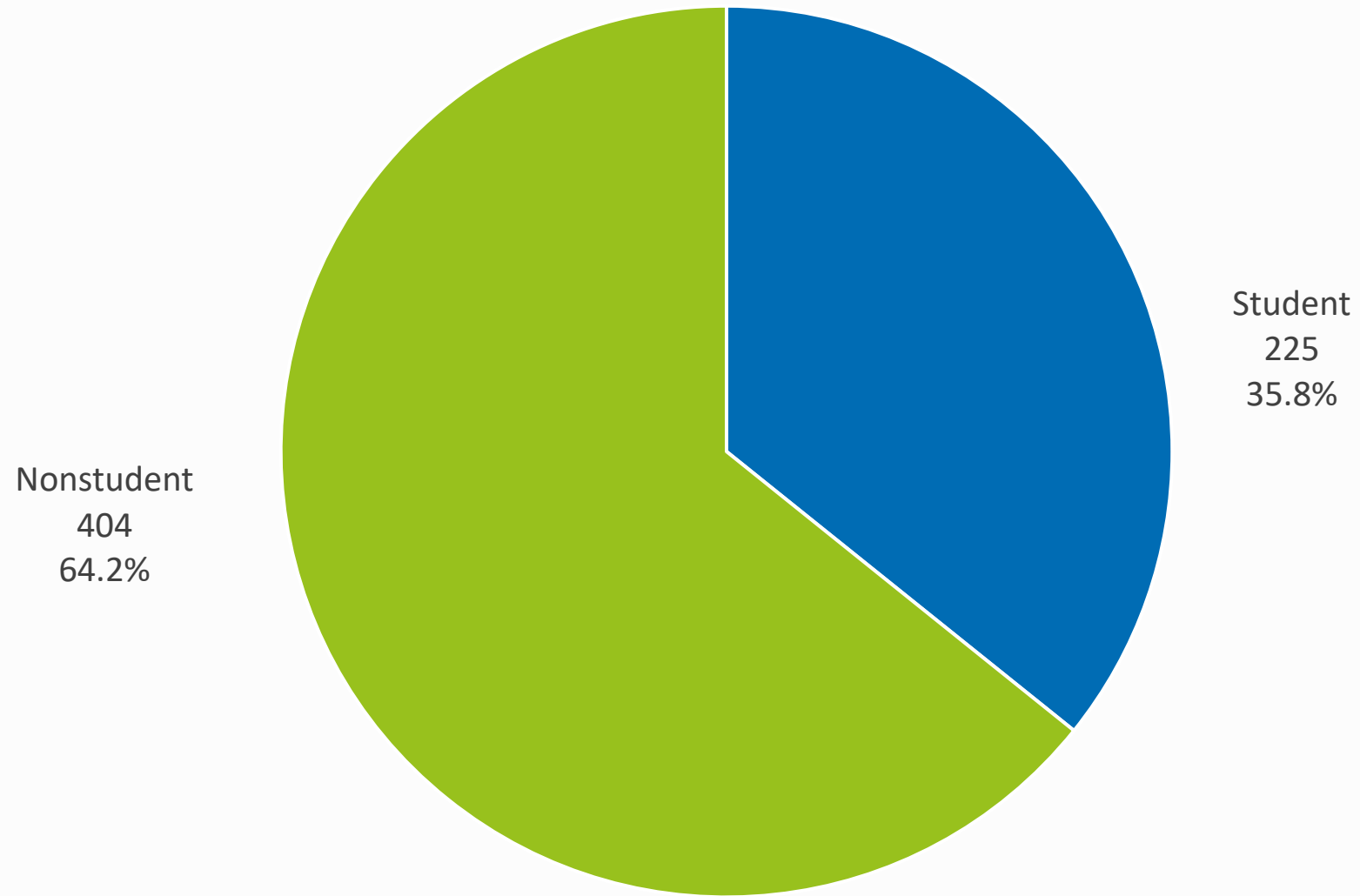**siam** | Society for Industrial and Applied Mathematics

SIAG Overall Membership

SIAG/UQ Membership Demographics

Nonstudent members
Student members
Total

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Nonstudent members	139	269	283	370	364	384	379	449	423	502	454	469	404
Student members	143	148	153	159	235	316	356	382	381	382	287	270	225
Total	282	417	436	529	599	700	735	831	804	884	741	739	629

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SIAG/UQ Membership Demographics

Student
225
35.8%

Nonstudent
404
64.2%

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SIAG/UQ Membership by Geography

	US		Non-US		Total	
Nonstudent	270	43%	134	21%	404	64%
Student	128	20%	97	16%	225	36%
Total	398	63%	231	37%	629	

SIAG/UQ Membership by Gender

Nonstudents

- Woman — 68 — 17%
- Not Indicated — 21 — 3.6%
- Prefer Not to Disclose — 8 — 2%
- Nonbinary — 3 — <1%
- Man — 330 — 75%

Students

- Woman — 47 — 21%
- Not Indicated — 10 — 4%
- Prefer Not to Disclose — 1 — .4%
- Man — 167 — 74%
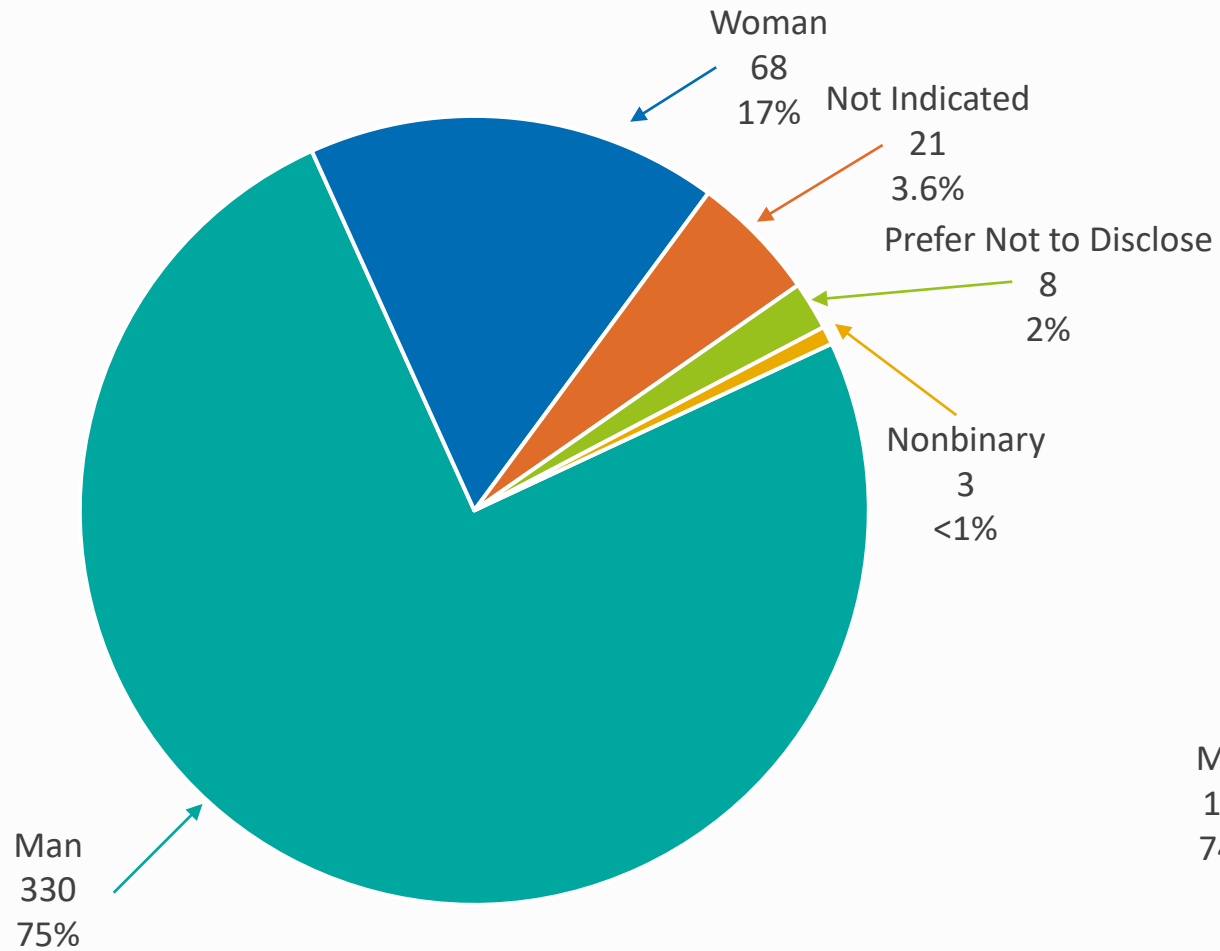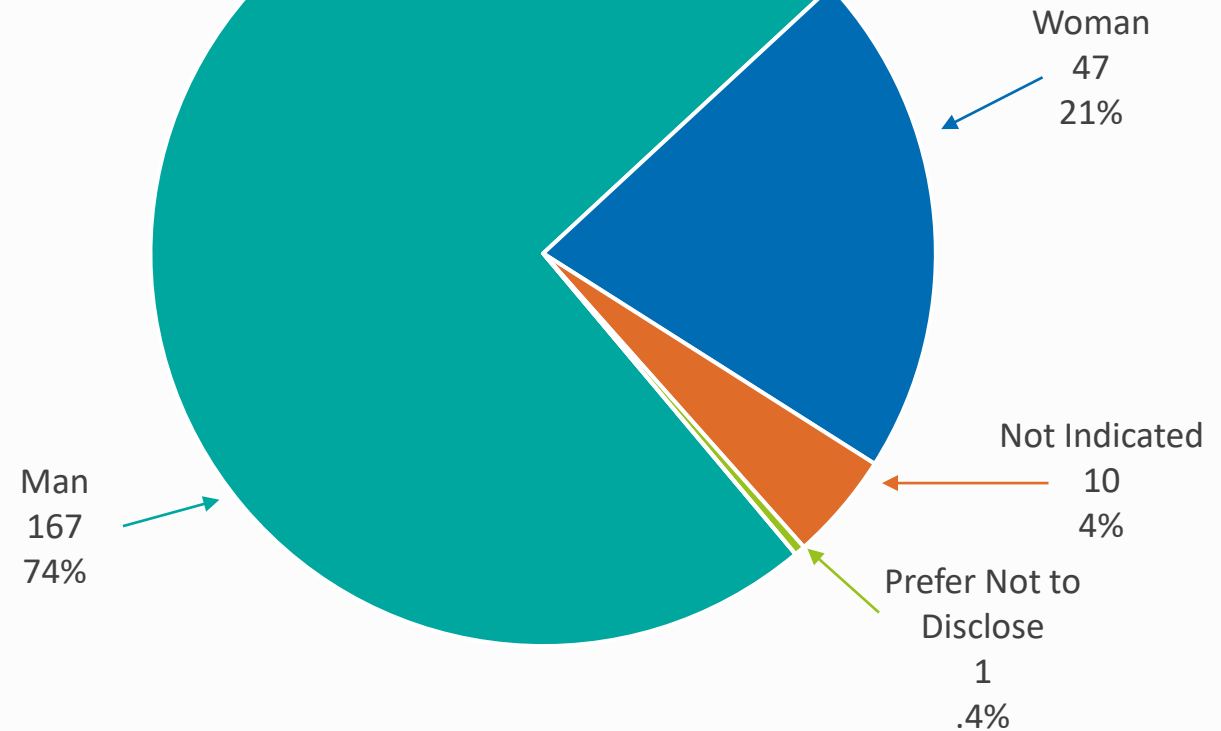
SIAG/UQ Membership by Employer Type

Laboratory
53
10.4%

Industry
37
7.3%

Government
22
4.4%

Other
9
1.7%

Academia
387
76.2%

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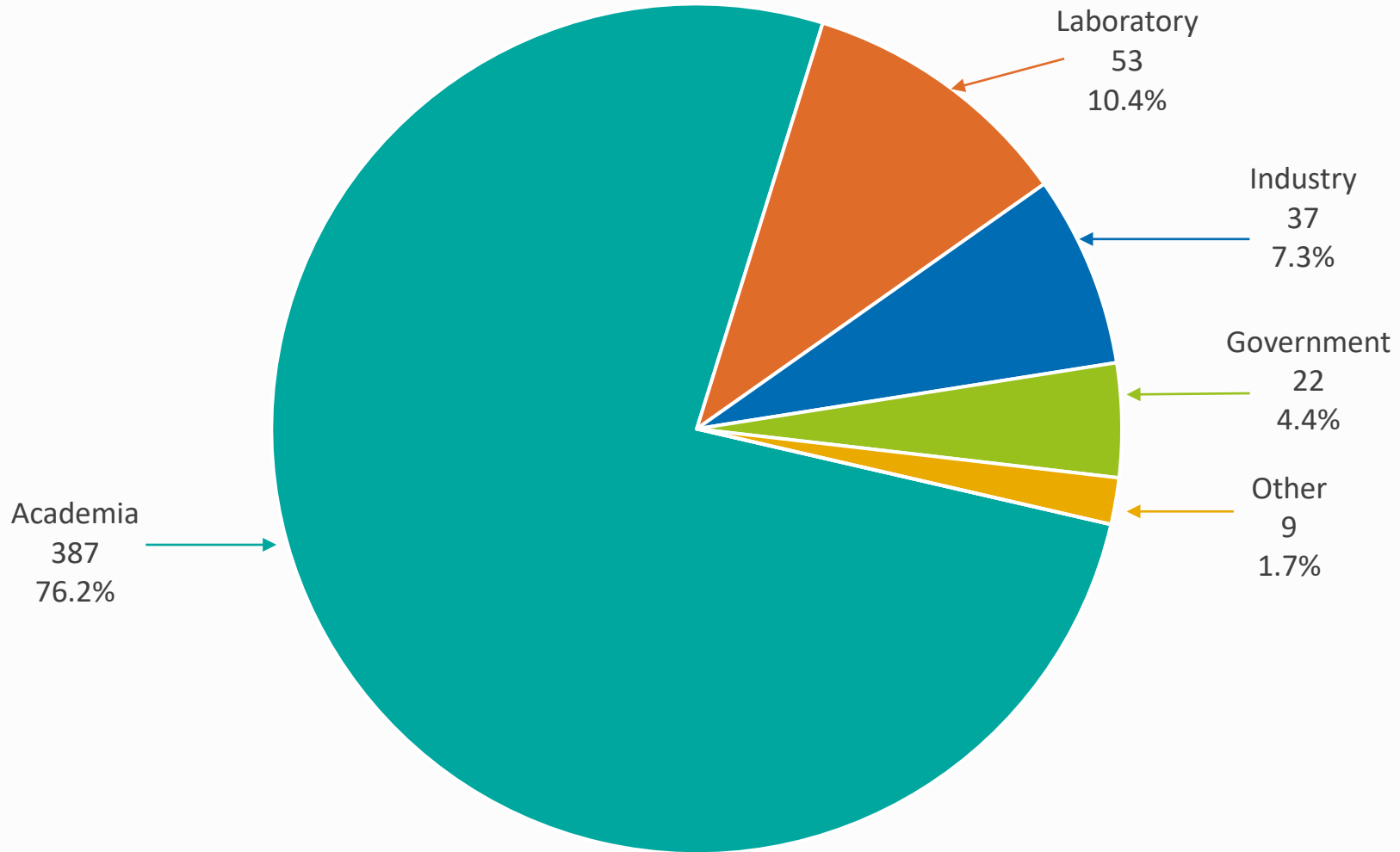
SIAG/UQ Membership by Department Type

Other Business
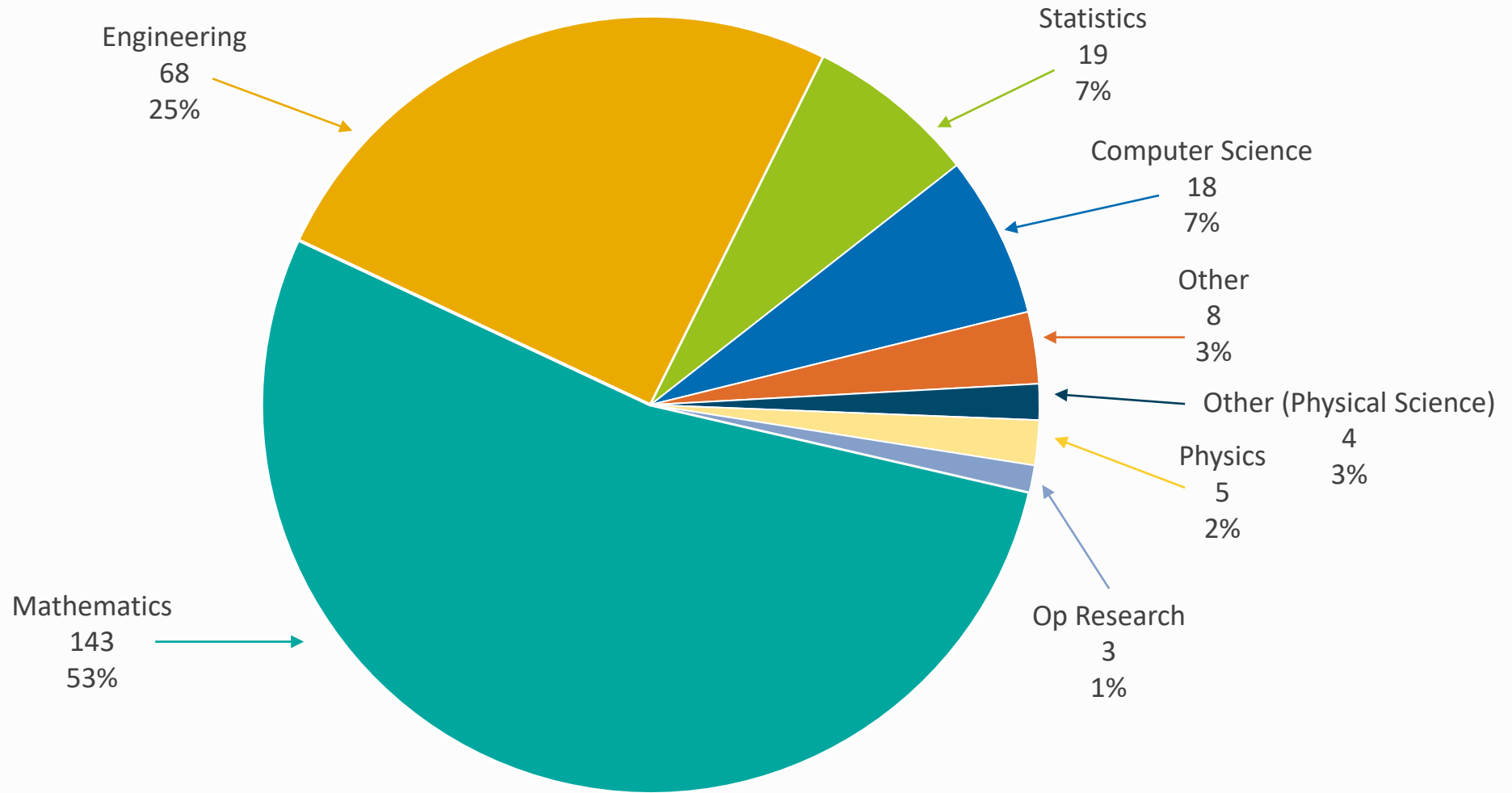
Society for Industrial and
Applied Mathematics

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Secretary — Emil Constantinescu

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