

2022 SIAG/UQ

Hybrid: SIAM Conference on
Uncertainty Quantification

Uncertainty Quantification Business
Meeting

Wednesday, April 13th, 6:30-7:30 pm ET
Peachtree C&D - 8th Floor
Westin Peachtree Plaza
Atlanta, Georgia, U.S.

siam
2022 | Conference on
Uncertainty Quantification

2022 SIAG/UQ BUSINESS MEETING

siam | Society for Industrial and
Applied Mathematics

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*

Vice Chair:

Elisabeth Ullmann

*

Program Director:

Daniela Calvetti

*

Secretary:

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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 2021

Habib Najm

Class of 2022

James Crowley
Houman Owhadi

SIAG/UQ Conference History



SIAG/UQ Conference 2022

Organizing Committee Co-Chairs

Daniela Calvetti, Case Western Reserve University, U.S.
Heikki Haario, Lappeenranta University of Technology, Finland
Douglas Nychka, Colorado School of Mines, U.S.



Organizing Committee

Mihai Anitescu, Argonne National Laboratory, U.S.
Derek Bingham, Simon Fraser University, Canada
Andres Christen, Centro de Investigación en Matemáticas, Mexico
Julianne Chung, Virginia Tech, U.S.
Christopher Drovandi, Queensland University of Technology, Australia
Gianluca Iaccarino, Stanford University, U.S.
Peter Lawrence, National Center for Atmospheric Research, U.S.
Jessica Matthews, North Carolina State University, U.S.
Noémi Petra, University of California, Merced, U.S.
Stephan Sain, Jupiter Intelligence, U.S.
Sebastian Reich, Universität Potsdam, Germany
Tanja Tarvainen, University of Eastern Finland, Finland

SIAG/UQ Conference 2022

SIAG/UQ Early Career Prize

Scalable Gaussian Process for Computer Model Emulation and Uncertainty Quantification

Wednesday, April 13th, 10:40 AM - 11:15 AM ET

Room: Peachtree C&D - 8th Floor

Computer experiments are ubiquitously used in science and engineering, yet the computational complexity can prohibit its applications for many large-scale systems. In this talk, we will introduce the Gaussian process emulator as a surrogate model for approximating computer model simulations and uncertainty quantification. The new results concern emulating computer models with massive coordinates, high-dimensional inputs and functionals. We will review the stochastic differential equation representation of Gaussian processes with Matern covariance, and applications of Kalman filter, as exact, computationally efficient alternatives. Our extensions include the generalized probabilistic principal component analysis and Gaussian orthogonal latent factor processes, for modeling incomplete matrix observations of correlated data. We have developed software packages in R and MATLAB that implement the Gaussian process emulator and some of the computationally scalable alternatives. Applications include emulating the TITAN2D model of pyroclastic flows, ground deformation simulation by COMSOL Multiphysics, ab initio molecular dynamics simulations, and cellular migration simulations.

Mengyang Gu

University of California, Santa Barbara, U.S.

siam₂₀₂₂ | Annual Meeting

July 11th – July 15th, 2022

David L Lawrence Convention Center

Pittsburgh, Pennsylvania, U.S. **HYBRID**



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.

Organizing Committee Co-Chairs

Sunčica (Sunny) Čanić, University of California, Berkeley, U.S.

Edmond Chow, Georgia Institute of Technology, U.S.

siam[®] | Annual Meeting 2022

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David L Lawrence Convention Center
Pittsburgh, Pennsylvania, U.S. **HYBRID**

Held Jointly with:

- SIAM Conference on Applied Mathematics Education (ED22)
- SIAM Conference on the Life Sciences (LS22)
- SIAM Conference on Mathematics of Planet Earth (MPE22)

Tracks of Sessions by SIAM SIAGs:

- Applied Linear Algebra
- Materials Science

Registration Deadline:

- June 13th, 2022

Hotel Registration Deadline:

- June 13th, 2022

Travel Fund Application Deadline:

- April 11, 2022
- *For all hybrid conferences, support will be prioritized for students attending the conference in-person.*

More information available at:

<https://www.siam.org/conferences/cm/conference/an22>

SIAM Career Fair

Wednesday, April 20, 2022, 11 a.m. to 5 p.m. Eastern

<https://www.siam.org/careers/resources/siam-career-fairs>

- Job seekers can register for free!
- Have an opening? Booth packages starting at \$695
- Previous participants include:

Amazon

Amgen

Applied Research Associates, Inc.

Argonne National Laboratory

Astellas

The Boeing Company

Cadence

Cerebras

Chinese Academy of Science

ExxonMobil

Jane Street

Krell Institute

Lawrence Berkeley National Laboratory

Lawrence Livermore National Laboratory

Los Alamos National Laboratory

MathWorks

Medpace

Merck

NASA Langley Research Center

National Security Agency

Naval Nuclear Laboratory

Oak Ridge National Laboratory

Pacific Northwest National Laboratory

Pfizer

Sandia National Laboratories

SAS

SigOpt, an Intel Company

Simulations Plus

Gene Golub SIAM Summer School

Financial Analytics: Networks, Learning, and High Performance Computing

August 1–12, 2022

Gran Sasso Science Institute (GSSI), L'Aquila, Italy

The school will offer an introduction to Quantitative Risk Management in Finance, Energy and Commodity Markets, Machine Learning and Financial Technology, and Mean field Games. Students will be exposed to the economic and managerial implications of these subjects, and to tools of applied probability, optimization, and computational techniques.



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

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!*

Nonmember attendees can save up to \$155 their 2022 membership!

2022 SIAG/UQ

Membership Report

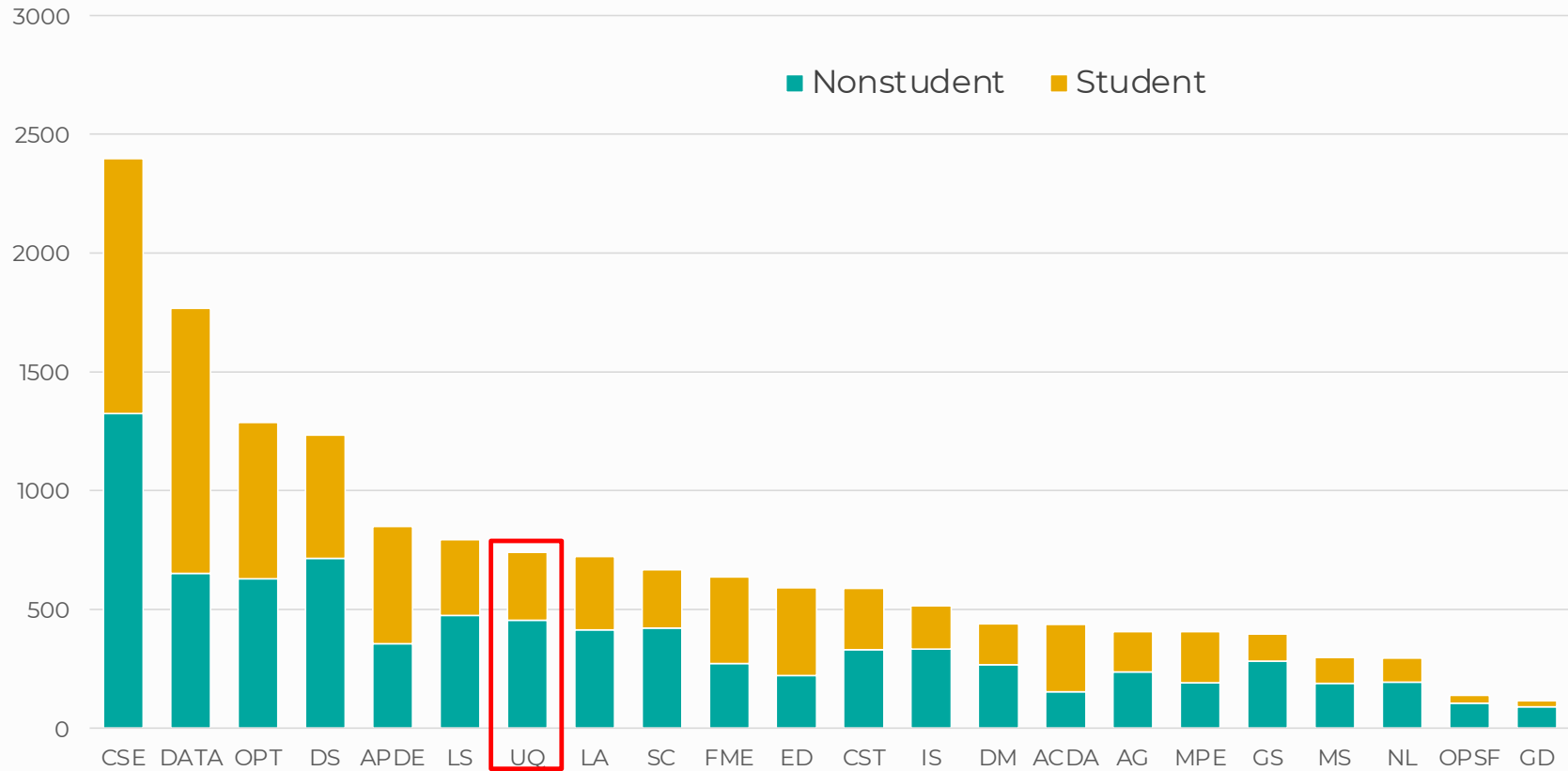
(data as of December 31, 2021)

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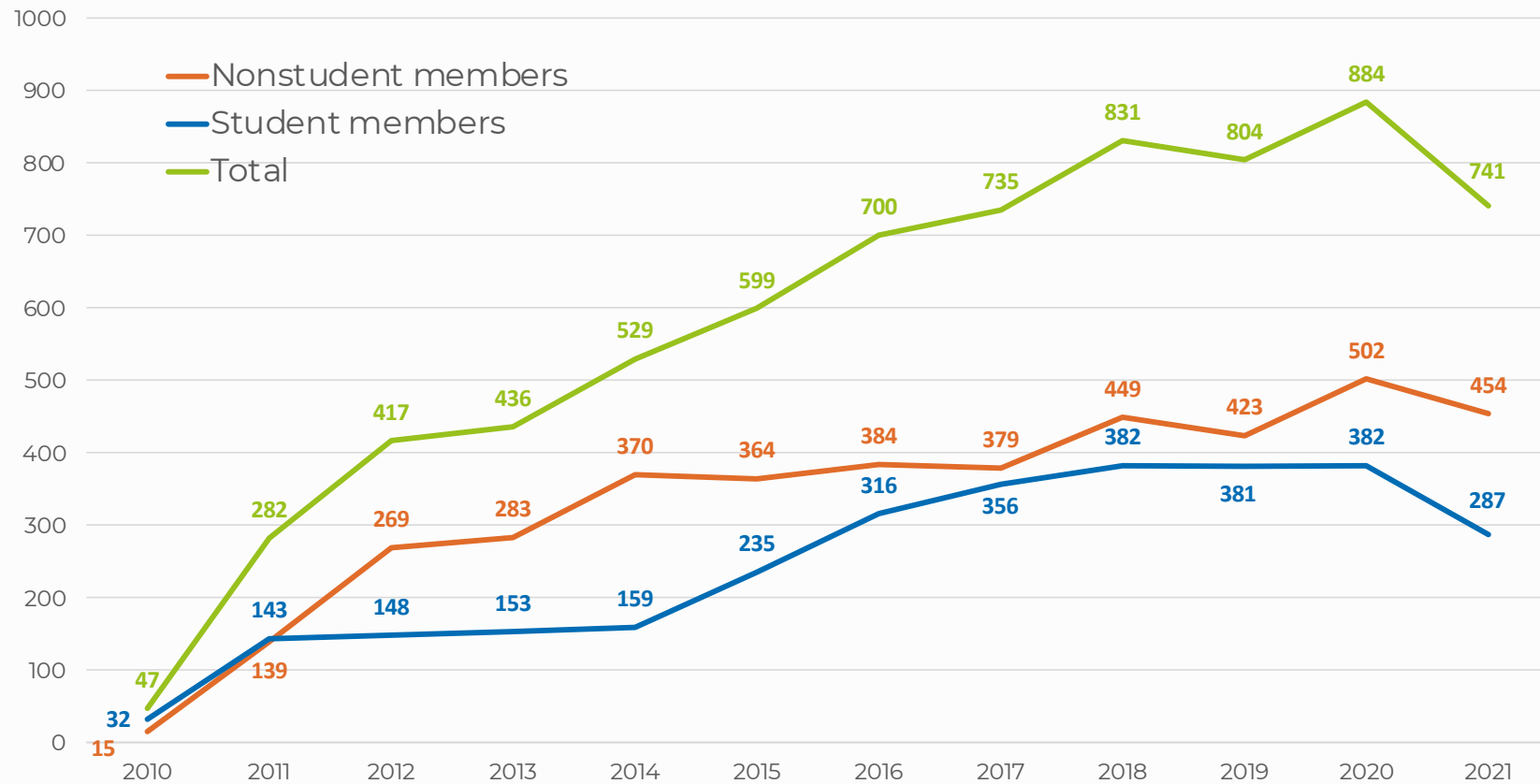
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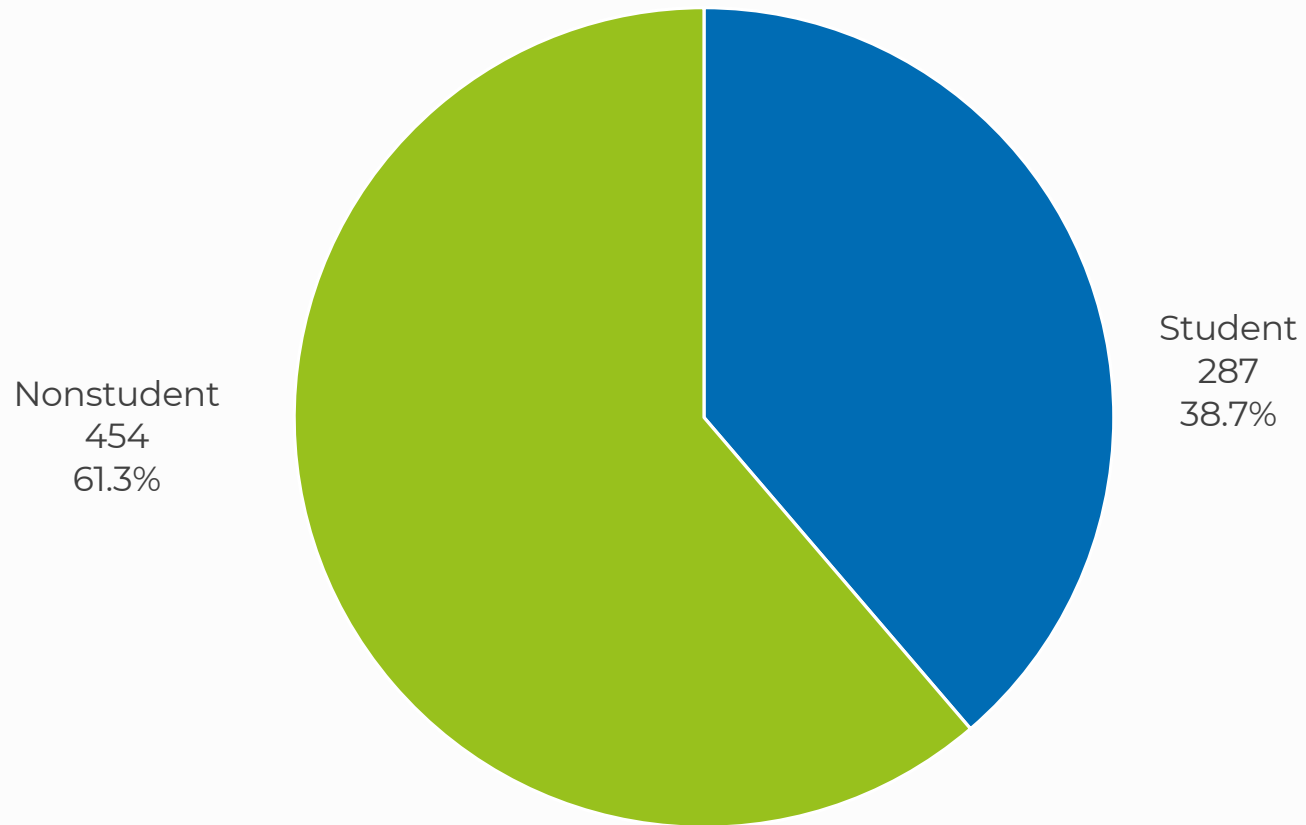
SIAG Overall Membership



SIAG/UQ Membership Demographics



SIAG/UQ Membership Demographics

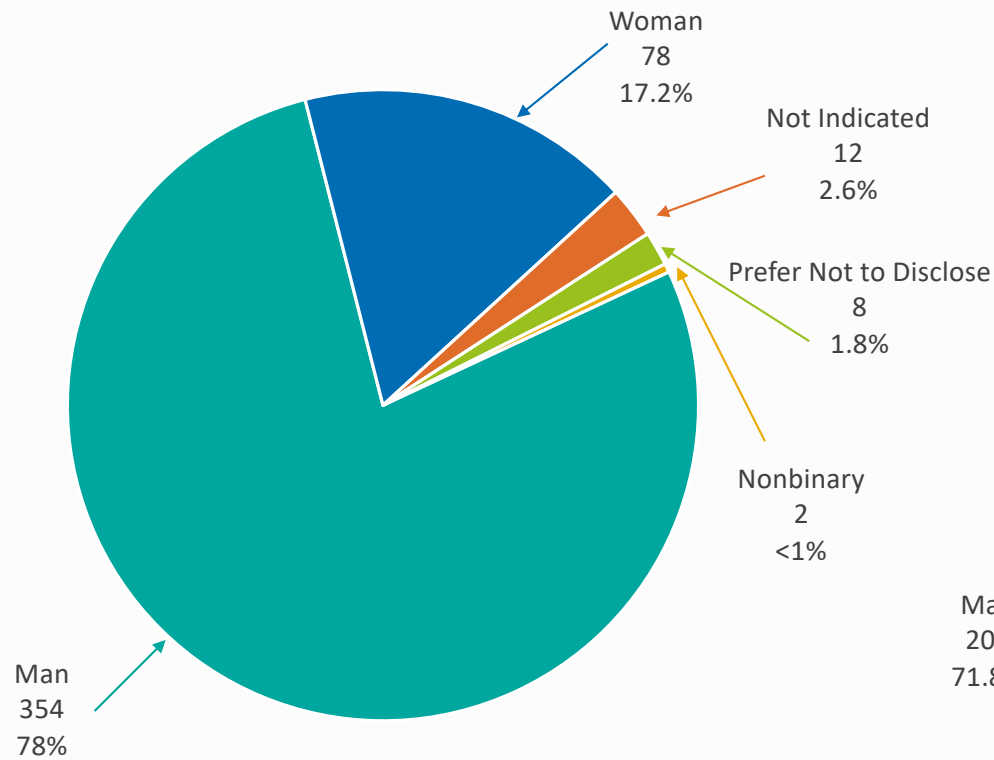


SIAG/UQ Membership by Geography

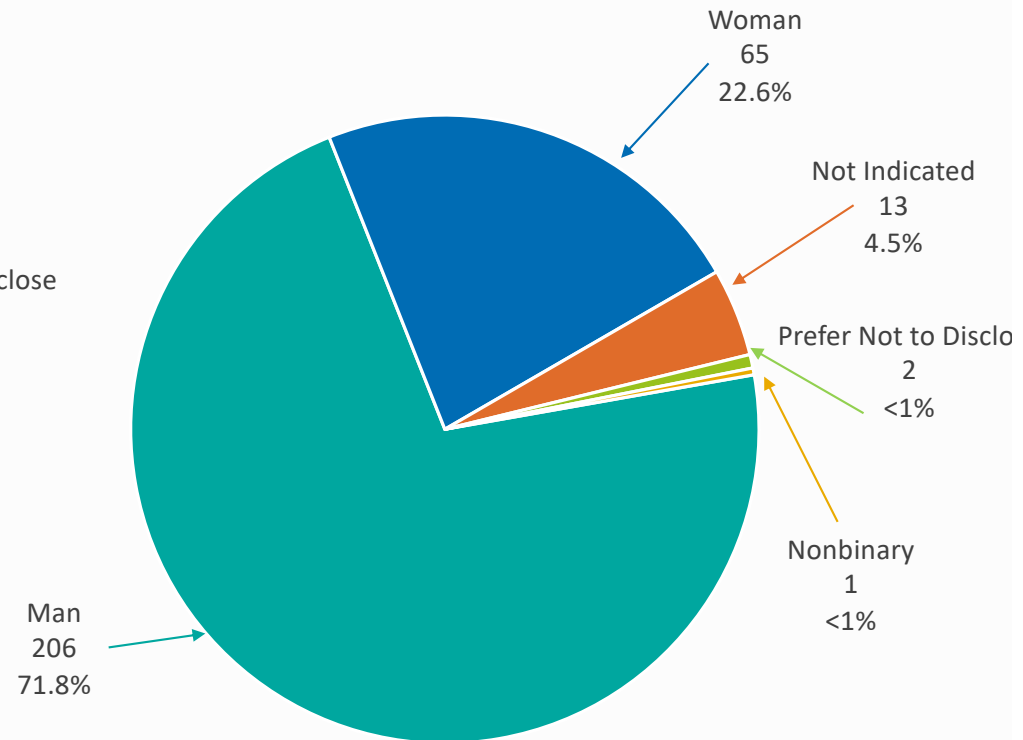
	US		Non-US		Total	
Nonstudent	284	38.3%	170	22.9%	454	61.3%
Student	181	24.4%	106	14.3%	287	38.7%
Total	465	62.8%	276	37.2%	741	

SIAG/UQ Membership by Gender

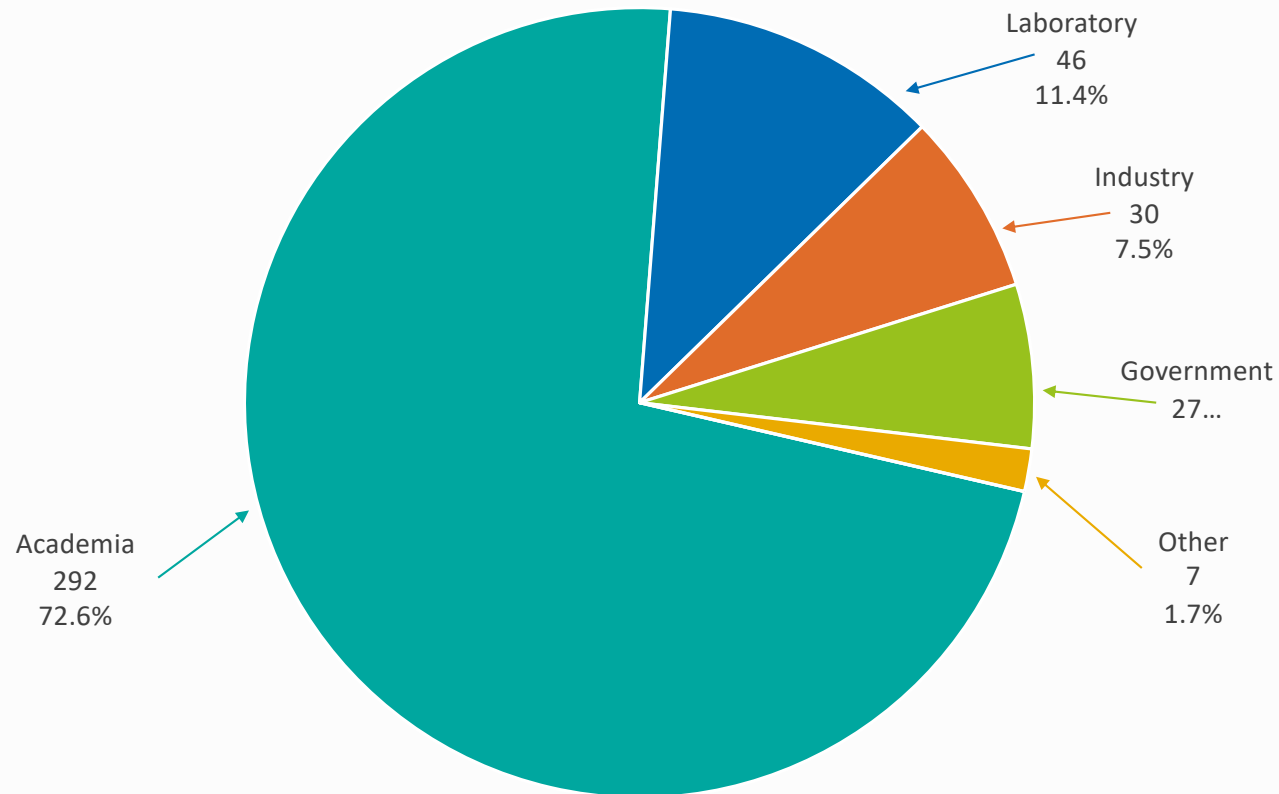
Nonstudents



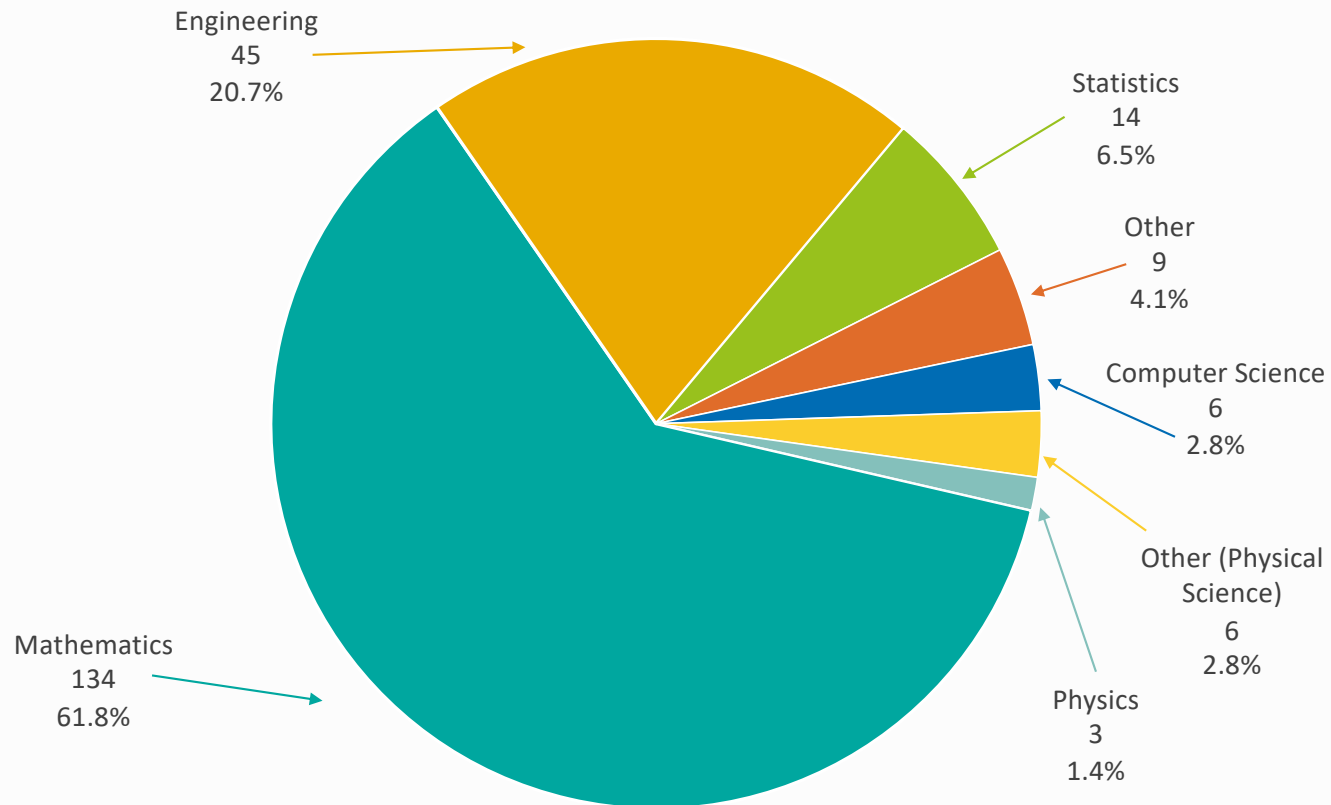
Students



SIAG/UQ Membership by Employer Type



SIAG/UQ Membership by Department Type



Other Business

SIAM SESSIONS: ORGANIZED AT JOINT MATH MEETINGS
INCREASED SIAM COLLABORATION WITH INTERNATIONAL
SOCIETY OF PHARMACOMETRICS (ISOP)

Contacts

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Secretary Rebecca Morrison
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