2021 SIAG/GD

SIAM Conference on Geometric and Physical Modeling

Geometric Design Business Meeting

Tuesday, August 28th, 3:10-4:10pm ET

2021 SIAG/GD BUSINESS MEETING

SIAG/GD Past Officers

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Tim Strotman

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Carlotta Giannelli

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Vice Chair:

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Program Director:
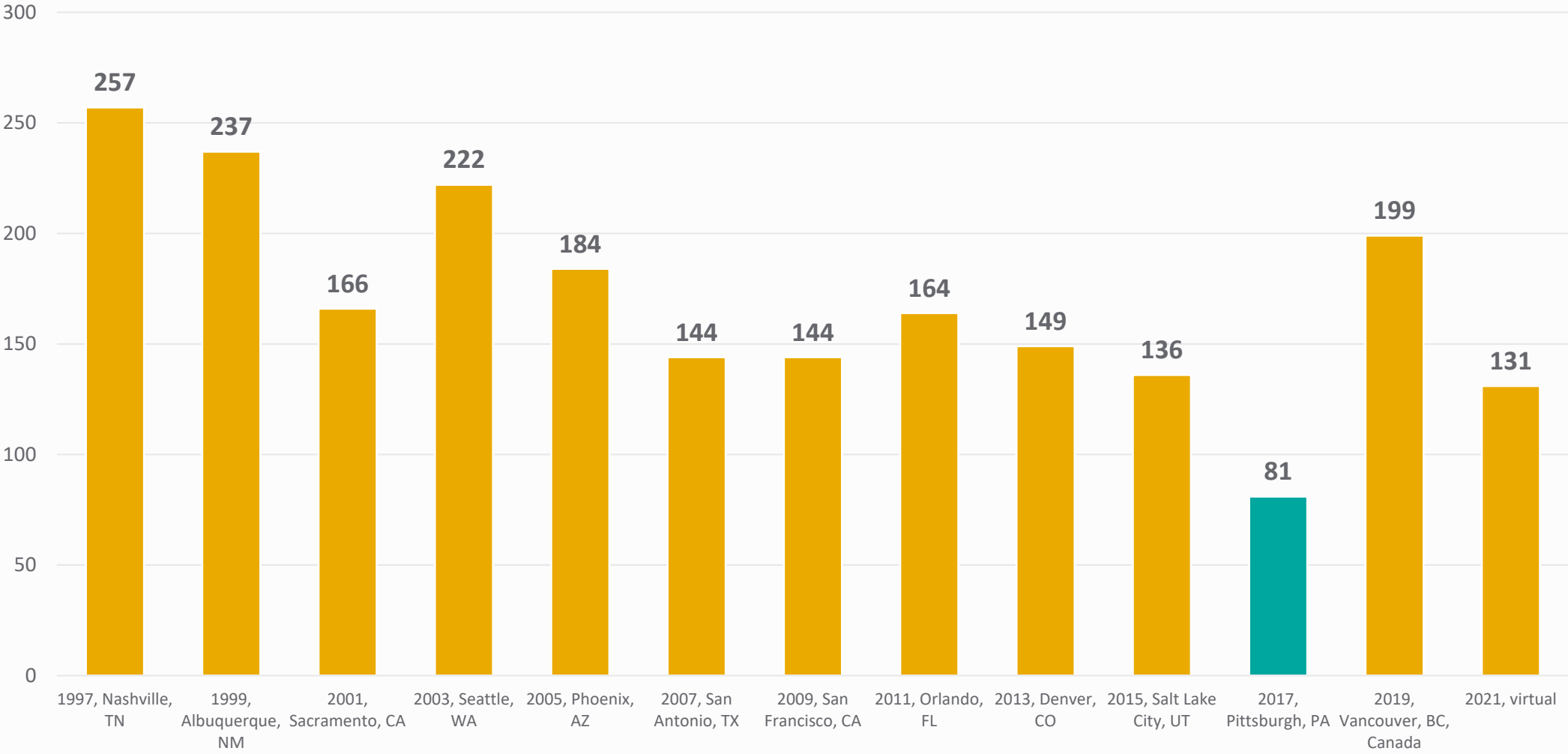
Lucia Romani

*

Secretary:

David Großmann

SIAG/GD Announcements

- SIAM Engage

    - SIAG/GD electronic mailing list updates

    - SIAM Blogs

- SIAM News: Story Ideas

- SIAG/GD websites:

    - https://www.siam.org/membership/activity-groups/detail/geometric-design

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

- SIAG/GD mentoring program

- SIAG/GD Leadership Suggestion Form:

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

SIAG/GD Conference History

Society for Industrial and Applied Mathematics

SIAG/GD GD/SPM21

Organizing Committee Co-Chairs

Rida Farouki, University of California, Davis, U.S.

Xin Li, Louisiana State University, U.S.

Géraldine Morin, University of Toulouse, France

Jorg Peters, University of Florida, U.S.

Organizing Committee

Michael Barton, Basque Center for Applied Mathematics, Spain

Georges-Pierre Bonneau, University of Grenoble, France

Carlotta Giannelli, University of Florence, Italy

Jiri Kosinka, University of Groningen, Netherlands

Saigopal Nelaturi, Palo Alto Research Center, U.S.

Daniele Panozzo, Courant Institute of Mathematical Sciences, New York University, U.S.

The complete conference committee list can be online at https://www.siam.org/conferences/cm/conference/gdspm21

SIAG/GD Early Career Prize

Turning Planar Materials Into Curved Structures
Tuesday, September 28th, 11:10 AM - 12:00 PM ET

Recent advances in material science and digital fabrication provide promising opportunities for product design, mechanical and biomedical engineering, robotics, architecture, art, and science. Engineered materials and personalized fabrication are revolutionizing manufacturing culture and having a significant impact on various scientific and industrial works. As new fabrication technologies emerge, effective computational tools are needed to fully exploit the potential of digital fabrication. In this talk, I will discuss how we use the insights from discrete differential geometry to enable designs not possible before and design new materials with specific properties and performance. We introduce a novel computational method for design and fabrication with auxetic materials. The term auxetic refers to solid materials with a negative Poisson ratio — when the material is stretched in one direction, it also expands in all other directions. In particular, we study 2D auxetic materials in the form of a triangular linkage that exhibits auxetic behavior at the macro scale. This stretching, in turn, allows the flat material to approximate doubly-curved surfaces, making it attractive for fabrication. Furthermore, we develop a computational method for designing novel deployable structures via programmable auxetics, i.e., spatially varying triangular linkage optimized to directly and uniquely encode the target 3D surface in the 2D pattern. In contrast to most previous work, our approach is scale-invariant. It can be applied to realize

a broad class of complex curved surfaces, ranging from tiny medical implants to large scale architectural domes.

Mina Konakovic Lukovic
Massachusetts Institute of Technology, U.S.

SIAG/GD Membership Demographics

SIAG/GD Membership Demographics

Student
44
31,4%

Nonstudent
96
68,6%

SIAM total

27%

73%
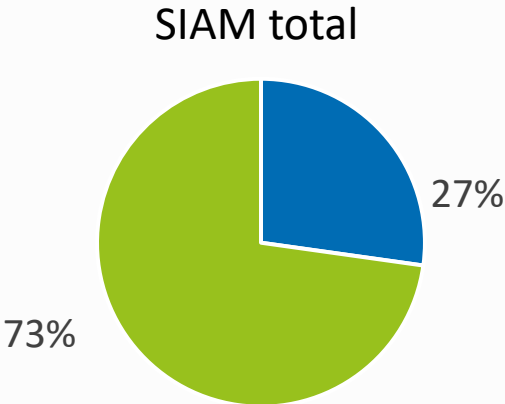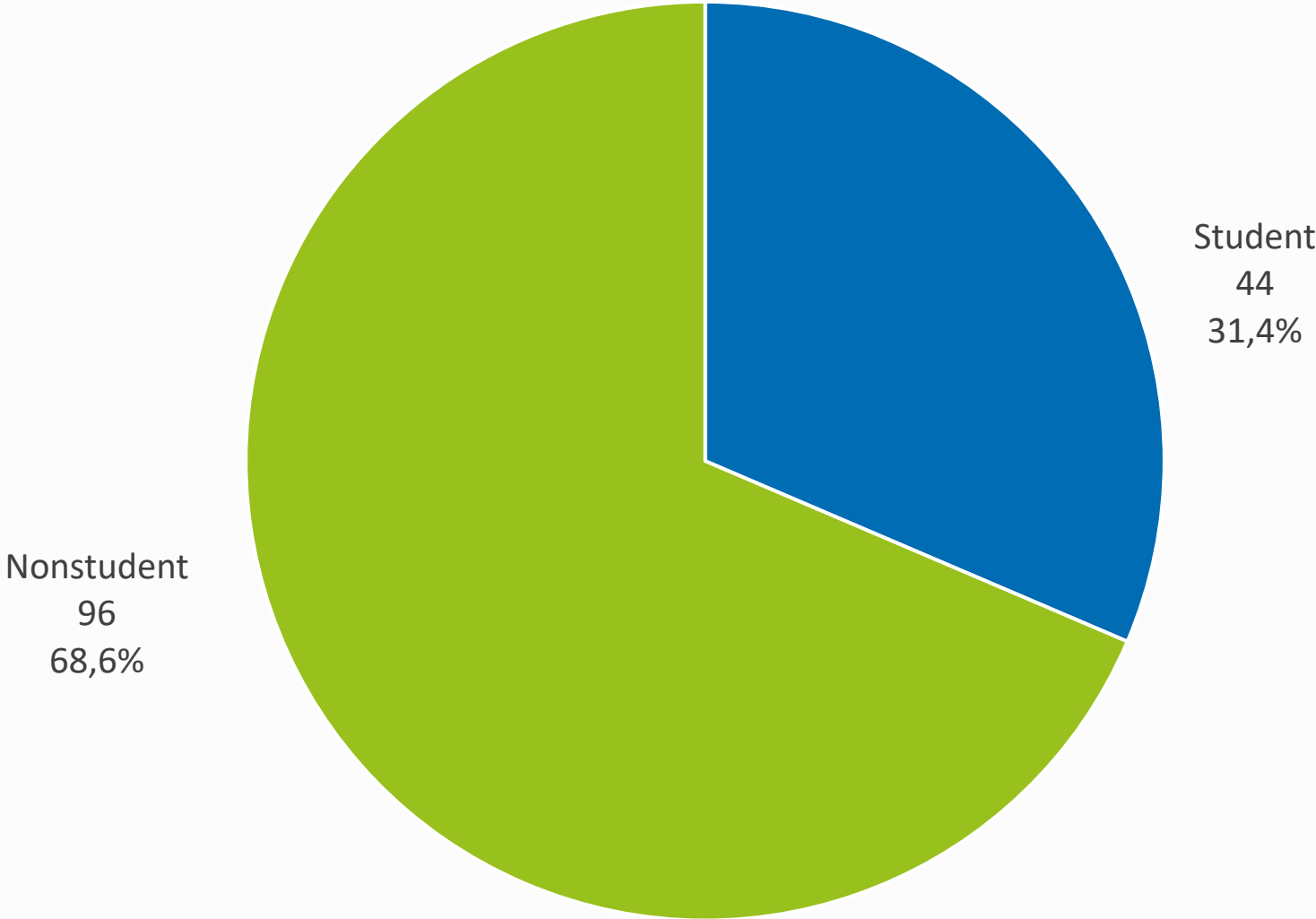
SIAG/GD Membership by Geography

	US		Non-US		Total	
Nonstudent	55	39%	41	29%	96	68%
Student	33	24%	11	8%	44	32%
Total	88	63%	52	37%	140	

SIAG/GD Membership by Gender

Nonstudents

Woman
14
14.6%

Not Indicated
7
7.3%

Prefer Not to Disclose
2
2.1%

Man
73
76%

Students

Woman
16
36.4%

Man
20
45.5%

Not Indicated
8
18.2%
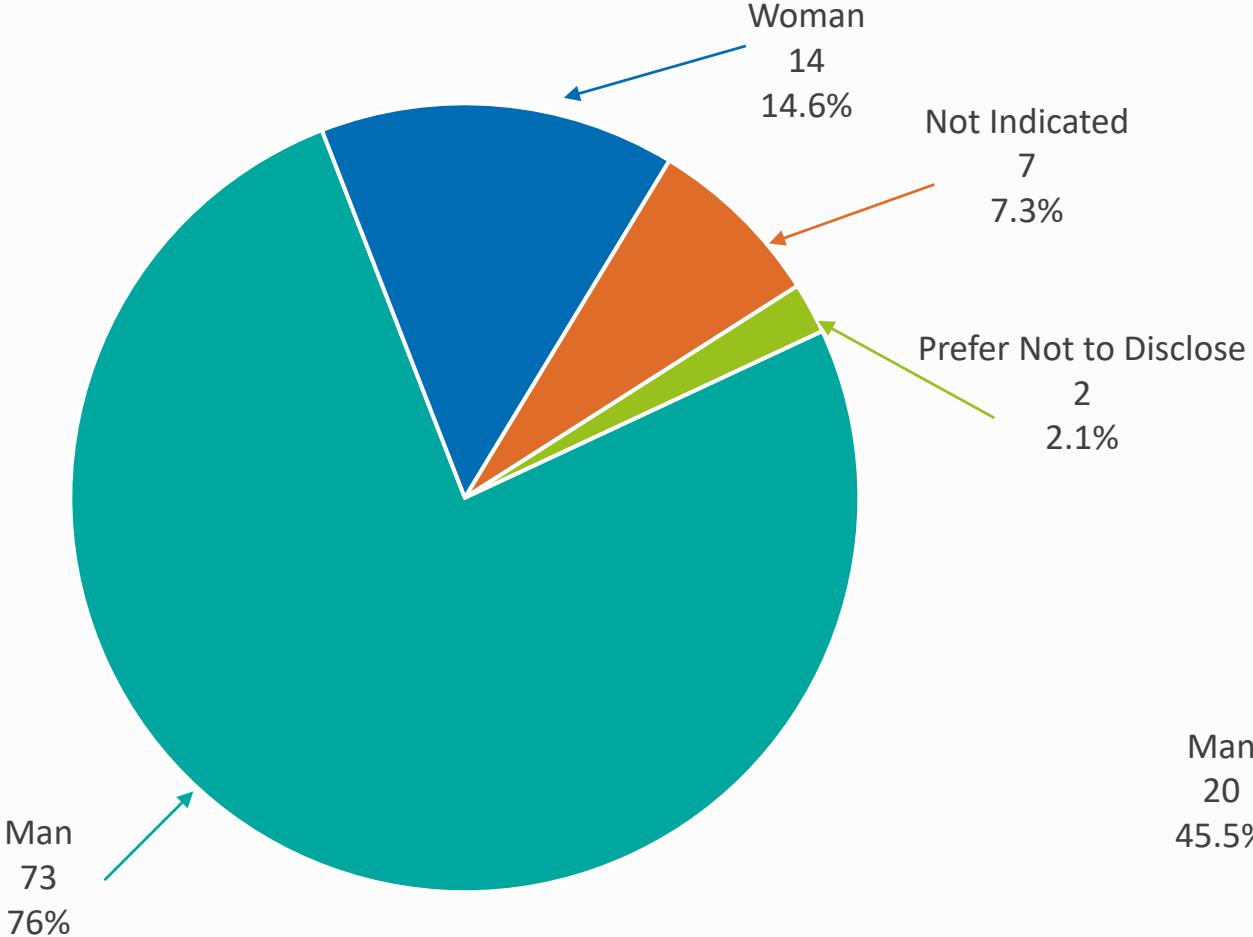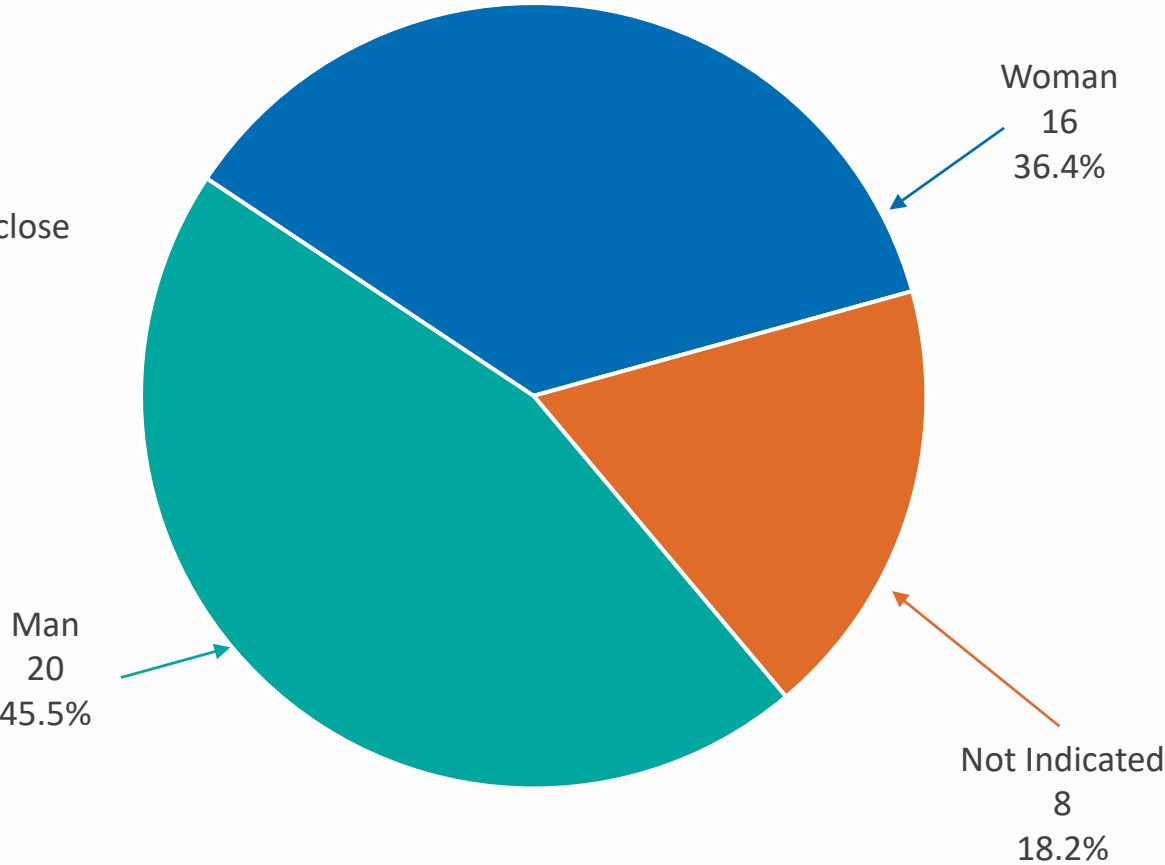
SIAG/GD Membership by Employer Type

Industry
15
19,2%

Laboratory
4
5,1%

Other
3
3,8%

Academia
56
71,8%
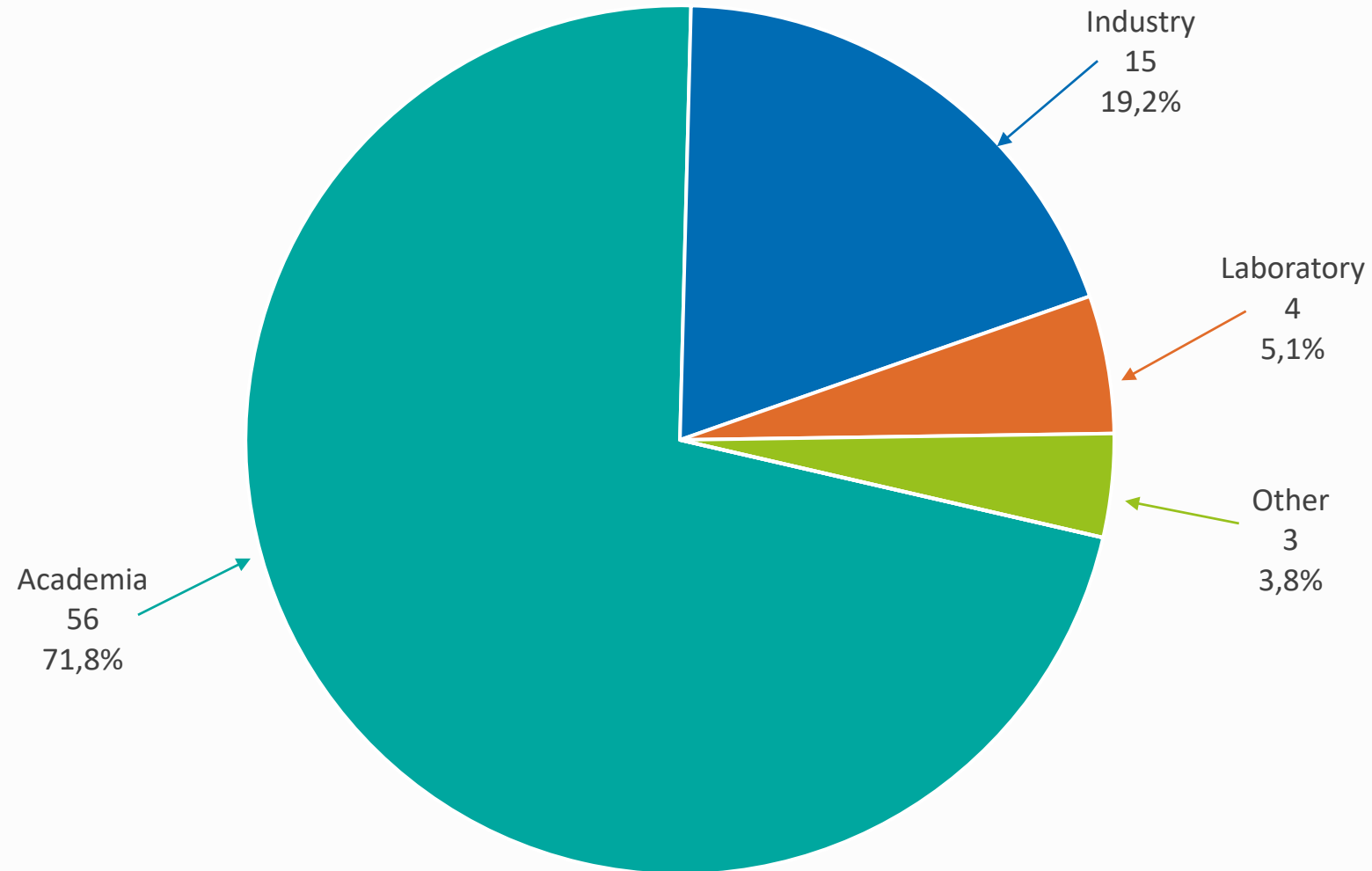
SIAG/GD Membership by Department Type

Engineering
8
28.6%

Computer Science
5
17.9%

Mathematics
14
50%

Other
1
3.6%
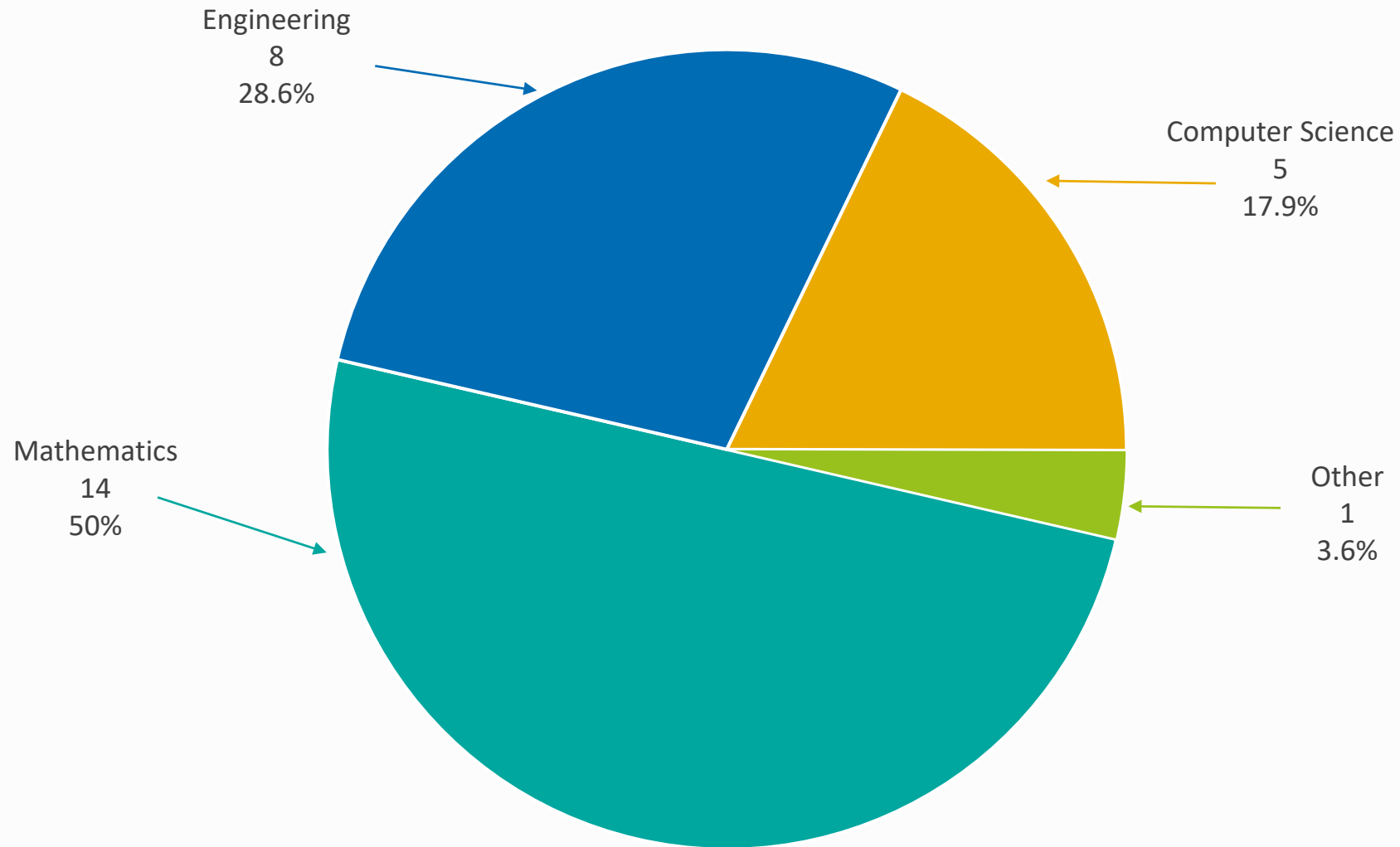
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- Spouse may join as Associate Member

- *SIAM Unwrapped*
- Vote in SIAM Elections
- Eligible to Hold Office
- Eligible for Committee Appointments
- <mark>Nominate SIAM Fellows</mark>
- Be Nominated as a SIAM Fellow
- <mark>Nominate 2 Students for Free Membership</mark>
- Eligible for Group Insurance

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

Application Deadline: February 7, 2022

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: siam.org/students/g2s3

Other Business

Contacts

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