

**SIAM Conference on  
Computational Geometric Design**



**June 17-19, 2019**  
Simon Fraser University, Downtown Campus  
Vancouver, Canada

#SIAMGD19

2019 SIAG/GD BUSINESS MEETING



# 2019 SIAG/GD

## SIAM Conference on Computational Geometric Design

### Business Meeting

**Tuesday, June 18, 2019**  
5:30pm-6:30 pm  
JRS 1420  
Simon Fraser University Downtown Campus

## SIAG/GD Officers

**Chair:**  
Rida Farouki  
\*

**Vice Chair:**  
Timothy Strotman  
\*

**Program Director:**  
Carlotta Gianelli  
\*

**Secretary:**  
Tom Cashman



2019 SIAG/GD BUSINESS MEETING

## SIAG/GD Thank you to the 2017/18 Officers

### Chair:

Kai Hormann

\*

### Vice Chair:

Heidi Dahl

\*

### Program Director:

Carolina Beccari

\*

### Secretary:

Bonita Saunders

## SIAG/GD Announcements

- SIAG/GD electronic mailing list: [siag-gd@siam.org](mailto:siag-gd@siam.org)
- SIAG/GD websites:
  - <https://www.siam.org/membership/Activity-Groups/detail/geometric-design>
  - [http://wiki.siam.org/siag-gd/index.php/Main\\_Page](http://wiki.siam.org/siag-gd/index.php/Main_Page)
  - SIAM News: Story Ideas
- SIAM Blogs

## SIAG/GD Fellows

Class of 2018

Helmut Pottmann

## SIAG/GD Conference 2019

### Organizing Committee Co-Chairs

**Kai Hormann**, Università della Svizzera italiana, Lugano, Switzerland

**Hao (Richard) Zhang**, Simon Fraser University, Canada

**Local Organizer: Ali Mahdavi-Amiri**, University of Kansas, USA

\*

### Program Co-Chairs

**Carolina Beccari**, University of Bologna, Italy

**Ligang Liu**, University of Science and Technology of China, China

**Michael Scott**, Brigham Young University, USA

\*

### Organizing Committee

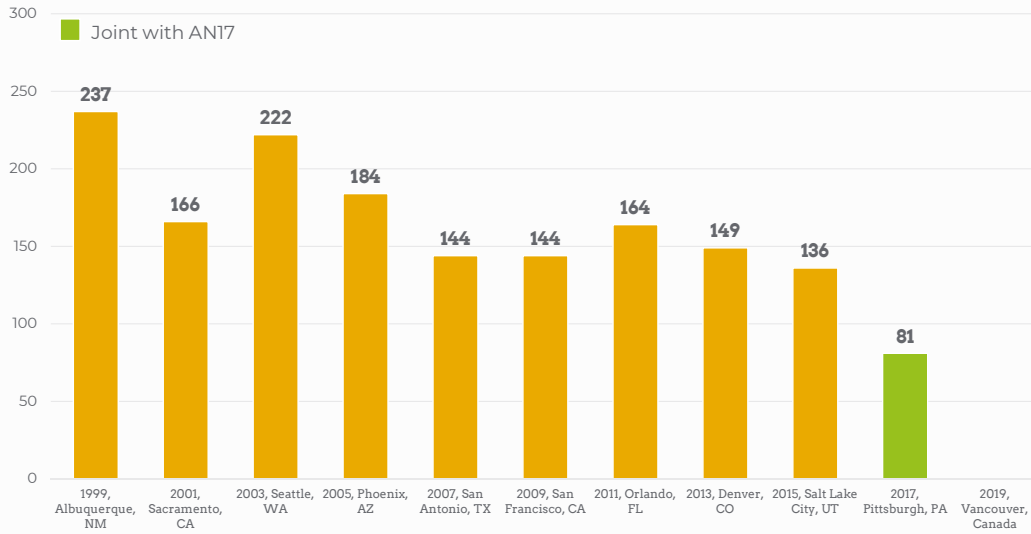
**Thomas Grandine**, Boeing, USA

**Stefanie Hahmann**, University Grenoble, France

**Sara McMains**, University of California Berkeley, USA

**Helmut Pottman**, Technische Universität, Austria

## SIAG/GD Conference History



## SIAG/GD Conference 2019

**SIAM Activity Group on Geometric Design Early Career Prize**

# Future conferences?

LOCATION

TIMING

PROGRAM COMMITTEE

## SIAM Annual Meeting

2019

- No Annual Meeting in 2019
- Supporting 9<sup>th</sup> International Congress on Industrial and Applied Mathematics (ICIAM 2019)

2020

- Annual Meeting 2020 held jointly with The Annual Meeting of The Canadian Applied and Industrial Mathematics Society (CAIMS)/Société Canadienne de Mathématiques Appliquées et Industrielles (SCMAI)
- July 6<sup>th</sup>-July 10<sup>th</sup>, 2020
- Sheraton Centre Toronto Hotel
- Toronto, Ontario, Canada
- Call for participation September 2019

## ICIAM 2019



The Congress will take place at the 'Campus de Blasco Ibáñez' of the Universitat de València.

SIAM is a member of the International Council for Industrial and Applied Mathematics (ICIAM)

ICIAM 2019 is being organized by SeMA (Sociedad Española de Matemática Aplicada), member of ICIAM.

## Gene Golub SIAM Summer School

### 2019 High Performance Data Analytics

June 17<sup>th</sup>-28<sup>th</sup>, 2019

Paul Langevin CNRS Conference Center in Aussois, France

### 2020 Theory and Practice of Deep Learning

July 20<sup>th</sup>-31<sup>st</sup>, 2020

AIMS South Africa, Muizenberg, Cape Town, South Africa

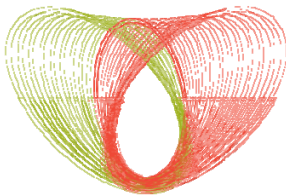
**2021** Anticipated deadline for submission of Letter of Intent January 31<sup>st</sup>, 2020

## Join SIAM Today!

### *Benefits of SIAM Membership Include.....*

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- Spouse may join as Associate Member
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- Eligible for Committee Appointments
- Nominate SIAM Fellows
- Be Nominated as a SIAM Fellow
- Nominate 2 Students for Free Membership
- Eligible for Group Insurance

**SIAM Conference on  
Computational Geometric Design**



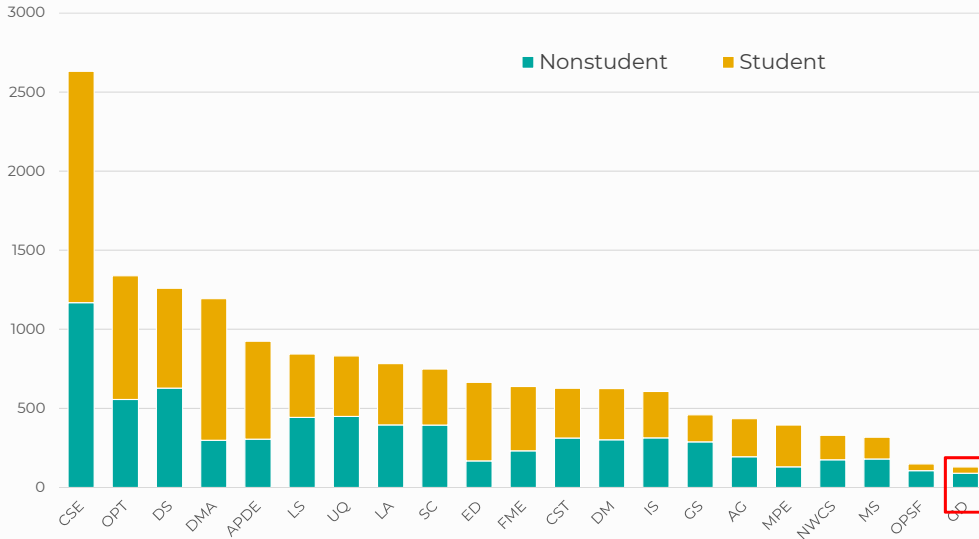
**June 17-19, 2019**  
Simon Fraser University, Downtown Campus  
Vancouver, Canada

# 2019 SIAG/GD

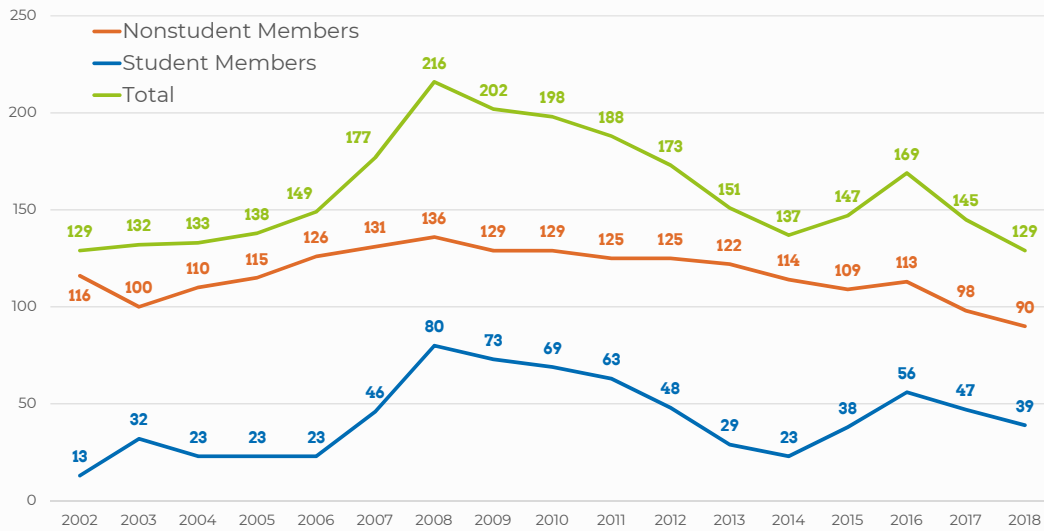
## Membership Report

*(data as of December 31, 2018)*

# SIAG Overall Membership

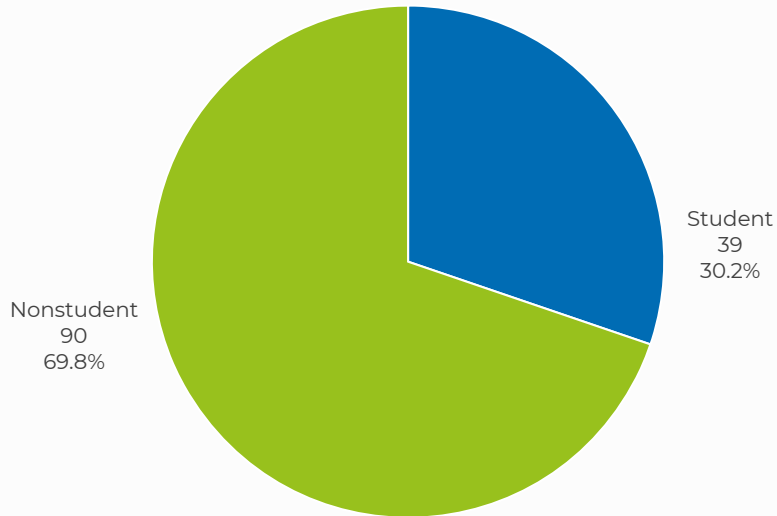


# SIAG/GD Membership Demographics





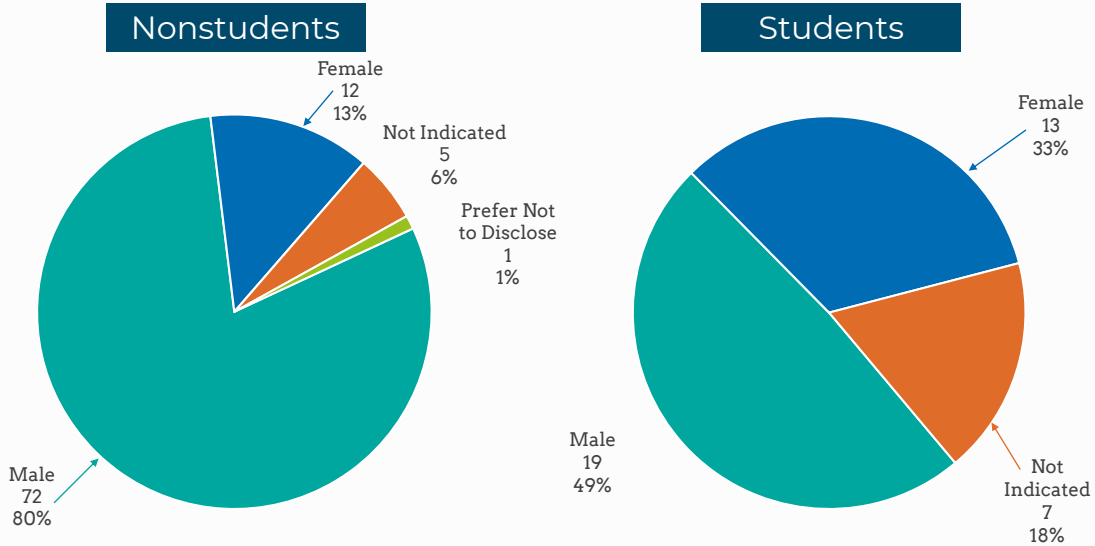
## SIAG/GD Membership Demographics



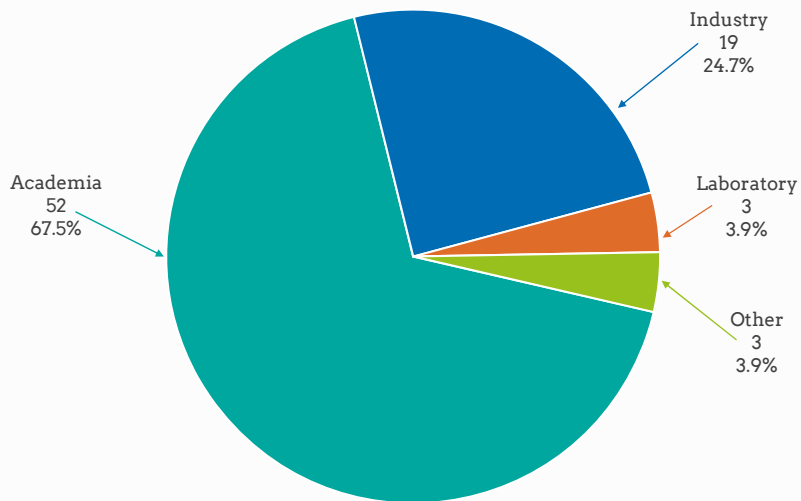
## SIAG/GD Membership by Geography

	Nonstudent		Student		Total	
	Count	Percentage	Count	Percentage	Count	Percentage
Domestic	59	46%	31	24%	90	70%
Foreign	31	24%	8	6%	39	30%
<b>Total</b>	<b>90</b>	<b>70%</b>	<b>39</b>	<b>30%</b>	<b>129</b>	

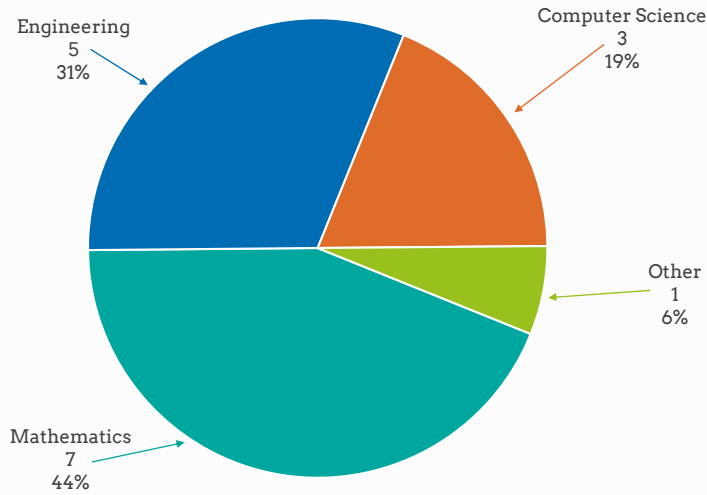
# SIAG/GD Membership by Gender



# SIAG/GD Membership by Employer Type



## SIAG/GD Membership by Department Type



# Other Business

# Contacts

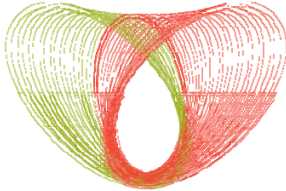
**Chair** Rida Farouki  
farouki@ucdavis.edu

**Vice Chair** Timothy Strotman  
strotmant@gmail.com

**Program Director** Carlotta Giannelli  
carlotta.giannelli@unifi.it

**Secretary** Tom Cashman  
tcashman@microsoft.com

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2019 SIAG/GD BUSINESS MEETING

**siam** Society for Industrial and  
Applied Mathematics

# **SIAM Activity Group on Geometric Design Business Meeting**

Vancouver, 5:30-6:30 pm, June 18, 2019

SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS

**Final Program**

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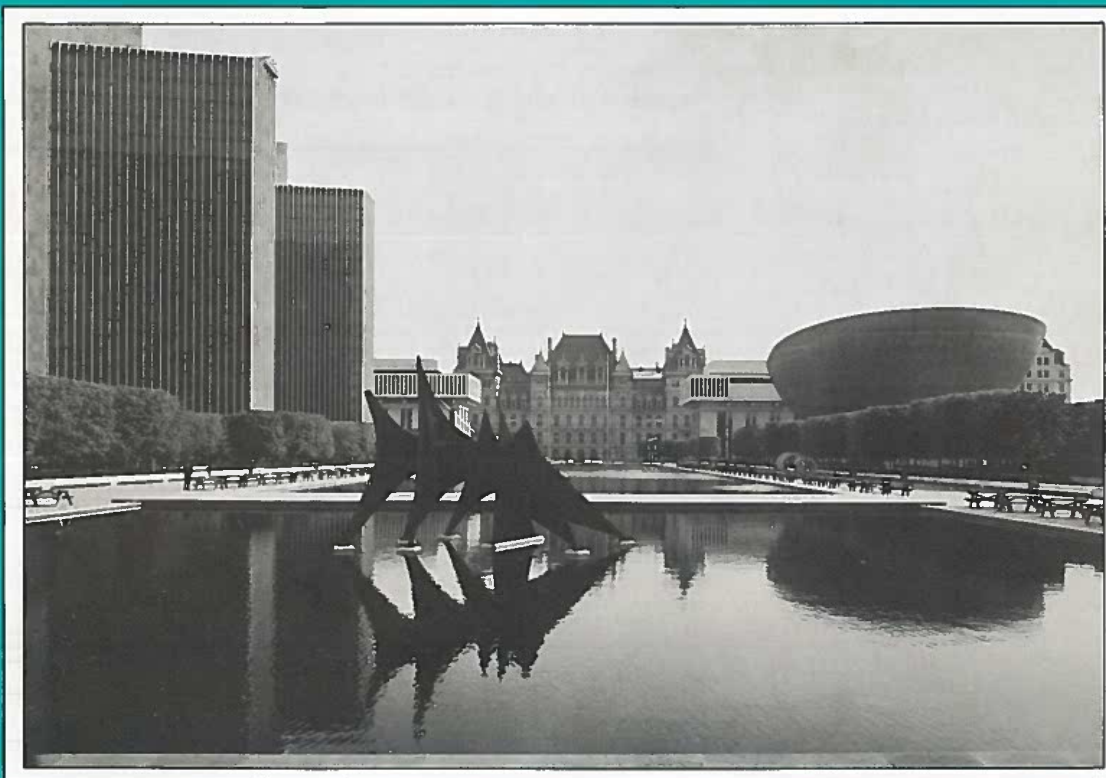
# SIAM CONFERENCE ON APPLIED GEOMETRY July 20–24, 1987

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*with the cosponsorship of Rensselaer Polytechnic Institute*

**and Short Course on Uses of Surfaces in  
Industry: Geometric Modeling,  
Machine Vision, and Motion Planning  
July 19, 1987**

**Hilton Hotel • Albany, New York**



- Image Processing
- Surfaces
- Mathematical Methods and Design
- Packing and Tiling
- Mesh Generation

- Graphics
- Computational Geometry
- Robotics
- Solids
- Modeling for Manufacturing

## MEETING HIGHLIGHTS

### Invited Presentations

Monday, July 20, 9:00 AM

#### Invited Presentation 1 Geometric Issues and Algorithms Related to Robot Motions

Studies of robot motions planning have made use of increasingly sophisticated algorithmic ideas in geometry. The speaker will review some of the techniques that have been employed with emphasis on the use of so-called Davenport-Schubert sequences. Other ideas drawn from algebraic topology will also be reviewed and experimental implementations of some of the algorithms described.

Jacob T. Schwartz  
Courant Institute of the Mathematical Sciences  
New York University

Monday, July 20, 9:45 AM

#### Invited Presentation 2 Geometric Approaches to Computational Problems

In recent years the geometric approach has been applied, often in unexpected ways, to solve computational problems in various contexts. In many cases combinatorial problems need to be embedded in Euclidean space before significant progress can be made with tools in geometry. For example, there are discrete combinatorial problems for which computationally efficient methods have been discovered by viewing problems geometrically and applying linear-programming style algorithms; there are also discrete problems whose complexity has been determined by examining the properties of the geometric complexes associated with the original combinatorial structures.

In this talk we will discuss the state of development along these lines, presenting paradigms from application areas including communications, combinatorial algorithms, and proving lower bounds in computational complexity. We will also discuss the directions in which future progress can be expected.

Andrew Yao  
Princeton University

Tuesday, July 21, 9:00 AM

#### Invited Presentation 3 The Generation and Uses of Aperiodic Tilings

Tilings are complete coverings of the plane, without gaps or overlappings, using one or more sets each of which consists of infinitely many identical geometric shapes. Certain devices or shapes lead to periodic tilings where one basic arrangement repeats itself infinitely many times in two more fixed directions.

A tiling is "aperiodic" if no translation is a symmetry of the tiling itself, or of any other tiling possible with the same tiles. Aperiodic tilings first arose in decision theory and in recreational mathematics; recently they have attracted wide attention through their relations to "quasicrystals"—solid state phenomena which contradict traditional

crystallographic ideas (in particular, violate the "crystallographic restriction"). Most attempts to describe the aperiodic tilings relevant to quasicrystals are based on reducing high-dimensional periodic tilings to three (or two) dimensions by suitable projections or other operations. These methods will be explained and compared to more direct methods based on relations between neighboring tiles and not needing higher dimensions.

Branko Grünbaum  
University of Washington

Tuesday, July 21, 9:45 AM

#### Invited Presentation 4 Solid Modeling and Manufacturing Applications

Here is a presentation about a hybrid method of solid modeling with boolean operations and open ended primitives based on parametric rational  $n$ -dimensional mathematics. The unique features derived from this mathematical base are the range of part shapes included and the degree of automation that can be achieved in machining of parts and tooling. Complex part shapes are modeled by combinations of splines and meshes, transformational sweeps, dimensional contractions, offset primitives and constructive solid geometry operations. Machining is automated by careful selection of reliable algorithms which can be implemented for this unified mathematical base. A prototype software system implementation of the method (called TRUCE for tri-dimensional rational unified cubic engine) has been developed by General Electric and applied to industrial problems involving geometric complexity in design and tooling.

John K. Hinds  
General Electric Corporate Research and Development

Tuesday, July 21, 2:00 PM

#### Invited Presentation 5 Free-Form Modeling with Cubic Algebraic Surfaces

Geometric modeling of free-form shape has traditionally been accomplished using parametric surface patches, most commonly by cubic patches. An alternate method for defining a surface is by using an implicit equation. An advantage of implicitly defined surfaces is that their algebraic degree is lower than that of comparable parametric surfaces. For example, bi-cubic patches generally have an algebraic degree of eighteen, whereas cubic algebraic surfaces are of degree three.

Recently, a technique was developed for controlling the shape of a cubic surface and for fitting together a piece-wise collection of bounded cubic surface patches with tangent continuity. These techniques will be presented, along with algorithms for parametrizing cubic algebraic surfaces.

Thomas W. Sederberg  
Brigham Young University

Wednesday, July 22, 9:00 AM

#### Invited Presentation 6 Robot Systems That Sense, Plan and Manipulate

An intelligent robot should have three generic capabilities:

- The ability to perceive its environment and to locate objects of interest.
- The ability to act on its environment.
- The ability to plan actions to achieve its goals.

Many robot systems have exhibited subsets of these capabilities but, surprisingly, very few systems (aside from some mobile robots) have ever embodied all of these capabilities in non-trivial form. A new integrated robot system, HANDEY, that combines these three capabilities is now under development at MIT. It consists of six major modules: geometric modeling system, laser-range finder, model-based object localizer, collision-free path planner, grasp planner, and robot trajectory-control system. Its domain is that of assembly of planar-faced polyhedra, both convex and nonconvex. The user starts by building accurate geometric models for all the objects to be manipulated, and then specifies a sequence of MOVE commands that specify an object and its destination. HANDEY locates each part on its worktable, grasps it, and takes it to the destination while avoiding collisions. The unique features of HANDEY are its ability to operate on a wide class of objects and to operate in a cluttered environment.

The speaker will review the computational problems that must be solved to achieve the integration of the three generic capabilities and describe HANDEY.

Tomas Lozano-Perez  
Massachusetts Institute of Technology

Wednesday, July 22, 9:45 AM

#### Invited Presentation 7 Gröbner Bases: An Algorithmic Algebraic Method for Non-Linear Geometry

Gröbner bases are certain standard forms for systems of multivariate polynomial equations. The Gröbner basis form of polynomial systems can be obtained by a general algorithm. In the talk this algorithm will be explained and various applications of Gröbner bases in non-linear computational geometry will be presented: inverse robot kinematics, geometrical theorem proving, solid modeling, geometrical decomposition and determination of global properties of geometrical objects, for example, dimension.

Bruno Buchberger  
Johannes Kepler University

Wednesday, July 22, 11:00 AM

#### Invited Presentation 8 Implicitization and Parametrization of Curves and Surfaces

Geometric modeling is largely concerned with representations of curves and surfaces. A plane curve may be described either by one bivariate implicit equation or a pair of univariate parametric equations. Likewise, a surface in space is described either by a trivariate implicit equation or a triad of bivariate parametric equations. From the computational viewpoint, it is important to be able to go back and forth between these two modes of description.

Algorithms are being developed for rational and polynomial parametrizations of both curves and surfaces. An algorithmic irreducibility criterion has been designed to decide when a rationally parametrizable curve is actually polynomially parametrizable. The reverse process of implicitization leads to problems of generalizing the Sylvester resultant. This may be attacked by the symbolic method of classical invariant theory. It is hoped that a greater understanding of the underlying mathematics will facilitate the development of useful algorithms. The algorithmic irreducibility criterion and the resultant problem both have a bearing on the Jacobian conjecture in algebraic geometry. Thus, the interplay between computational algorithms and the underlying mathematics is clearly mutually beneficial.

Shreeram S. Abhyankar  
Purdue University

Wednesday, July 22, 11:45 AM

#### Invited Presentation 9 The Application of Geometric Reasoning to Vision and Robotics

Robotics requires the use of formal procedures which are characterized as decision trees. Well-known approaches include the Grobner basis, Collins' method of cylindrical decomposition, and Wu's method, a fairly common theoretical approach.

The central problem that the speaker will address is to decide the consistency of a given two-dimensional view with the three dimensional object, which is given algebraically. Use is made of methods for planning robot paths. In the time-dependent case, the hand-off problem between two robots can also be dealt with. Recently, some new methods for decision procedures in geometry problems have been developed. These methods provide a new way for looking at solid models as algebraic relations versus the classical approach that employs face-edge-vertex (topologically-oriented, boundary) models. The speaker will apply these methods to problems in model-based vision and robot geometry.

Joseph L. Mundy  
General Electric Corporate Research and Development Center

Thursday, July 23, 2:00 PM

#### Invited Presentation 10 Subdivision Algorithms for Curves and Surfaces

Various algorithms in use in computer-aided geometric design can be interpreted as corner-cutting or "whittling" algorithms, i.e., as generating a sequence of broken lines, each of which is obtained from its predecessors by cutting off one or more of the corners. The first of these to be developed is probably de Rham's trisection algorithm; the best known are Chaikin's algorithm, degree-raising for the Bernstein-Bezier form, and knot insertion for splines.

A survey is given for the current state of such algorithms with special emphasis on their generalization to surfaces.

Carl de Boor  
University of Wisconsin, Madison

Thursday, July 23, 2:45 PM

#### Invited Presentation 11 Computer Modeling and Simulation

The modeling and simulation of objects will play a vital role in computer-aided design and off-line robot programming. Currently, solid modeling systems are capable of modeling rigid solids, computing their volume and inertial properties, calculating offset surfaces, and testing for interference between two parts. Simulation systems tend to be ad hoc and a general purpose model driven simulation system is nonexistent. The ability to represent physical objects in multiple domains and to carry out model driven simulations will have far reaching consequences. Today, researchers are beginning to develop the software systems that will allow easy construction of models and simulations. The speaker will discuss the science base needed to support software systems capable of representing, manipulation and reasoning about physical objects.

John Hopcroft  
Cornell University

Friday, July 24, 9:00 AM

#### Invited Presentation 12 Semiparametric Surfaces

Over the last twenty years, computer-based surface description software has become an essential tool in the automotive, aircraft and shipbuilding industries. Such software uses primarily the parametric surface description. Consideration is being given to the use of "algebraic surface description."

Two examples have been encountered recently of surfaces which do not fit either mould by definition. These are the "blend" which is generated by intersections of offset algebraic surfaces, and the "developable". In each case there is a natural parametrization in one direction, but not in the other.

The speaker will discuss how such surfaces might be converted to more conventional descriptions and how they might be interrogated directly.

Malcolm Sabin  
Finite Element Graphics System, Ltd.  
Cambridge, England

## Meeting Highlights

### Minisymposia

1. **Geometry Processing**  
Gerald Farin, Arizona State University
2. **Algebraic Methods in Geometry**  
Bruno Buchberger  
Johannes Kepler University  
Linz, Austria
3. **Geometric Tolerancing**  
Vijay Srinivasan, IBM-T.J. Watson  
Research Center
4. **Geometric Continuity**  
Wolfgang Boehm  
Technical University of Braunschweig  
Federal Republic of Germany
5. **Visual Multi-Dimensional Geometry with Applications**  
Alfred Inselberg, IBM Scientific Center
6. **Blending Surfaces**  
Christoph Hoffmann, Purdue  
University
7. **Motion Planning**  
Michael Wesley, IBM-T.J. Watson  
Research Center
8. **Non-Tensor Product Surfaces**  
David R. Ferguson, Boeing Computer  
Services
9. **Probabilistic Approaches to CAGD (Computer-Aided Geometric Design)**  
Ronald N. Goldman  
Control Data Corporation
10. **Algebraic Geometry in Geometric Modeling**  
Miriam Luciani, Boeing Commercial  
Airplane Company
11. **Computational Geometry**  
W. Randolph Franklin, Rensselaer  
Polytechnic Institute
12. **Mesh Generation**  
David A. Field, General Motors  
Research Laboratories
13. **Data Reduction for Splines and Its Applications**  
Tom Lyche, University of Oslo
14. **Digital Geometry**  
Robert A. Meller, Long Island  
University
15. **Parallel Methods in Geometry**  
Harry McLaughlin, Rensselaer  
Polytechnic Institute
16. **Shape Control in Surface Design**  
David R. Ferguson, Boeing Computer  
Services

## General Program

4:30/121/A44  
**An Uniform Approach to Geometric Modeling**  
Ming-ming Wang and Shul-Sheng Chern,  
Tufts University, Medford, MA

4:45/122/A44  
**Solid Modelling in C**  
Eugene Loch and Shul-Sheng Chern,  
Tufts University, Medford, MA

5:00/123/A44  
**Geometric Representation of Swept Volumes for Polyhedral Objects**  
John D. Weld and Ming C. Leu, Cornell University, Ithaca, NY

5:15/132/A44  
**Collision-free Trajectory Planning: Computational Geometry and Splines in Space-Time**  
Kamal Kant and Steven W. Zucker,  
McGill University, Montreal, Canada

### Friday, July 24/AM

9:00 AM/Ballroom A-B  
**Invited Presentation 12**  
Chair: David R. Ferguson  
Boeing Computer Services

**Semiparametric Surfaces**  
Malcolm Sabin  
Finite Element Graphic System, Ltd.  
Cambridge, England

9:45 AM/"Summing Up"  
Michael Wesley  
IBM-T.J. Watson Research Center

10:15 AM/Prefunction Area  
Coffee

### 10:30 AM/CONCURRENT SESSIONS

Friday, July 24/10:30 AM - 12:00 Noon  
Minisymposium 13/Ballroom E  
**DATA REDUCTION FOR SPLINES AND ITS APPLICATIONS**

The number of coefficients used when describing a curve or surface in B-spline format, is often much greater than necessary. The computation time and storage requirements for the manipulation of such an overrepresented curve or surface, would be greatly reduced if an approximation with fewer parameters was used instead. A method for accomplishing such a data reduction, without perturbing the curve or surface more than a given tolerance, has been developed. Both the theoretical and practical aspects of this method will be described, and illustrated with industrial examples.

CHAIR AND ORGANIZER  
Tom Lyche  
University of Oslo  
Oslo, Norway

10:30/M38/A10  
**Data Reduction for Splines**  
(to be presented by the chair)

11:00/M39/A11  
**Data Reduction Combined with Recursion and Iteration in Intersections**  
Tor Dokken  
Center for Industrial Research  
Oslo, Norway

11:30/M40/A11  
**Knotline Removal on Box-Spline Surfaces**  
Morten Daehlen  
Center for Industrial Research  
Oslo, Norway

Friday, July 24/10:30 AM - 12:00 Noon  
Minisymposium 14/Ballroom C  
**DIGITAL GEOMETRY**

Digital geometry can be described as the study of geometric properties of subsets of digital images. It has proved to be an important tool in computer vision. Among the general concepts which intervene in this investigation are connectedness, curvature and convexity. Of continuing interest has been the problem of characterizing digital straight lines. The generalization of certain theorems from the plane to three-dimensional space remains an open question. Specialization of the classical program of distance geometry, e.g., the determination of metric bases, to the digital case yields results of mathematical interest.

CHAIR AND ORGANIZER  
Robert A. Melter  
Long Island University  
Southampton, NY

10:30/M41/A11  
**Digital Geometry: A Survey**  
Azriel Rosenfeld  
University of Maryland  
College Park, MD

10:50/M42/A11  
**Continuous Representations of a Digital Image**  
Chung-Nim Lee  
The University of Michigan  
Ann Arbor, MI  
and  
Azriel Rosenfeld  
University of Maryland  
College Park, MD

11:10/M43/A12  
**On Digital Topology and Thinning Algorithms**  
T. Yung Kong  
Ohio University  
Athens, OH

11:30/M44/A12  
**Metrics in Digital Geometry**  
(to be presented by the chair)

Friday, July 24/10:30 AM - 12:00 Noon  
Minisymposium 15/Ballroom A-B  
**PARALLEL METHODS IN GEOMETRY**

The availability of parallel processors has prompted several questions about geometric modeling, two of which are: (1) are commonly used mathematical models appropriate for parallel processing? and (2) is there an opportunity to develop new modeling techniques which are implementable on, and can take

advantage of, parallel machines? Both of these questions will be discussed.

CHAIR AND ORGANIZER  
Harry W. McLaughlin  
Rensselaer Polytechnic Institute  
Troy, NY

10:30/M45/A12  
**Affine Maps and Parallel Methods**  
Craig Shelly  
Rensselaer Polytechnic Institute  
Troy, NY

11:00/M46/A12  
**Evaluating  $\beta$ -Splines and Computing Least Squares Approximations on Parallel Processors**  
Richard Mastro  
Boeing Computer Services  
Seattle, WA

11:30/M47/A13  
**Mathematical Morphology**  
Michael M. Skolnick  
Rensselaer Polytechnic Institute  
Troy, NY

Friday, July 24/10:30 AM - 12:00 Noon  
Minisymposium 16/Ballroom D  
**SHAPE CONTROL IN SURFACE DESIGN**

The shape of surfaces representing geometric models or measured data is often more important than proximity to particular points. For example, when modeling an airfoil cross section or when modeling drag characteristics of aircraft, the shape (convexity or monotonicity) is more important than fidelity to the defining data. Similar problems arise with higher dimensional surfaces. This minisymposium will present three views on the problem of controlling shape while still reasonably reproducing the data. One presentation will concentrate on constructing convex surfaces, another will discuss problems in modeling data and the third will cover methods based on smoothing shape.

CHAIR AND ORGANIZER  
David R. Ferguson  
Boeing Computer Services  
Seattle, WA

10:30/M48/A13  
**The Automatic Generation of Convex Surfaces**  
Roger Andersson, Erik Andersson, Mats Boman, Tony Elmroth  
Volve Data, AD

Goteborg, Sweden  
and  
Bjorn E. J. Dahlberg, Bo Johansson  
University of Goteborg and  
Chalmers University of Technology

11:00/M49/A13  
**Modeling Multivariate Data Using Shape Control**  
(to be presented by the chair)

11:30/M50/A13  
**Surface Interpolation and Shape Control Using Tension Parameters**  
Thomas Foley  
Arizona State University  
Tempe, AZ

12:00 PM/Conference Adjourns

## GENERAL INFORMATION

### Special Functions

**Welcoming Reception**  
Sunday, July 19, 8:00 PM  
Prefunction Area, Ballroom Level  
Cash Bar

**Beer Party**  
Monday, July 20, 6:15 PM  
Prefunction Area, Ballroom Level  
\$10.00

**Dinner and Ballet**  
Wednesday, July 22, 5:15 PM  
Saratoga Performing Arts Center  
\$34.00

Coppella, performed by the New York City Ballet, music by Leo Delibes and choreographed by Balanchine and Danilova, coupled with the delightful choices of a dinner buffet (Shrimp, Chilled Scallops, Baked Blue Fish, Chicken Divan, Steak tips with Mushrooms, Pasta Primavera, Carved Roast Beef, Baked Ocean White Fish, Garden Vegetables) can only promise to be the makings of a memorable evening. Therefore, SIAM has purchased a limited number of tickets (covered) which are available on a first come, first served basis at the beautiful outdoor Saratoga Performing Arts Center. The entire evening including dinner, performance, wine and transportation all for \$34.00.

### Book Exhibits

The book exhibits will be in the Prefunction Area—Ballroom Level of the Hilton Hotel. The exhibit times are 9:00 AM to 5:00 PM, Monday to Thursday, July 20-23; 9:00 AM - 11:00 AM, Friday, July 24.

### Special Notice To: All Conference Participants

SIAM requests participants to refrain from smoking in the session rooms during lectures. Thank you.

## UPCOMING CONFERENCES

October 12-15, 1987  
**SIAM Annual Meeting and 35th Anniversary**  
Marriott Hotel—City Center  
Denver, CO

December 1-4, 1987  
**Third SIAM Conference on Parallel Processing for Scientific Computing**  
The Westin Bonaventure Hotel  
Los Angeles, CA

May 23-26, 1988  
**Third SIAM Conference on Linear Algebra**  
The Concourse Hotel  
Madison, WI

June 13-16, 1988  
**Fourth SIAM Conference on Discrete Mathematics**  
Cathedral Hill Hotel  
San Francisco, CA

## REGISTRATION INFORMATION

The registration desk will be located in the Prefunction Area on the Ballroom Level of the hotel and will be open as listed below:

Saturday, July 18/5:00 PM - 10:00 PM  
Sunday, July 19/7:00 AM - 10:00 PM  
Monday, July 20/7:00 AM - 6:00 PM  
Tuesday, July 21 - Thursday, July 23/8:00 AM - 6:00 PM  
Friday, July 24/8:00 AM - 12:00 NOON

### NON SIAM MEMBERS

Non-member registrants are encouraged to join SIAM in order to obtain the member rate for conference registration and enjoy all the other benefits of SIAM membership.

### Special Note

There will be no prorated fees. No refunds will be issued once the conference has started.

Short Course Fees		SIAM Member	Non Member	Student Member	Student Non-Member
		Advance	\$ 75	\$ 90	\$30
On-site		\$90	\$105	\$40	\$50
Conference Fees		SIAM Member	Non Member	Student Member	Student Non-Member
		Advance	\$110	\$140	\$20
On-site		\$135	\$165	\$20	\$30

### SIAM CORPORATE MEMBERS

Non-member attendees who are employed by the following institutions are entitled to the SIAM member rate.

Aerospace Corporation  
Amoco Production Company  
AT&T Bell Laboratories  
Bell Communications Research  
Boeing Company  
Cray Research, Inc.  
Culler Scientific Systems Corporation  
E. I. Du Pont de Nemours and Company  
Eastman Kodak Company  
Exxon Production Research Company  
Exxon Research and Engineering Company

General Electric Company  
General Motors Corporation  
Giers Schlumberger  
GTE Laboratories, Inc.  
Hollandse Signaalapparaten B.V.

IBM Corporation  
Institute for Computer Applications in Science and Engineering (ICASE)  
IMSL, Inc.  
MacNeal-Schwendler Corporation  
Marathon Oil Company  
Martin Marietta Energy Systems  
Mathematical Sciences Research Institute  
Standard Oil Company of Ohio (SOHIO)  
Supercomputing Research Center, a division of Institute for Defense Analyses  
Texaco, Inc.  
United Technologies Corporation

### CREDIT CARDS

SIAM is now accepting VISA, MASTERCARD, and AMERICAN EXPRESS credit cards for the payment of registration fees, special functions, book orders and membership dues.



## decline in GD conference attendance

- narrowing thematic focus of conference since 1980s
- increased competition from closely-related conferences
- more expensive conference venues & registration fees
- Fall vs. Summer preference for conference schedule
- any other possible factors ... ?
- any suggested remedies ... ?

## GD conference proceedings

- special issue of *Computer Aided Geometric Design* on “Computational Geometric Design”
- Guest Editors: Carolina Beccari, Ligang Liu, Michael Scott
- submission period: July 1 – October 1, 2019
- submit through EES & select article type VSI:CGD
- paper acceptance deadline: April 28, 2020
- inquiries: [carolina.beccari2@unibo.it](mailto:carolina.beccari2@unibo.it)

## organization of 2021 GD conference

- decide conference title, scope, venue, schedule
- appoint conference organizing & program committees
- identify measures to improve conference attendance
- continue conference proceedings in special issue of *Computer Aided Geometric Design* (aim for publication concurrent with conference dates)
- financial support for some international attendees is contingent on having a conference publication

## other SIAG/GD matters

- solicit articles for *SIAM News* to increase exposure of SIAG/GD among broader SIAM community
- nomination of SIAG/GD members as SIAM Fellows
- encourage members to nominate students for free SIAG/GD memberships & conference travel support
- increase collaboration with SIAG/AG (Algebraic Geometry)
- follow-up on status of SIAG/GD Early Career Prize
- follow-up on SIAM administration of John A. Gregory Award in Geometric Modeling