VIS Restructuring Workshop Summary

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Fall 2018

Introduction

Over the last decade, IEEE VIS, the premier conference in the field of visualization, has been enormously successful. But like all disciplines that are growing, expanding, or maturing, the needs for some reorganization, whether gradually or in a great leap, are inevitable. For many years IEEE VIS has been subdivided into the SciVis, InfoVis, and Visual Analytics conferences. There is now considerable appetite to consider alternative structures, such as a more unified conference, that may better enhance vibrancy and growth. Our goals are to preserve intellectual diversity while promoting organizational consistency. A subcommittee (Hagen, Keim, Munzner, North, and Pfister) has been charged by the VIS Executive Committee (VEC) to guide this decision-making process, which started in 2016.

We reported a first set of findings in 2017 ("Phoenix report"), which recommended increasing the number of tracks and the transparency of the process for approving and developing workshops and symposia into main conferences. After a round of feedback with and from the community, the VEC asked us to propose more fundamental changes.

We organized two similar workshops in the summer of 2018, at Dagstuhl in Wadern, Germany, and BIRS in Banff, Canada, as the cornerstones that provided a broad cross-section of the community a voice into the set of options under consideration. Invitees included the VEC, VIS Steering Committees, selected members of recent and upcoming VIS Organizing Committees, and many earlier-career researchers.

Process

We invited 144 visualization researchers and practitioners who held current and recent organizing and steering committee positions and people who participated in the early career meet-up at VIS 2017, which was mainly tenure-track faculty who are ultimately going to lead the future of the VIS conference. The notably high acceptance rate of about 70% indicated that the topic of the workshops resonates with the community. Ultimately we had 43 attendees at Dagstuhl and 46 attendees at BIRS, including some last minute cancellations.

The participants wrote one-page statements that were shared before the meeting. The organizers gave an initial briefing to frame the discussion regarding goals, scenarios, and lenses through which to evaluate them, and concerns and challenges. Participants made short oral statements highlighting key points from their one-pagers. After a brainstorming session to propose topics for breakout meetings, the organizers grouped the topics into themes. There was a series of breakout meetings, with plenary sessions to discuss the results and iteratively re-organize the themes based on progress made. Participants submitted one-page follow-up reflections a few weeks after each workshop. We wrote an executive summary of the workshops that has been sent to the workshop venues, the attendees, the VEC, and the Steering Committees.

This report includes a summary of the workshops. It will be distributed to the VEC and the community and discussed at an open meeting at the VIS 2018 Conference in Berlin. The committee would like to thank Dagstuhl and BIRS for their hospitality and generous support of our endeavors.

Attendees

Dagstuhl

Gennady Andrienko
Natalia Andrienko
Daniel Archambault
Benjamin Bach
Stefan Bruckner
Baoquan Chen
Thomas Ertl
Jean-Daniel Fekete
Christoph Garth
Eduard Gröller
Hans Hagen
Chuck Hansen
Lane Harrison
Helwig Hauser
Hans-Christian Hege
Bernd Hentschel
Petra Isenberg
Tobias Isenberg
Daniel Keim
Jörn Kohlhammer
Heike Leitte
Kresimir Matkovic
Klaus Mueller

Tamara Munzner
Torsten Möller
Stephen North
Alvitta Ottley
Valerio Pascucci
Charles Perin
Hanspeter Pfister
Giuseppe Santucci
Arvind Satyanarayan
Gerik Scheuermann
Tobias Schreck
Michael Sedlmair
Holger Theisel
Julien Tierny
Gunther Weber
Rudiger Westermann
Wesley Willett
Jo Wood
Tatiana von Landesberger

BIRS

James Ahrens
Enrico Bertini
Matt Brehmer
Peer-Timo Bremer
Sheelagh Carpendale
Jian Chen
Fanny Chevalier
Chris Collins
Wenwen Dou
Jason Dykes
Niklas Elmqvist
Alex Endert
Brian Fisher
Angus Forbes
Issei Fujishiro
Hans Hagen
Natalie Henry-Riche
Seokhee Hong
Jessica Hullman
Kate Isaacs
Daniel Keim
Bongshin Lee
Joshua Levine

Alex Lex
Peter Lindstrom
Shixia Liu
Kwan-Liu Ma
Liz Marai
Miriah Meyer
Tamara Munzner
Stephen North
Michael Papka
Adam Perer
Hanspeter Pfister
Huamin Qu
Penny Rheingans
Carlos Scheidegger
Han-Wei Shen
Deborah Silver
Hendrik Strobelt
Danielle Szafir
Melanie Tory
Cagatay Turkay
Terry Yoo
Xiaoru Yuan

Reports

The following reports are available at http://ieeevis.org/governance/restructure:

VIS Restructuring Recommendations, Fall 2018

VIS Restructuring Workshops Executive Summary, Fall 2018

VIS Restructuring Workshops Summary, Fall 2018 (this report)

VIS Restructuring Feedback, January 2018

VIS Restructuring Report ("Phoenix Report"), Fall 2017

Workshop Summary

Outline

What is VIS? What is the ideal size? How should it change?

Unification

Internal and external

Publications

Types - journal, conference only, and other formats

Length - full, short, talk abstracts

Review process - fairness / rigor vs. workload

Organization

Attracting and engaging practitioners

Governance - transparency and appropriate level of turnover

What is VIS?

- There was no clear consensus whether VIS should stay as a very academically focused meeting or should be more broadly aimed at everyone focused on using VIS, though it was generally agreed that mainly presenting journal papers on narrow technical topics could become a dead end.

- There was no consensus about the ideal size. The largest camps were those who wanted to keep the current size of 1K attendees (valuing the cohesion) and those who wanted gradual increases up to 2K; some argued for expansion to the size of CHI (3K), and a few for massive growth to the size of NIPS (10K).

- There was a clear wish to increase the range of VIS, both w.r.t. the breadth of topics and the depth of our impact on the world including adjacent fields, particularly data science, and also art, AI, cartography, cognitive science, computer graphics, data mining and management, databases, design, machine learning, psychology, statistics. Many people suggested to have more parallel sessions.

- There was extensive discussion about how to increase the diversity of the community to keep it healthy, including both demographic diversity (increasing the participation of underrepresented groups including gender and race) and intellectual diversity (increasing the participation of people from other fields and of non-academics).

Unification - Rationale

- A vast majority of attendees were in favor of unifying the three conferences by removing the division into V-I-S completely, with a few arguing to keep the internal division into V-I-S in place. Although the separation of V-I-S (VAST - InfoVis - SciVis) has a historical basis, it raises a number of issues.
- Newer attendees of VIS may not understand the separation and find it confusing, making the conference difficult to navigate.
- The separation may blur the identity of the conference and may diminish its reputation.
- The separation may not align well with paper submissions today, in which multiple aspects of visualization are involved that cross-cut the three historical areas.
- On the other hand, the separation into the V-I-S conferences was key to establishing the current topical diversity and to forming lively subcommunities which kept VIS healthy over the years.

Unification - External

- A first step towards external unification, primarily affecting authors, would be to allow authors to submit to either an individual V-I-S conference or to VIS in general and and let the PC chairs assign the conference.
- Another proposal is to immediately move to a uniform set of publication mechanisms across all three V-I-S tracks so that they all have conference-only and short papers in addition to TVCG papers.
- A proposal for external unification, primarily affecting attendees, is to integrate paper sessions across all three V-I-S tracks.
- All three steps towards external unification could be implemented immediately, and are independent from an internal unification of the reviewing process.

Unification - Internal

- Proposals for internal unification focused on how the current three-part chairship for organizers from each of V-I-S could be improved.
- A PC structure based on an area chair model was discussed in depth.
- Key questions include determining the number of areas, exactly what the categories are, finding the right balance between continuity of existing categories and vibrancy from changing them, and defining the governance process of how these decisions are made.
- There was debate over whether starting with the existing three conference areas as categories, possibly with the addition of a fourth multicategory application track, would be a useful first step, or counterproductive to real change.
- There was concern whether the existing communities would be sufficiently fostered and protected.

Publication Model - Deadlines

- The publication model was extensively discussed. One major issue is that submission to V-I-S is allowed only once a year.
- Many attendees expressed a desire for a rolling submission model, with several deadlines throughout the year, to increase the number of potential reviewing rounds with the goals of decreasing the burstiness of work for both authors and reviewers and potentially increasing review quality due to less time pressure.
- Concerns were raised that increasing the number of submissions to the VIS conference this way would very likely affect submissions to other conferences such as EuroVis and PacificVis and the TVCG journal, to the detriment of the health of the field as a whole.

Publication Model - Relationship to TVCG

- Another debate revolved around a journal-only option, where all VIS papers would be submitted through the TVCG umbrella (rather than the current dual-track policy where VIS runs its reviewing and publishes proceedings as a special issue, but all TVCG papers may be presented at VIS as well).
- There is substantial overlap between the editors and reviewers of TVCG, and the PC members and reviewers of VIS. The relationship between VIS and TVCG has been mutually beneficial.
- Although often aligned, TVCG and VIS have different scopes and objectives. TVCG policies could be changed without the consent of VIS by the IEEE Computer Society or some of its constituencies.
- Relinquishing our flagship publication track to an organization that is not under the direct control of the VIS community seems unwise.

Publication Model - Review Process

- There were also suggestions on improving the review process.
- Workshop participants expressed concern about both improving the fairness and rigor of reviews, while reducing the burden on individual reviewers.
- There is concern about the appropriate target for acceptance rates. There was a desire to accommodate multiple levels of effort and quality under the VIS umbrella because some attendees have goals that do not align with publishing TVCG journal papers.
- Some suggested adding partnerships with other journals or starting new journals (suggestions included Visual Data Science, PLOS Visualization, Springer Visualization, ACM Visualization).
- A substantial majority of attendees were in favor of short papers with a later deadline than the full papers (in the same spirit as EuroVis).
- Better feedback mechanisms should be adopted to improve reviews and selection of reviewers.
- Fairness might include introducing paper limits for PC members, and excluding paper submissions from PC chairs.

Publication Model - Diversity of Formats

- Attendees of the workshop made suggestions for new publication formats and awards, including
  - Formats: explainer (interactive visual essay) sites, online demos, open data, open source contributions, "science slam" short talks, work-in-progress lightning talks, post-mortems, hackathons, videos, comics, talk-only abstracts, case studies, implementation details, design deep dives, analysis problems in the world, alt-VIS (cf alt-CHI).
  - Awards: reproducibility/replicability awards and badges, best talk, best evidence to support research claims, best review, best reviewer discussion.
- There is strong interest in improving the quality of some of the presentations to resemble more polished TED-like talks that would be approachable by a general audience.
- The current talk model is uniform 20-min length to allow moving between sessions. Many proposed changes including: shorten talk lengths; have different lengths for different kinds of content; have talks only for the very top papers where the rest are presented through posters (NIPS model); shorter individual talks with joint Q&A/discussion for whole session; eliminate talks completely; eliminate Q&A since questions are often very superficial and generic.
- Many expressed the desire for open-access publications and to move away from our closed-access paywall state. Creating a visualization category on arXiv would be feasible with 2-3 post-tenure volunteers to serve as moderators.

Organization - Practitioners

- There was strong agreement about the need to attract more practitioners. VIS seems to be missing out on the explosion in number of practitioners in visualization and related fields.
- There was a great deal of discussion over who practitioners are and how we might connect with them more effectively. The many different roles beyond visualization researcher that were articulated included journalists, designers, artists, storytellers, domain scientists, people at small startups, developers embedded within large companies not focused on visualization, people at companies focused on visualization products, social scientists, statisticians, psychologists, other research disciplines, government agencies, non-governmental organizations, digital humanities scholars, makers, educators, engineers, user experience specialists.
- There was also debate about what kinds of content and mechanisms would align with the incentives for practitioners. Many noted that publication of papers is often not well-rewarded outside of academia.
- It was suggested to offer a lower-cost one-day ticket, and to structure the technical program to make one-day attendance more attractive to various types of participants, especially practitioners. Targeted workshops and targeted tutorials (for popular tools, for people in specific domains) may be of interest to people who would not attend the entire week.
- These efforts need to be supported by appropriate publicity and outreach to geographic / intellectual communities.

Organization - Practitioners

- There was a clear consensus that VIS needs more application papers.
- An option that had strong support was to immediately establish a separate application track for papers, with appropriate reviewing criteria that differ from the current call for research papers.
- This unified track would accept papers from all areas of V-I-S, independently of any other unification efforts that might take more time to work out for the research papers.
- A suggestion about having mini-symposia on designated topics also received positive feedback.
- Pre-registered workshops might also help.
- Create better offers for supporters, industry exhibits/recruiting events.
- Publicize VIS by a professional demo reel and other forms of outreach.

Organization - Governance

- Many workshop participants were unclear about the upper levels of the VIS organization and how they function.
- There was concern that the upper levels of the organization (VGTC ExCom) are not flexible enough to respond to changing situations and opportunities by acting on them, due to insufficient turnover and an intensely top-down structure with a great deal of control from the VGTC chair.
- For comparison, the SIGGRAPH ExCom has nine elected positions (not just one) and one seat for a past chair (not seven).
- There was agreement that the VEC would need to change composition in a unified VIS, but little discussion of concrete alternatives to the current structure.
- Many participants raised the question of independence from IEEE. There is concern that IEEE does not seem interested enough in helping VIS to grow. Specific areas include professional conference management, publicity, outreach, budget for speakers.
- The participants agreed there should be a well-defined Code of Conduct for the conference itself, not just for the preparation of submitted papers.

Individual Points From Workshops

Many valuable suggestions surfaced in the pre- and post-workshop writeups that merit consideration

Other Points, Pre-Workshop: I

- Identify and promote grand challenges.
- Outreach at other major venues to promote visualization in addition to activities targeted to practitioners at VIS.
- It should become easier for attendees to identify which parts of the conference matter, where to go, and how to meet and interact with the right set of people.
- Consider collocation with other big conferences to promote Vis to other "neighboring" fields.
- TVCG should have a seat on the VEC since that is where the conference publications appear.
- Why are VIS proceedings and videos so difficult to access? We rely too much on the VIS community and ephemeral social media to promote our work each year.
- How does VIS scale inclusiveness? Have we lost anyone because we failed to link them in?
- What to do about the high level of stochastic elements that influence our decision making: after a sophisticated reviewing process, many papers end up at the borderline where many could go either way (cf NIPS experiment)?
- Add "special interest group" sessions held in small rooms to allow forming new sub-communities.
- Add VIS-(high)lights sessions open to the public.
- Discipleship versus proselytization (i.e. maintaining a strong community versus growing a community): goals around growing a community and goals around maintaining the health of a community may be at odds with each other.
- If I had to choose between a focus on growth or community, I would definitely go for the latter.
- VIS is still very US focused. Having been hosted twice in Europe has helped make it more international, but it is time it embraced Asia.

Other Points, Pre-Workshop: II

- Modify the governing structure of VIS more towards a merit/data-driven governing structure with a flow of diverse people getting a chance to determine the fate of the conferences.
- Many conferences move paper chairs onto steering committees.
- Providing student travel grants and live-streaming the conference could make it more accessible for individuals who cannot attend due to financial or travel restrictions.
- Adapt policies/programs such as gender-neutral bathrooms and babysitting services to foster a more inclusive community.
- I've found VIS to have the highest quality reviews of conferences I submit to.
- PhD colloquium structured around US model of PhD study (does not fit well into a 3-year PhD programme).
- Scenario in five years' time: VIS has an active media/press presence, addressing issues of current political, ethical and general interest (as many other conferences do).
- Restore and expand VisInOtherVenues. Solicit abstracts of visualization work recently published in domain-specific venues; invite authors to give short talks or present posters of their work at VIS.
- One interesting statistic I do not have is "How many VIS papers lead to a companion / follow-up publication in an application journal?" A follow-up question to the community would be how large do we think this number should be?
- Reduce the number of reviews per paper. Major journals use 2, only bringing on a 3rd if the decision is unclear – why do we need 4? We are burning out our community.
- Use exemplar papers instead of paper types to help encourage quality in paper writing.

Other Points, Pre-Workshop: III

- Think about how to encourage academic diversity: diversity in assessment; diversity in application domain; diversity in contribution; diversity in purpose.
- How could scientific research on the fundamental issues associated with VIS achieve the kind of status needed for election to the US National Academy of Sciences or winning a Turing award?
- Add options in PCS to report an inappropriate review, for both reviewers and authors. Determine who has the authority to override a review/decision and how.
- We need to value validation, but also recognize we are not and should not be only a hard science conference, but also a conference which embraces design and creativity, and these are expressed and validated in a different manner.
- While reviewer continuity for resubmissions has merit, assigning at least one 'fresh' PC member should always be considered to balance the power of a strong primary reviewer.
- VIS needs to be an eclectic focus of the most interesting, exciting and high quality research, art & practice in visualization. These three things are symbiotic, catalysts for one another, and we all benefit from engaging widely & deeply in each of them.
- I used to think that paper presentations were about scrutiny. No more. They are about communicating findings and a summary of process. We should embrace this with experimental formats.
- My priorities are innovation, relevance to diverse applications, and community.
- We should also consider setting aside sessions to showcase topics and methodologies that are not currently represented at VIS, and to allow those sessions to have higher acceptance rates.

Other Points, Pre-Workshop: IV

- Visualization research is inherently interdisciplinary, and input from artists, designers, and humanities scholars - experts in thinking about representation, context, nuance, narrative, audience, ambiguity, ethics, complex systems, etc - can only expand its scope and applicability.
- Could having a VIS road show - selecting the best visualizations/research/artworks/ideas and presenting them at other conferences/venues - make sense for sharing new ideas in visualization?
- Steal the best: identify key players (other fields, practitioners) and entice them to be part of the community to attract more of them. Steal from the best: identify compelling contributions, talks from other fields and invite them to present at VIS in special venues.
- We need a community effort to reduce the big gap between research (state of the art) and practice (available commercial/public software).
- Drawing people from outside the community, even from related or beneficiary fields, is difficult as there is little incentive for them to contribute or attend, but participating requires their time and resources.
- The conference has largely been controlled by a small number of senior people who have been in their positions too long.
- Definitely keep TVCG and make it better, but having only one high quality journal option for our field is extremely limiting (compare to the large number of good journals in Computer Vision).
- Lower the bar for administrative rejects, e.g. if both the Primary and Secondary strongly believe that the paper does not stand a chance they can suggest a desk reject with a written justification.

Other Points, Pre-Workshop: V

- Have a track with talks that are selected by the merit of the talk, not by its scientific novelty; a talk about work not published or published elsewhere would be acceptable, think about its value to the audience.
- It is unlikely that VIS will grow the way some ML conferences have been growing, and we shouldn't try to force that by inflating the program artificially.
- I like the three VIS venues we have now: VIS, EuroVis, and PacificVis to accommodate visualization researchers with geographical, financial, or time constraints.
- IEEE does nothing for our external image as old-school -- just comparing the difference between their diversity policy and that of the ACM is striking enough. IEEE: https://bit.ly/2KUrK5d ACM: https://bit.ly/2J7iEVa
- VIS has largely been governed by the same group of people, which has constrained its ability to evolve. Every five years, two-thirds of the leadership, reviewers, committee members/chairs should have turned over; the responsibility is on the current members to grow this new group and serve as mentors.
- Supercomputing (SC) introduced a paper limit for PC members, an idea that helps on two fronts: it injects more papers from outside the leader community (PC members), and encourages a change in participation at the PC level.
- There are great success stories (Polaris, D3) but a vast majority of our research never makes it beyond the IEEE Digital Library.
- Can we build documentation and infrastructure to support the re-use of accepted visualization components? It would drive non-academic sectors to instantly try out our techniques, democratizing our work.
- Outreach to local groups near conference locations with deeply discounted registration and tailored activities: undergrads, educators, practitioners, domain experts, media. Maybe designate a themeday for some.

Other Points, Pre-Workshop: VI

- The registration costs for VIS are prohibitively high for engaging scholars in outside communities who may want to explore the community and for many junior or PUI scholars to fund students to attend on top of other travel costs.
- We should become truly international (i.e. let's choose a worldwide location every year, rather than having it "out of the US" every N years).
- Paper/Session chair summaries: Accessible informal summaries of paper - to be put on Medium or a blog to be submitted by authors or sessions chairs as a summary of the papers in the session.
- Switch to a publication template that uses markdown, move beyond PDF to support interactive visualizations.

Other Points, Post-Workshop: I

- Treating visual analytics papers equally to information visualization (particularly, expecting novel visualization and interaction techniques or evaluation of specific techniques rather than integration of visualization into analytical workflows) may kill visual analytics and make still remaining researchers move to different communities.
- Encourage ghost-reviewing, i.e. supervisors co-reviewing with their students.
- Experiments such as non-anonymous reviewing.
- Model: 25% of submissions go to TVCG, 25% go to conference only, 50% are rejected.
- There should be technical papers, application papers, AND applied papers. Applied papers are about visualization projects substantially (in number of users, and amount of time) used in practice.
- Growing without specific plans seems like a threat to the quality of the conference.
- OpenVis videos are posted within weeks, are high quality, and promoted by the conference. VIS videos can take months [or years!] to appear online, which stifles community "buzz" following the conference.
- Add "special interest group" sessions held in small rooms. These are a great way for starting discussions and forming new sub-communities. They should fill the gap between current meetups and workshops.
- It is hard for new attendees to find out how to get involved, how to submit new ideas, how to get a workshop approved. Transparency is a key aspect here.
- No attention was given to the somewhat low tech appearance of the VIS webpage. It pales when compared to those of our peers, such as CHI.
- Questions about diversity, new modes of presentation and ways to publicize our work, etc. were much less discussed than legacy topics like the name of the conference and the integration of TVCG and VIS.

Other Points, Post-Workshop: II

- Currently poor presentation/curation/navigation for session recordings. Embed prominently on the conference website and post on social media. Recording the actual speakers (in addition to slides) would improve viewability.
- Integrate VIS + X workshops. They feel cut off, could be integrated within the main week. To build bridges, should also encourage to have one organizer from the "X" community who does not primarily identify as a VIS affiliate.
- Improve diversity & inclusion outreach, including diversity scholarships, a free open-to-the-public day at the conference, inviting high schoolers to the conference, see if conference attendees will talk at local schools/meetups.
- We also need to remember that a central goal of this kind of change is to encourage participation from new people who aren't currently represented.
- I left the workshop feeling disheartened, and worried for the future of VIS. The workshop was dominated by the lens of core (IEEE-friendly) computer science academics. There was a significant minority of voices that were trying to view VIS much more broadly and more radically. These voices were politely tolerated but not taken seriously.
- Visualization practitioners are those whose job description involves 'visualization' but does not involve publishing academic research papers in visualization venues.
- Transition VIS as the preeminent visualization research conference to VIS as the preeminent visualization conference.
- I am skeptical of proposed subcommittees associated with data types or application areas, as I am concerned about the creation of hyper-specialized and insular subcommunities. Instead, subcommittees associated with contribution types, such as theory, application / design study, technique, system, and evaluation.

Other Points, Post-Workshop: III

- More work is required to develop a process for establishing area descriptions. I think that a data-driven approach, supplemented by crowd-sourcing for emerging themes, is essential to find areas that are free of arbitrary, historical, or political divisions. This process should be repeatable so that areas can evolve year-to-year to keep the Conference fresh and relevant.
- Pleasing everybody will be difficult. Indeed, this should not be an the objective of the review process or conference redesign - we can't please all & trying to do so will result in a lesser solution.
- At times it veered a little too much towards being a How Do I get More of My Stuff Published workshop. Try to do things that are good for a healthy community and actively vote for things that will not benefit you as an individual if they are better for the discipline & the community as a whole. I ask all colleagues to take a selfless perspective.
- Structured Abstracts would help with claims, reviewing, communication, rigour, and consistency? eg Problem; Claimed Contributions; Methods & Data; Results, Scope & Confidence; Recommendations & Implications For Practice. I'd like a (TVCG) working group on structured abstracts.
- We could structure reviews much more explicitly around three questions: How much do we believe this claim? How important is it? Are the necessary changes achievable in the time available?
- I do not understand in what sense might a diverse and dynamic field of study could/should be unified. This to me calls for a positive effort to build community rather than programmatic changes that might inhibit the greater vision for the conference and the community.

Other Points, Post-Workshop: IV

- I would be in favor of a VIS conference that publishes vis-related work that is currently going to CHI because the vis contribution (in terms of a new technique, system, or finding about visualization perception) isn't clear or doesn't fit the mold of the technique centric, quantitative mindset of the community.
- We spent so much time focused on unification that we left governance on the table (and, perhaps this was an important missed opportunity). We have a governing structure that worked when we were smaller, but we've outgrown it.
- A useful thought experiment for everyone: just for your own work, what area(s) would you like to have? I found the above exercise to be tricky for me, and I found it harder to evaluate the quality of my answer.
- The "areas" model did not originate and is not employed only at CHI. The area selection process and specialized reviewer pools are essential: in particular, respectful, fair and reasonable representation, under criteria discussed and established in advance (example: attendance numbers, registration numbers, agreed importance to the advancement of the field, keyword frequency/number of submissions etc). Conferences that have used this model successfully for a while (MICCAI/EMBS) have converged towards steady/historical areas, not the latest trends.
- Many want to participate but struggle to get a foot in the door. There are at least two major barriers to entry: a lack of relevant program material and a lack of familiarity with contribution norms.
- All the 3 sub-conferences have been successful in building communities and researchers feel "at home" in one or the other. We need to think creatively to make sure that we don't lose these identities as these are important to derive diverse and high-quality research on different fronts.

Appendix: Workshop Framing

Slides Presented by the Committee

Goals

Running a Conference is a High-Dimensional Optimization Problem

- Could moving to another hill improve our current local maximum?

- Evolution vs revolution
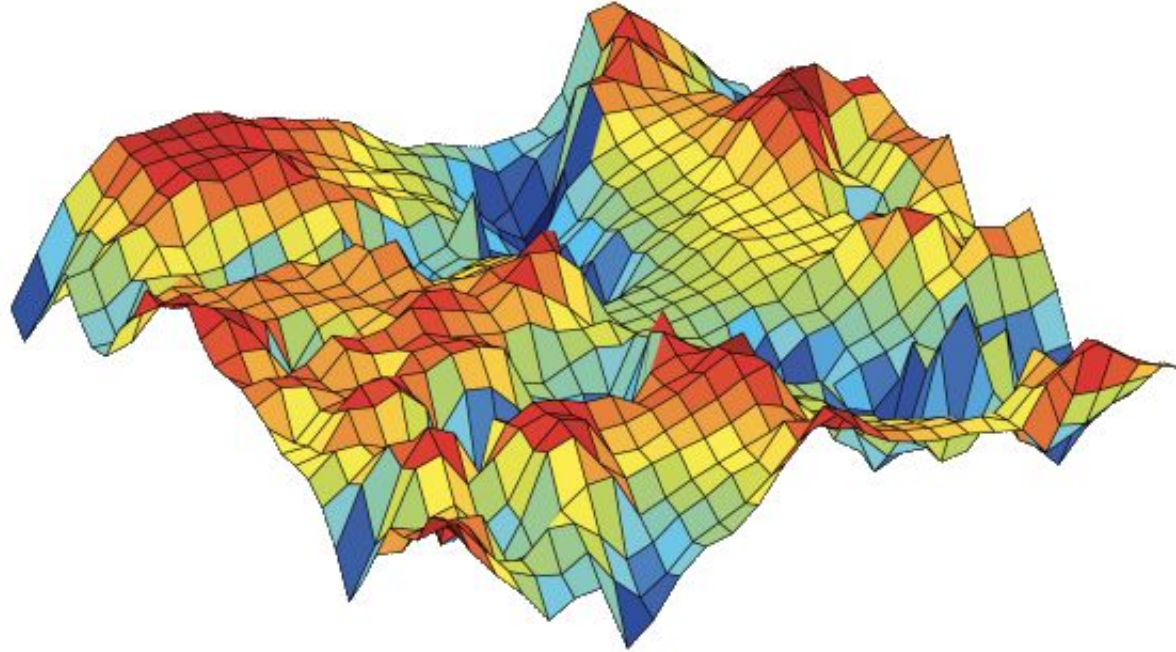
Possible Desired Outcomes of VIS Conference

- Promotion of novel research

- New products & companies

- Good careers & jobs for participants

- Vibrancy & liveliness

- Increased practitioner participation

Goals: What Are Our Targets?

Brand (being the top conference in VIS)

- Size (number of participants)
- Breadth (of content mechanisms and venues)
- Depth (maintain academic foundation)
- Diversity (of participant communities)
- Networking (connecting with people)
- Mentoring (coaching the next generation)
- Educating (teaching practical skills)

Goals, Expanded

- What is the desired size?
  - Ensure stability of current 1K size?
  - Grow substantially bigger in attendance?
  - Continue incremental growth?
- How do we grow and include emerging topics?
  - Design targets: Scalability, flexibility, expandability
  - Growing core vs connecting to broader world?
- What is our definition of vibrant?
  - Vibrancy is not just about growth!
  - Many drivers, avoid oversimplifying
- What is right balance between size and networking potential?
  - Bigger, more diverse conference is potentially detrimental to tight focus
  - Everybody's there vs too many to talk with

http://ieeevis.org/governance/1810-Restructuring-Workshop-Summary.pdf

Goals, Expanded

- What aspects of community diversity should we emphasize?
  - What communities are well served vs underserved?
  - Existing conference communities as identities (V-I-S)
    - what are pros and cons of losing them?
- How far do we go with education?
  - More for, and from, practitioners?
  - Visualization education as a topic in itself?
- What is the right balance of breadth and depth?
  - Can't be all things to all people, what should be our niche in the conference ecosystem?

http://ieeevis.org/governance/1810-Restructuring-Workshop-Summary.pdf

Learning from Historical Context

- Strive to preserve the good
- Ensure we learn from experience and mistakes
  - Delicate balance
    - Unproductive to stay mired in outdated baggage
    - Unwise to fail to warn about and guard against known hazards
- Dagstuhl/BIRS ground rules
  - Do not personalize, do not attack individuals, be respectful
  - Process concerns are entirely legitimate

http://ieeevis.org/governance/1810-Restructuring-Workshop-Summary.pdf

Slogans

"Structure to follow scholarship" - Gordon Kindlmann

"The goals of VIS should be to Inspire, Network, Exchange Ideas, and Mentor" - Mike Kirby

"Disciplinary advancement while avoiding disciplinary narcissism" - Jo Wood

"Coherent to the outside, diverse in the inside... Evolution, not revolution" - Michael Sedlmair

"Separate-but-equal was bad for civil rights, and it's bad for intellectual progress too" - Josh Levine

"We must have procedures in place to remove any opportunities for nepotism, favouritism or dominance by one group, doctrine or perspective" - Jason Dykes

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Scenarios and Lenses

Scenarios and Lenses

- Scenarios: concrete points in the multidimensional design space of conference models

- Axes: knobs to turn, generating scenarios

- Lenses: ways to assessing scenarios (evaluation function)
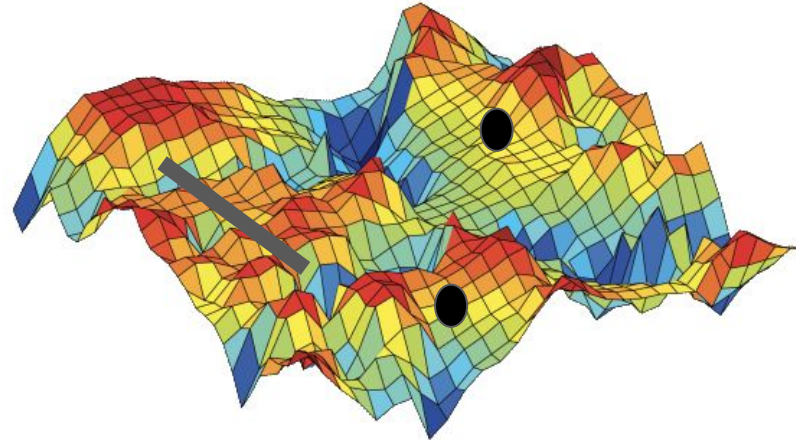
Lenses: People, Program, Processes

- People
  - Roles
  - Communities
- Program
  - Content Mechanisms
  - Venues
  - Scheduling / Sessions
  - Quality Standards
- Processes
  - Conference Models
  - Extensibility

program
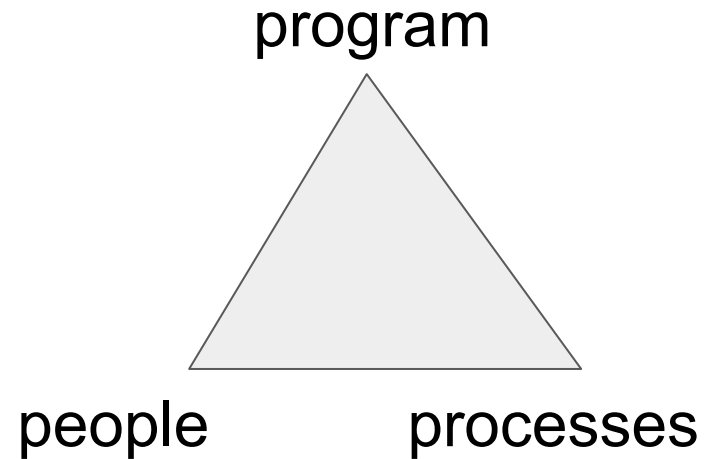
people   processes

Interlinked:

- processes built around judgement of people

- hard for the program to be flexible if processes are inflexible

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People: Roles

What are the considerations from the point of view of a...

- Attendee
- Author
- Reviewer / Program Committee Member / Papers Chair
- Conference Organizer
- Steering Committee Member
- Parent Society Executive (VGTC / IEEE CS / IEEE)

People: Communities

- Professions
  - Academics vs Practitioners vs Educators
  - Career Stages: Junior vs Midcareer vs Senior
  - Affiliations: University vs Industry vs Government Labs vs NGOs
  - Industry
    - big companies vs small startups
    - Stage of innovation pipeline: visualization-focused vs user of visualization
- Diversity
  - gender, race, geography, academic lineage, subfield, ...

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People: Communities, Cont.

- Conferences / Venues as Identities
    - VIS as a whole
    - V-I-S: VAST, InfoVis, SciVis
    - Associated Events: LDAV, BELIV, BioVis, VizSec, VDS, VAST Challenge, Arts, etc...
    - Existing vs new
- Academic Fields as Identities
    - subfields inside visualization: flow visualization, graph drawing, etc...
    - outside visualization: data science, statistics, machine learning, ...

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Program: Content Mechanisms

- Papers
  - Journal vs Conference-only papers
  - Full vs Short paper length
  - Research vs Practice tracks
  - Paper types
- Paper Talks
  - VIS papers
  - Partnership papers (TVCG, CG&A)
  - Now: All papers get talks
    - Alternate model: "orals" for only a subset, rest presented via posters (NIPS)
    - Talk length: longer vs shorter talks (KDD)
- Invited talks
  - How many and by whom? Plenary vs tracked?
- Panels, Tutorials, Posters

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Program: Quality Standards

- Where should we be headed with quality?
  - Maintain current quality/rigor - just right, don't break it?
  - Acceptance rate unnecessarily low so good work not getting in?
    - One bad review kills a paper
  - Lower the walls - quality bar too high already?
    - Make room for the crazy ideas or unconventional approaches?
- Do we need different levels of quality? How many?
  - Does a breadth of content mechanisms, venues, and tracks suffice to address?
    - or is more explicit attention needed?
- What are the various definitions of quality?
  - By subfield? By methodology? By community role/goals (research vs practice)?...

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Processes: Conference Models

- Design space of existing conferences
  - Can inspire many scenarios
  - Extensive discussion in our first report
- Three focal aspects
  - Reviewing / Papers
  - Steering / Governance
  - Program / Scheduling / Sessions

Processes: Extensibility

- How are completely new things started?
- How are initiatives promoted to next level?
  - workshop, symposium, main tracks, main integrated
- Extensive discussion in our first report
  - Positive feedback

Scenarios

- **[Diverge more]:** Allow further drift of V-I-S processes apart from each other
- **[Status quo]:** Leave things the way they are
- **[Previous report]:** Keep current V-I-S conferences and add clear rules for promotion from workshops & symposia to main events
- **[Process converge]:** Tighter normalization of processes across V-I-S but keep separate PCs and SCs
- **[Tracks w/ separate PCs]:** Conferences become tracks of the VIS conference with separate PCs, V-I-S names preserved
- **[Single PC]:** Single umbrella PC, possibly with subcommittees & area chairs
- **[Journal-First]:** Journal reviewing fully handled through TVCG (but not conf papers)
- **[Single SC]:** No more separate steering committees
- **[Full Integration]:** Single PC, single SC, V-I-S names gone, it's just VIS

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Convergence: Separable axes to consider

- Process convergence
  - Lockstep for all content mechanisms? (conference vs journal papers)
  - Lockstep for all governance policies? (selecting organizers, transparency)
- Name convergence
  - Keeping VAST, InfoVis, SciVis as names/identities? Morph conference name to VIS: Visual Analytics, Information Visualization, and Scientific Visualization?
- Program committee convergence
  - If we have single PC, what should it look like?
    - One big PC vs some kind of area partition to handle size/scope?
- Journal/VIS convergence
  - Do we move to journal-first only, vs stay with combined journal / VIS model?
    - Rolling deadlines are separable from journal first
- Steering committee convergence
  - Single integrated group of people making decisions for everybody?
    - What guarantees/preconditions would make this path viable?

Example: Parallel Sessions Scenario, with Lenses

- Scenario: Increase number of main tracks from 4 to 6 parallel sessions
- Conf Models: EuroVis 3, NIPS 3-5, CHI 12-15, JSM lots
- Lenses analysis by roles illustrates complexity
  - Program Chair
    - Now quasi-manual chokepoint (single person, conflict scripts, group sanity check)
  - Attendee
    - Pro: Lots of parallel sessions could lead to feeling of vibrancy / excitement
    - Con: Too many parallel sessions could lead to FOMO, especially if bursty wrt interests
  - Author/Contributor
    - Pro: Workshop submitter wants more slots to have better shot at being accepted
    - Con: Attendance might decrease because of too much competition from other sessions
  - Steering & General Chair
    - Must commit multiple years in advance to hotel contract with number of mtg rooms!
    - Balancing number of tracks vs number of attendees: spur growth vs cannibalize existing

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Example: Multiple scenarios for Single PC

- Areas
  - Minimal change: V-I-S are exactly and only the areas
  - Middle change: Multiple areas include V-I-S, can expand to include new fields (LDAV)
  - Major change: V-I-S names eliminated, areas formed by different crosscuts (CHI)
  - Dynamic partition: data-driven areas that change each time (NIPS)
- PC structure
  - Single large integrated PC
  - Per-area mini-PCs
- Assignment procedures
  - Human papers sort committee (SIGGRAPH)
  - Bidding
  - Keywords (EuroVis)
  - Algorithmic matching (PCS) - only as base?...
  - Author request for reviewers (whitelist/blacklist)
  - All combinations possible!
- Reminder: targets are scalability, flexibility, expandability

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Breakouts

- Mission
  - Generate and discuss scenarios
  - Consider their merits with respect to lenses
    - Generate more lenses too!
  - See what distribution of opinions emerges
    - Discover what points in that space have large sets of advocates
- Instances
  - First breakout: idea generation, random countoff
  - Second breakout: specific topics, self-assigned
  - Third breakout: big picture popup

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Concerns and challenges

Popping Up A Level

- What is the purpose and identity of VIS?
  - Deeply thoughtful one-pagers from all of you
  - We're all here because we care deeply about keeping VIS our flagship
- We won't all see issues the same way
  - Diverse set of people in room
    - Considering how to reach an even more diverse set of participants
  - Strive for empathy and respect
    - Articulate arguments for why things might be better one way than another
    - Attempt to understand the priorities of people who think similarly and differently
- Think about future
  - In addition to where we are now, and where we have been
  - But try to stay in the feasible region
- Hard decisions are before us: Can't have cake and eat it too

Challenges: Big Picture

- Minimal industry presence, anemic exhibit with more or less same companies
  - Despite explosion of non-academic activity in data science / visualization
- Some events sorely lack gender/race diversity
  - Should we have diversity guidelines?
- Ensure that we don't slowly lose relevance so that people drift away
  - Are big data & data science eating our lunch so in ten years we'll be irrelevant?
  - Interface w/ adjacent technical areas: competitor or collaborator?
  - Visualization is seen as essential for enabling other technologies, but does VIS provide a good vehicle or channel for cross-discipline collaboration?
- Tradeoffs: Can't always optimize everything
  - High technical quality, focus, academic reputation vs. "crazy ideas" and openness
  - Strong emphasis on specific communities vs. broad shared vision with low barriers
- External constraints: budget, location, geopolitics, ...

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Challenges by Lenses

Program

People

Processes

program

people   processes
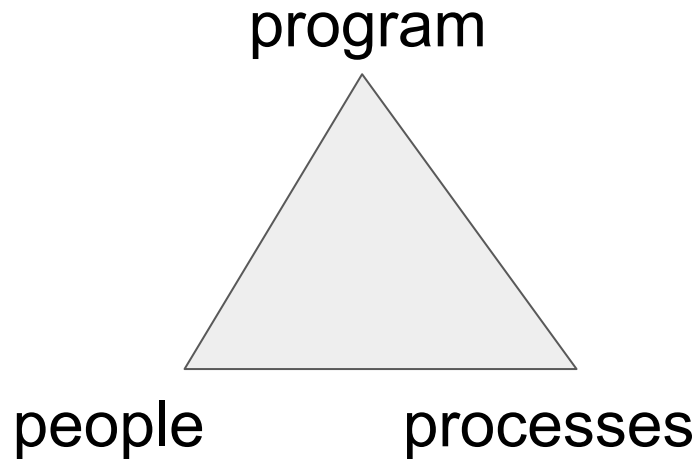
Program: Known Challenges

- Meeting size considerations
  - Concern not to dilute technical community
  - Opportunities to meet other experts with similar interests
  - Opportunities for informal networking
  - Spread X attendees over Y sessions
    - Does new session bring in new attendees or spread existing ones thinner?
- Expected quality of presentations
  - Academic requirement: First author student needs to give technical talk
  - But audiences increasingly expect polish (TED talks as the new bar)
- Desirable level of breadth in technical topics
  - Balance between continuity vs. the ability to change and adapt
- Desirable level of breadth in program format
  - Balance between backbone of paper talks and everything else

People: Known Challenges

- Attendees
  - Good mix of sessions and events for different communities?
  - Encourage special-interest audiences to come for 1 or 2 days?
- Authors
  - Not knowing where to submit, esp. between InfoVis & VAST
  - Perception that review quality can be uneven and gaming across V-I-S
  - Conflict between open/reproducible science & increased workload
- Reviewers / PC Members
  - Many reviewers lack calibration, easier to be paper killer than paper champion
  - Workload concerns
- Papers Chairs
  - Need for guidance on overriding PC member recommendations when appropriate
  - Need to feel empowered to remove unsatisfactory reviewers from the PC
  - Friction with TVCG

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Process: Known Challenges

- Organizing Committees
  - 3-part chairships not necessarily serving us so well
  - Lack of big picture when appointments proposed by SCs independently
    - Especially incoming/outgoing balance
  - No path for new communities/areas to be integrated into OCs
- Steering
  - How to pick front-line organizers if no longer have smaller SCs?
    - Many potential SC/VEC members would not have broad knowledge over all subfields, but single SC needs substantial familiarity of who's who
  - How many members can be in a single SC with effective group dynamics?
  - Need better processes to enforce term limits, esp. VGTC and associated events
  - VGTC Chair has a lot of control including near-majority of VEC membership
  - Continuity of institutional memory, transparency vs confidentiality issues

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Practitioners

Impact beyond academia

- Practitioners: Industry, Government Labs, NGOs, ...

- Current core strength is academic impact
  - Is more practitioner participation viable without losing core strength?
  - Some niches are already well served by other venues

- Many constituencies often grouped into one big bin but are very different
  - Early career researchers: need lower tier for papers - posters not enough
  - Application-oriented researchers: mix from junior to senior!
  - Design study - strongly research-focused
  - Application papers - similar to or different from old Case Studies

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Goals and Corollaries

Keep the VIS conference **healthy** and **lively**

Driving problems for research:
(new) applications

Inter-disciplinary/cross-disciplinary
exchange

be welcoming to other domains/
encourage non-VIS participants

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Practitioner engagement/participation

- How can we encourage former grad students who are now working for companies continue to come to VIS?

- What opportunities do practitioner participants in fact care about, and how can we best enable them?
  - Be paper author? Be speaker? Hire? Sell? Advertise?
    Hear about latest academic results?
  - Old model sponsor to sell products, newer model sponsor to hire people

- How can we increase practitioner engagement/participation?
  - Do we need a different paper type/track? With separate PC?

Practitioner Track with Separate PC?

- Explicit track for applied work with separate PC
- Pros
    - Viable path for people working in industry (in contrast to research tracks)
    - Intellectual benefit could be thoughtful discussion of lessons learned from practical use attempts
    - Could promote tech transfer from research result to industry adoption
    - Could provide researchers with valuable feedback on limitations of previously proposed solutions
- Cons
    - VIS History: old Case Studies track was very weak
    - Easy to slide into just taking weak/premature research papers

Practitioner paper track: Three scenarios to consider

- Promote existing VIS In Practice (VIP) up to full track?
  - Should not be in TVCG journal
  - Already integrates V-I-S

- Create new integrated track from scratch?
  - Successful industry solutions and applications require methods that bridge between V-I-S split
  - All techniques can and should be combined for effective solutions

- Start/continue track separately in each of V-I-S?
  - Core identities of V-I-S matter and don't need to be lost
  - Application-oriented work can thrive in each of them

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Next Steps

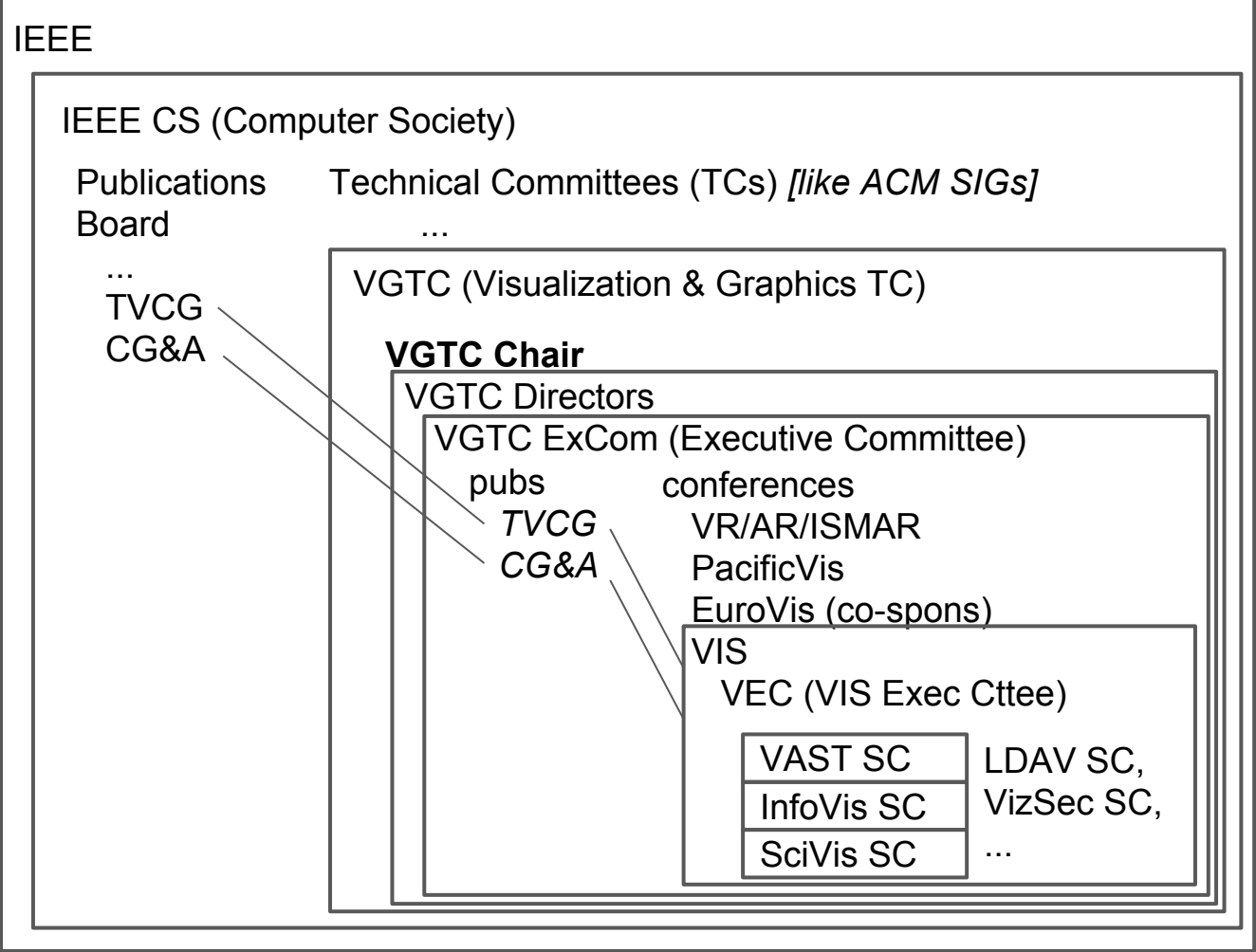# Where do we go from here? What's next?
Who decides?

- We'll summarize what comes out of Dagstuhl & here in next report
- Then goes to the VEC and the SCs
- Any amendment to the VEC Charter (eg new unified SC) requires approval from the VGTC ExCom

What do these acronyms mean?...

Governance

It's complicated...

IEEE

IEEE CS (Computer Society)

Publications Board

Technical Committees (TCs) *[like ACM SIGs]*

...

...
TVCG
CG&A

VGTC (Visualization & Graphics TC)

VGTC Chair

VGTC Directors

VGTC ExCom (Executive Committee)

pubs   conferences
  TVCG   VR/AR/ISMAR
  CG&A   PacificVis
           EuroVis (co-spons)

VIS
  VEC (VIS Exec Cttee)

VAST SC	LDAV SC,
InfoVis SC	VizSec SC,
SciVis SC	...

VGTC ExCom

- Chair elected for 2-4 year term
  - Voters: both VGTC (free) && IEEE CS (paid)
- ExCom Steering: Directors
  - Last 7 chairs
  - Term limit: 28 years (de facto)
- New charter in 2015, status unclear
  - Directors elect only 5 to be on ExCom
- Very top-down model: all positions nominated by VGTC Chair, approved by Directors
  - Except liaisons & ex officio

Chair
Claudio T. Silva

Vice Chairs
Miriah Meyer
Aditi Majumder

Appointed Officers
Loretta Auvil – Finance
Hans Hagen – International Liaison
Penny Rheingans – Ethics Officer
Tobias Isenberg – Publications
Joern Kohlhammer – Industrial Relations
Carlos Scheidegger – Web
Joao Comba – Secretary

Liaisons to VGTC Conferences
Anders Ynnerman – EuroVis
Dieter Schmalstieg – ISMAR
Bernd Froehlich – VR
Lisa Avila – VIS

Directors
Arie Kaufman
Robert Moorhead
Hanspeter Pfister
Amitabh Varshney
Klaus Mueller

Members at Large
Victoria Interrante
Mark Livingston
Daniel Weiskopf

Ex-Officio Members
Leila De Floriani –
    EIC TVCG
L. Miguel Encarnacao –
    EIC CG&A

VIS Awards Chair
Holly Rushmeier

New members in 2017 marked in RED

VEC

- Structure
  - 2 reps each from 3 SCs
  - 6 slots appointed through VGTC Chair
  - 6 year term limits
  - Started in 2006
    - When SCs agreed to 7 year term limits
- Scope
  - Set policy across years & tracks
  - Choose bid for future conf (general chairs)
  - Pre-approve symposia & workshops
- First-level decision making body for restructuring

VEC: VIS Executive Committee 17 → 18

VAST Steering: 2 slots
Brian Fisher, Silvia Miksch

InfoVis Steering: 2 slots
Jason Dykes, Jean-Daniel Fekete

SciVis Steering: 2 slots
Hans Hagen, James Ahrens

VGTC: 6 slots   VGTC Chair: *Claudio Silva*
VGTC Vice-Chair Conferences: *Mark Livingston* →
        Aditi Majumder
VGTC Director: *Hanspeter Pfister*
VGTC Director: *Arie Kaufman*
VGTC Vice Chair: *Rachael Brady* → *Miriah Meyer*
VEC Chair: *Tamara Munzner* → *Lisa Avila*

InfoVis Steering Committee

- Governance structure and policies documented at
  http://ieeevis.org/attachments/InfoVis_SC_Policies_FAQ.pdf
- Membership
  - Sheelagh Carpendale, Jason Dykes (VEC rep), Jean-Daniel Fekete (Chair, VEC rep), Jeff Heer, Stephen North, Melanie Tory (OC liaison)
- Policy: 7 members, 7 year term limits, current set invites new, typical 1 in/out
- Invitation criteria
  - Major metrics: record as author, reviewer, organizer
  - Also want diverse mix of
    - academic lineages
    - research topics, gender
    - job (academia, industry)
    - geography (proportional to research activity in major regions)
  - Data-driven decision making to ensure active people have a voice
    - https://keshif.me/demo/vispubdata
  - Standard progression: author, program committee, organizer, posters, papers

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VAST Steering Committee

- Membership
  - Gennady Adrienko, Min Chen, Brian Fisher (VEC Rep), Daniel Keim (Chair), Silvia Miksch (VEC Rep, OC Liaison), Giuseppe Santucci, John Stasko
- Policy & governance: not explicitly documented, but similar to InfoVis
  - Major metrics: record as author, reviewer, organizer
  - Also want diverse mix of
    - academic lineages
    - research topics, gender
    - job (academia, industry)
    - geography (proportional to research activity in major regions)

SciVis Steering Committee

- Membership
  - Jim Ahrens (VEC Rep, OC Liaison), Baoquan Chen, Issei Fujishiro, Hans Hagen (Chair, VEC Rep), Han-Wei Shen, Claudio Silva, Deborah Silver
- Policy & governance: not explicitly documented
- Invitation criteria
  - scholarship (authors and reviewers)
  - organizing experience
  - a healthy mix of academia and industry; research interest; gender; geography
- (typical) path to participate: authors, reviewers, PC, chairs

Participation

- VGTC Chair election coming up, **senior people please consider running!**
- Some VGTC ExCom positions are held by midcareer people
- If you're passionate about something, talk to VEC and SC members

- Steering/VEC/VGTC historical archive of who served in what roles
  https://bit.ly/2Kno783

Divorce challenges

- Many people ask if leaving IEEE is a viable strategy
  - Variant 1: Leave IEEE and go it alone
  - Variant 2: Leave IEEE and join ACM
  - Variant 3: VTGC exits IEEE CS to affiliate directly to IEEE
- Our relationship with TVCG is completely central to our success
  - We would not be able to keep it if we leave IEEE
- It would be a staggeringly enormous amount of work
  - Who would be willing to put in the time? Probably must come from VGTC Chair
- Cttee rec: unwise to have two massive changes simultaneously
  - Might be viable for the future, but this is not the time
  - Outside scope of restructuring subcommittee current mission

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