

Conference Board of the Mathematical Sciences
One Hundred and Thirty-first Meeting of the Council
Friday, May 3, 2024
Held at the AMS DC Office, 700 Pennsylvania Ave, SE
Washington, DC

- 8:30–9:00 Coffee and Tea will be available
- 9:00–9:15 **Introductions and Overview of Meeting** – Joan Ferrini-Mundy (Zoom)
- 9:15–10:00 **Business Meeting of the Council**
1. Secretary’s Report – Joleigh Honey
Approval of Minutes of the Meeting of December 1, 2023 (Appendix A)
 2. Treasurer’s Report – Ted Coe
 - a. FY 2024 Half-Year Financial Report (Appendices B&C, pp. 7-8)
 - b. Approval of FY2025 budget (Appendix B, p. 7)
 2. Director’s Report – Charles Steinhorn (Appendix D)
 3. Nominating committee report and vote on Secretary, Treasurer and EC member-at-large
 4. Announcements
- 10:00–10:20 Break
- 10:20–11:20 CBMS EDI task force follow up – Enrique Galindo, Abbe Herzig, Dave Kung
- 11:20–12:10 Update on CBMS Modernizing Students’ Mathematical Experiences Working Group – Ted Coe
- 12:10–1:10 Lunch
- 1:10–2:00 Update on Teacher Recruitment/Retention Data Working Group – Trena Wilkerson
- 2:00–3:00 AI and Mathematics – Jeremy Avigad, *Carnegie Mellon University*
- 3:00–3:15 Break
- 3:15–5:00 2026 Year of Mathematics Work Session – Julie Liss, *strategist for Year of Math Project*
- 5:00–6:00 Reception

CBMS May 2024 Council Meeting Invitees

Attendees	Group	Email
Anne Dudley	AMATYC	adudley@amatyc.org
George Hurlburt	AMATYC	georgehurlburt@amatyc.org
Bryna Kra	AMS	kra@math.northwestern.edu
John Meier	AMS	jem@ams.org
Karen Saxe	AMS	kxs@ams.org
Shari Stockero	AMTE	stockero@mtu.edu
Howard Gobstein	<i>APLU</i>	hgobstein@aplu.org
Bonnie Ghosh-Dastidar	ASA	Madhumita Ghosh Dastidar@rand.org
Donna Lalonde	ASA	donnal@amstat.org
Ron Wasserstein	ASA	ron@amstat.org
Michael C. Laskowski (Chris)	ASL	laskow@umd.edu
Phokion Kolaitis	ASL	kolaitis@soe.ucsc.edu
Eboney McKinney	ASSM	Eboney.McKinney@azed.gov
Paula Moeller	ASSM	pmoeller01@gmail.com
Darla Kremer	AWM	darla@awm-math.org
Talitha Washington	AWM	twashington@aucenter.edu
Adam Tucker	B&M Gates Foundation	Adam.Tucker@gatesfoundation.org
Chapin Springer	B&M Gates Foundation	Chapin.Springer@gatesfoundation.org
Melissa Luce	B&M Gates Foundation	Melissa.Luce@gatesfoundation.org
Ryen Borden	B&M Gates Foundation	Ryen.Borden@gatesfoundation.org
Beatrice Moore-Luchin	BBA	luchinconsulting@gmail.com
Pam Seda	BBA	pamseda@sedaeducationalconsulting.com
Tanaga Hannah-Rogers	BBA	thannah82@gmail.com
Dayle Rebelein	CBMS Admin Asst	darebelein@vassar.edu
Joan Ferrini-Mundy	CBMS Chair	joan.ferrinimundy@maine.edu
Robert Bryant	CBMS Chair-Elect	bryant@math.duke.edu
Charles Steinhorn	CBMS Director	steinhorn@vassar.edu
Jennifer Quinn	CBMS EC	jjquinn@uw.edu
Enrique Galindo	CBMS EC and AMTE	president@amte.net
Joleigh Honey	CBMS Secretary	Joleighhoney@gmail.com
Ted Coe	CBMS Treasurer	ted.coe@gmail.com
Trena Wilkerson	CBMS Working Group	Trena.Wilkerson@Baylor.edu
Paul Kehle	COMAP	KEHLE@hws.edu
Diane Briars	COMAP	djbmath@comcast.net
Afi Wiggins	Dana Center	afi.wiggins@austin.utexas.edu
Dave Kung	Dave Kung Consulting	dtkung@gmail.com
Jessica Utts	IMS	jutts@uci.edu
Michael Kosorok	IMS	kosorok@unc.edu
Hortensia Soto	MAA	hortensia.soto@colostate.edu

Michael Pearson	MAA	mpearson@maa.org
Kathryn Leverenz	Mathematics Institute of Wisconsin	kathryn.leverenz@mathinstitutewi.org executivedirector@momath.org, ea@momath.org
Cindy Lawrence	MoMath	
Aris Winger	NAM	Executive-director@nam-math.org
Asamoah Nkwanta	NAM	president@nam-math.org
Alex Temple	NAS	ATemple@nas.edu
Ana Ferreras	NAS	AFerreras@nas.edu
Eric Friedlander	NAS	ericmf@usc.edu
Heidi Schweingruber	NAS	HSchweingruber@nas.edu
Maria Lund Dahlberg	NAS	mdahlberg@nas.edu
Michelle Schwalbe	NAS	MSchwalbe@nas.edu
Padhu Seshaiyer	NAS	pseshaiy@gmu.edu
Tom Wang	NAS	twang@nas.edu
Katey Arrington	NCSM / Dana Center	karrington@mathedleadership.org
Kim Gill	NCSM	kgill@mathedleadership.org
Ken Krehbiel	NCTM	kkrehbiel@nctm.org
Kevin Dykema	NCTM	kdykema@nctm.org
Adriana Salerno	NSF	asalerno@nsf.gov
David Manderscheid	NSF	dmanders@nsf.gov
James L. Moore	NSF	jamoore@nsf.gov
Jeremy Tyson	NSF	jtyson@nsf.gov
Jan Cameron	NSF	jcameron@nsf.gov
Mike Ferrara	NSF	mferrara@nsf.gov
Tie Luo	NSF	tluo@nsf.gov
Karen Bliss	SIAM	kbliss@siam.org
Suzanne Weekes	SIAM	weekes@siam.org
Sven Leyffer	SIAM	leyffer@anl.gov
Craig Wesley	Simons Foundation	cwesley@simonsfoundation.org
Greg Heidrich	SOA	gheidrich@soa.org
José A. Marroquin	SOA	JMarroquin@soa.org
Timothy Rozar	SOA	Trozar@rgare.com
Erin Sylves	TODOS	EISylves@fcps.edu
Marian Dingle	TODOS	mdingle@comcast.net
Nora Ramirez	TODOS	exec@todos-math.org
Sylvia Celedon Pattichis	TODOS	sylvia.celedon@austin.utexas.edu
Abbe Herzig	CBMS EDI Task Force	abbe.herzig@gmail.com
Julie Liss	Year of Math strategist	julie.libera.liss@gmail.com
Siobhan Roberts	journalist	robertssiobhan@gmail.com

Appendix A

Minutes of the 130th Meeting of the Council of the Conference Board of the Mathematical Sciences Held at the ASA Headquarters, 732 North Washington St., Alexandria, VA Friday, December 1, 2023

The following were present for all or part of the meeting.

Executive Committee: Joan Ferrini-Mundy, Chair; Robert Bryant, Chair-Elect; Joleigh Honey, Secretary; Ted Coe, Treasurer; Enrique Galindo, Member-at-Large (and AMTE); Jennifer Quinn, Member-at-Large.

Council Members: Laura Watkins, AMATYC; Bryna Kra, AMS; Donna Lalonde, ASA; Michael C. Laskowski, ASL; Lisa Ashe, ASSM; Talitha Washington, AWM; Shelly Jones, BBA; Catherine Roberts, COMAP; Jessica Utts, IMS; Hortensia Soto, MAA; Cindy Lawrence, MoMath; Katey Arrington, NCSM; Kevin Dykema, NCTM; Sven Leyffer, SIAM; José A. Marroquin, SOA; Marian Dingle, TODOS.

Additional society representatives: Anne Dudley, AMATYC; George Hurlbert, AMATYC; Karen Saxe, AMS; Shari Stockero, AMTE; Ron Wasserstein, ASA; Darla Kremer, AWM; Tanaga Hannah Rodgers, BBA; Michael Pearson, MAA; Aris Winger, NAM; Psul Gray, NCSM; Kim Gill, NCSM; Ken Krehbiel, NCTM; Karen Bliss, SIAM; Suzanne Weekes, SIAM; Erin Sylves, TODOS.

Invited Guests: Abbe Herzig, TPSEMath; Margret Hjalmarson, NSF; Dave Kung, Dana Center; Kathryn Leverenz, Mathematics Institute of Wisconsin; James L. Moore, NSF; Adriana Salerno, NSF; Michelle Schwalbe, NAS; Padhu Seshaiyer (via Zoom), NAS; Alex Temple, NAS; Denise Thornton, Dana Center; Hendrik Tolman, NOAA; Jeremy Tyson, NSF; Natasha White, NOAA; Afi Wiggins, Dana Center; Trena Wilkerson (via Zoom), CBMS Working Group on Teacher Recruitment and Retention.

Staff: Charles Steinhorn, Director; Dayle Rebelein, Administrative Assistant

Reports from the presenters will be available at <https://www.cbmsweb.org/council-meeting-materials/>.

I. Business Meeting

Chair Joan Ferrini-Mundy welcomed those who were present and outlined the agenda.

1. Secretary's Report. Joleigh Honey

Approval of Minutes. The minutes of the May 2023 CBMS Council meeting were approved unanimously.

2. Treasurer's Report. Ted Coe

- a. **FY 2023 Operating Budget Income/Expense Report.** The report was presented for informational purposes.
- b. The Unrestricted Net Assets History was presented for informational purposes.
- c. **FY 2024 Dues Assessments.** The proposed FY2024 dues were presented and approved as presented.

3. Director's Report. Charles Steinhorn submitted a written report distributed with the agenda materials and answered questions based on the report.

4. Announcements.

Padmanabhan Seshaiyer (USNC/MI, via Zoom) spoke about the Fifteenth International Conference on Mathematical Education (ICME-15) that will take place in Sydney, Australia, July 7-14, 2024. The U.S. National Commission on Mathematics Instruction (USNC/MI), that Seshaiyer currently chairs, is the entity in the U.S. that is adherent to the International Commission on Mathematics Instruction (ICMI), which organizes ICME. Seshaiyer encouraged CBMS member societies to consider supporting the U.S. reception at the event.

II. Update on the CBMS Modernizing Students' Mathematical Experiences Working Group

At the December 2022 Council meeting, it was resolved that a working group would be formed to draft a statement for consideration by the Council (see the December 2022 minutes). Ted Coe, who is chairing the group, reported in May that the group has been formed and has begun its work (see the May 2023 minutes). His brief report at this meeting provided an update. The group is at work on a document calling for the development of a framework that provides a 21st century vision for the mathematical sciences experiences for students in grades 9-14 that parallels the National Academies document, *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*, that preceded the development of the *Next Generation Science Standards*. The group expects to have a first draft ready for consideration by the Council at the May 2024 meeting.

III. Update on the CBMS Teacher Recruitment/Retention Data Working Group

Trena Wilkerson (via Zoom), the working group Chair, updated the Council on the progress the group is making. Four mathematics education graduate students, supported by a grant from the Bill and Melinda Gates Foundation awarded to CBMS, were hired over the summer and have begun collecting and collating data from the states. Wilkerson presented some initial findings, and she expects to make a semifinal report to the Council at the May 2024 meeting. Work should be completed during the summer of 2024, with the expectation that the results will be made public and publicized at the beginning of the new school year.

IV. NSF EDU Directorate Presentation

James L. Moore, the new Assistant Director of the NSF Directorate for STEM Education

(EDU), gave an overview of EDU programs and initiatives. He mentioned that he would like to see EDU collaborate with the new NSF Directorate, *Technology, Innovation, and Partnerships (TIP)*. He also suggested that he would like to see EDU develop partnerships with other agencies, industry, and other organizations to leverage support provided by EDU to larger, longitudinal projects. He also strongly encouraged the mathematical sciences community to submit proposals to EDU.

V. National Oceanic and Atmospheric Administration Presentation

Hendrik Tolman, Senior Advisor for Advanced Modeling Systems at the National Oceanographic and Atmospheric Administration (NOAA), gave a presentation on wind wave modelling and the *Unified Forecast System (UFS)*. The latter is a comprehensive, community-developed Earth modeling system, designed as both a research tool and as the basis for NOAA's operational forecasts. Natasha White, the Program Manager in the NOAA Office of Education for its Educational Partnership Program with Minority Serving Institutions, followed Tolman's talk with a presentation about student opportunities at NOAA, in particular its Undergraduate Scholarship program and its Internship programs for undergraduate and graduate students.

VI. Mentoring Initiatives through Mathematics

Abbe Herzig and Aris Winger gave a presentation that focused on the then upcoming March 22-24, 2024 workshop at the SLMath Institute, [*Critical Issues in Mathematics Education 2023: Mentoring for Equity*](#), for which they were organizers (Winger was the lead). Workshop participants would learn about the evidence base for effective mentoring, with a focus on culturally responsive mentoring that supports all students and faculty along their mathematical paths. The workshop combined discussion of research evidence, review and adaptation of practical tools, and explicit training in effective mentoring. Videos of the workshop talks are available at the workshop website (linked above).

VII. Update on the Working Group on the Role of the Mathematical and Statistical Sciences in Data Science

Joleigh Honey and Charlie Steinhorn gave a brief update on this working group that they are co-facilitating. The group began its work just in the fall and consequently is not very far along. It has divided itself into subgroups, one focusing on PK-12 and the other on higher education, since the issues facing these two spaces are quite different.

VIII. Discussion about 2026 as a Year of Mathematics

Charlie Steinhorn and Alex Temple made a brief presentation on this project, then in its very early stages, outlining its goals and the steps to be undertaken over the next several months. CBMS Chair Ferrini-Mundy then facilitated a wide-ranging discussion that generated a range of engaging ideas and themes for Year of Mathematics activities.

The meeting adjourned at 5:00pm to the reception, with wines once again generously provided by Uri Treisman.

Appendix B

FY 2023 Actual and FY 2024 Budget Shown for Comparison

Income	FY 2023	FY 2024	FY 2024	FY 2025
	Actual	Budget	First half actual	Suggested budget
Dues	\$64,675	\$65,000	\$32,500	\$65,000
Interest	\$0	\$0	\$0	\$0
Royalties	\$76	\$0	\$0	\$0
NSF Reg. Res. Confs. & 2025 Survey				
Salaries	\$29,167	\$30,000	\$15,000	\$30,000
Indirect Costs	\$3,833	\$4,500	\$1,724	\$9,375
Total Income	\$97,751	\$99,500	\$49,224	\$104,375
Expenses	FY 2023	FY 2024	FY 2024	FY 2025
	Actual	Budget	First half actual	Suggested budget
Compensation				
Director	\$35,000	\$35,000	\$17,500	\$35,000
Administrative Coordinator	\$20,250	\$20,000	\$10,000	\$22,500
Postage and Shipping	\$3	\$500	\$69	\$500
Supplies	\$194	\$3,000	\$571	\$3,000
Internet	\$0	\$0	\$0	\$0
QuickBooks license	\$1,089	\$1,100	\$1,111	\$1,100
Website	\$678	\$500	\$0	\$500
Council Meetings				
Travel	\$11,029	\$10,000	\$5,438	\$10,000
Food and Other Meeting Expenses	\$9,472	\$10,000	\$4,123	\$10,000
Staff Travel	\$1,441	\$12,000	\$5,026	\$10,000
Accounting Fees	\$4,583	\$3,500	\$0	\$4,000
Auditing Fees	\$9,532	\$3,000 ^a	\$0	\$3,000
Insurance	\$1,459	\$2,000	\$973	\$2,000
Unbudgeted Expenses				
Bank Service Charges	\$12	\$0	\$11	\$15
Charitable contributions	\$0	\$0	\$0	\$0
Total Expenses	\$94,742	\$98,600	\$44,820	\$101,615
Operating Surplus or (Deficit)	\$3,009	\$900	\$4,404	\$2,760

Notes

a - These are only paid every third year. This is in anticipation of auditing fees of approximately \$9000 in FY 2026.

Appendix C

Unrestricted Net Assets as of March 31, 2023

cash on hand – Bank of America	\$153,096
accounts receivable	
dues	\$850
other	\$0
accounts payable	\$0
Net	\$153,946

Investments

Vanguard Balance Sept 30, 2021	\$182,400
Vanguard Balance Mar 31, 2022	\$181,876
Vanguard Balance Sept 30, 2022	\$172,460
Vanguard Balance Mar 31, 2023	\$172,424
Vanguard Balance Sept 30, 2023	\$178,763
Vanguard Balance Mar 31, 2024	\$190,126
Total Unrestricted Net Assets	\$344,072

Appendix D

Directors' Report — Charles Steinhorn

It has been slightly more than two years since I assumed the position of CBMS Director in February 2022. With the transition from David Bressoud now well behind me, including addressing several multi-year responsibilities that came due in this short period of time, my work now has taken on a good rhythm, even with the emergence of the totally unexpected 2026 Year of Mathematics effort. Below, I discuss my activities since the December Council meeting and look ahead to the next several months. I once again want to express what a pleasure and privilege it continues to be to meet and collaborate with the many exceptional people who give themselves to the work we undertake under the umbrella of CBMS.

The past six months

Following the initial discussion and brainstorming session about the 2026 Year of Mathematics project at the December CBMS Council meeting, much of my attention has been directed to this project. The tasks requiring most immediate attention were the formation of a Year of Math Task Force and the development of a strategic approach for the initial phases of the project.

The task force was filled out by early March. It is a diverse group that is broadly representative of the CBMS member societies. The members of the Task Force are: Lisa Ashe, Robert Bryant (Chair), Diana Ceja, Ingrid Daubechies, Edray Goins, Liane Pinero Kluge, Cindy Lawrence, José Marroquin, Karen Saxe, April Strom, Uri Treisman, and Tian Zheng. Alex Temple, the Staff Director of the U.S. National Committee for Mathematics, and I serve *ex officio*.

Determining how to approach what we hope will be a broad and impactful project was initially vexing to me and others---we have no experience in this arena. While it was apparent that we eventually would need to engage an advertising and communications firm, for which we would require substantial resources, I frankly did not have any sense of how to go about this effort. As luck would have it, an old friend of mine (from my undergraduate days!) had been the vice chairman of one advertising agency and, until his recent retirement, chairman of another. I reached out to him and he agreed to see if he could help. He thought that it would make sense financially and strategically to find an individual to serve as the consultant/strategist for the first stage of the project, and offered to help us identify such a person.

We are indeed fortunate through the efforts of my friend to have been able to engage Julie Liss as our consultant/strategist. Julie has long and extensive experience as a strategist in the advertising world and, as luck would have it, her Northwestern undergraduate degree is in statistics, making her an ideal fit for the Year of Mathematics effort. By the time of this meeting, the Task Force will have met twice with Julie, with the goal to begin to develop a strategic platform for the Year of Mathematics. She will lead the final two-hour session of this meeting, building on her sessions with the Task Force.

CBMS is responsible for providing central administrative support for the longstanding NSF-CBMS Regional Research Conference series. Over the last 6 months we have continued to carry

out these responsibilities, and I also wrote and submitted a 4-year renewal proposal to NSF for this purpose.

Three NSF-CBMS Research Conferences were funded by NSF in fall 2023 and are scheduled for summer 2024. These are:

- Algorithmic Fractal Dimensions, May 20-24 at Drake University
- Mathematical Methods for Novel Metamaterials, May 20-24 at Auburn University
- Inverse Problems and Nonlinearity, June 3-7 at Clemson University.

Publicity for these conferences was sent out by CBMS office in early February, as is customary. I reported in December that the number of conferences scheduled for summer 2024 and the number that took place in summer 2023 are significantly lower than the historical average of 6-7. I suspect this is at least in part a consequence of the lingering effects of the pandemic. Nonetheless, this is a potentially worrisome trend in what has been an immensely successful, long-running conference series, and warrants attention going forward. One positive sign is that for the first time since assuming my position, I have been contacted by prospective conference organizers for help and advice with their NSF proposals, the due date for submission being April 26th. As I expect that not all proposers will contact me for assistance, I am hopeful that we will see an increased number of proposals, and ultimately conferences in summer 2025.

The current NSF award to CBMS for its administrative role originally was set to end in summer 2023. I requested a no cost extension through July 2024 that will partially support the summer 2024 program; the grant has unspent funds resulting from cancelled and postponed conferences caused by the pandemic. The renewal proposal that I wrote and submitted in early February 2024 has a requested September 1, 2024 start date and if funded as proposed will run through August 2028.

In the proposal for the current NSF award to CBMS, David Bressoud included an Advisory Board that (as David freely admits) really did not get put to use. As mentioned above, there is concern that the number of conferences that took place last summer and the number scheduled for the summer of 2024 are significantly lower than the historical average. With this concern in mind, for the renewal proposal I recruited a new Advisory Board and plan to sharpen the group's focus to: (i) identify topics and lecturers for future conferences, with particular attention to EDI, and (ii) identify suitable host institutions, especially minority serving institutions. The members of the new Board are: Jana Asher (Computer Science and Data Science, Goucher College), Duane Cooper (Mathematics, Morehouse College), Lisa Fauci (Mathematics, Tulane University, to start in 2025), Annie Green Howard (Biostatistics, University of North Carolina, Chapel Hill), Ken Ono (Mathematics, University of Virginia), Tatiana Toro (SL Mathematical Sciences Institute), and Anthony Várilly-Alvarado (Mathematics, Rice University).

Of particular interest, Prof. Toro and I have discussed the possibility of aligning Regional Research Conferences with upcoming thematic programs at the several Mathematical Sciences Research Institutes in the U.S., in an effort to diversify participation in these programs. She will discuss this at the institute directors' meeting in April and may invite me to meet with the directors when they meet at the next Joint Math Meetings.

The NSF proposal for the 2025 CBMS Survey of the nation's undergraduate programs in the mathematical and statistical sciences at two and four-year institutions was submitted in July 2023. The program officer requested adjustments in February and we expect that the proposal will be approved for funding very soon, perhaps by the time of this meeting. This will be the first time that CBMS will be the fiscal agent for the CBMS Survey award. David Bressoud, who will be the PI on the grant (I will be a co-PI), deserves our gratitude for his leadership in this effort. The CBMS working group chaired by David that focused on how to improve the Survey after such disappointing completion rates for the 2020 Survey, and that served as a sounding board for the development of the 2025 proposal, will continue in an advisory capacity for the 2025 Survey. The group's membership is listed in the minutes of the December 2022 meeting.

Some funds remain from the NSF award for the 2020 Survey (for which AMS is the awardee), and NSF approved repurposing these funds to address issues relevant to the 2025 Survey. These funds will be used for RMC Research Corporation, the firm we have engaged for the 2025 survey, to: (i) undertake a pilot study to understand further why the completion rates for the 2020 CBMS survey were so low and to identify strategies to increase completion rates; and, (ii) begin the feasibility study to determine the cost of migrating datasets from prior CBMS surveys into the interactive online dashboard planned for the 2025 Survey. Regrettably, the program officer for the 2025 proposal informed us in February that funding to complete the feasibility study must be cut from the 2025 proposal. Thus, we will need to seek an alternate source of funding if we are to proceed further with an effort to make the dashboard a source of longitudinal data.

The strategy of bringing together small groups remotely with well-defined tasks between the twice-annual Council meetings has proven to be an effective strategy for CBMS to move nimbly on important issues, and to tap more deeply into its potential as an impactful umbrella organization. Four such working groups, based on priorities identified at recent CBMS meetings, were formed in 2022 and early 2023. I support each group as a member *ex officio* (except the one that I am co-chairing/facilitating).

The work of the group David Bressoud chaired on the CBMS Survey has been discussed above.

In response to the USNC/MI request to CBMS to develop national data on the crisis in recruiting and retaining mathematics teachers, Trena Wilkerson is chairing a working group on this issue. The group's members are listed in the December 2022 meeting minutes. Trena has given reports (via Zoom) at the December 2022, May 2023, and December 2023 Council meetings. Supported by a grant from the Bill and Melinda Gates Foundation to CBMS awarded in February 2023, four mathematics education graduate students were hired last summer to assist in collecting and collating teacher recruitment and retention data from the states. Trena's group expects to complete its work and submit a final report over the summer; she will give a semi-final report to the CBMS Council at this meeting. Once completed, it is imperative that the report be disseminated widely. For that purpose, we will engage the Burness firm to provide strategic communications assistance. I have identified some available funds for this purpose.

Ted Coe is chairing a working group that grew out of the final session of the December 2022 meeting, with the aim of finding where there may be consensus within the CBMS Council about what marks a twenty-first century mathematical sciences experience for students in grades 9-14.

The membership of the working group was listed in the May 2023 CBMS Council minutes. The group has been at work on a document to be presented to the Council for its endorsement that will call for the soon to be established National Academies Board on Mathematical Sciences Education to undertake a consensus study to produce a framework for Mathematical Sciences education in grades 9-14. The group believes that such a study could play a role similar to the [*Framework for K-12 Science Education*](#) that served as a foundation for the *Next Generation Science Standards*. Ted will present and lead discussion on the working group's semifinal draft document at this meeting. Based on this discussion, the working group hopes to present the final version to the Council for its endorsement at the December meeting at the latest.

Together with Joleigh Honey, I am cochairing/facilitating a working group on the role of the mathematical and statistical sciences in Data Science. Its membership was listed in the May 2023 CBMS Council minutes. The group first began meeting last fall, and soon decided to divide (not disjointly) into two subgroups, one dealing with the Data Science in the K-12 space, and the other focusing on the post-secondary context, given their very different concerns. Each subgroup has met (via Zoom) several times over the last couple of months. The K-12 group has decided to draft a document to present to the CBMS Council to address the broad range of issues it has identified around data science in K-12 education. The subgroup working in the higher education space has decided to build out in more detail the list of programs, courses, etc. that one of the group's members, Michael Dorff, has curated, and to use the list as a resource to find faculty to lead workshops to offer guidance to others who wish to develop courses and programs in Data Science. Joleigh and I expect to make a substantial report on the efforts of the working group at the December Council meeting.

In several informal conversations during the last few months of 2022, I heard from people that it was time to think about updating *The Mathematics Education of Teachers II* (MET) volume, published in 2012. Given the increasing importance of statistics and data science, and the CBMS Pathways work over the last decade, it seemed natural to consider linking such an effort with an update of the ASA's *The Statistical Education of Teachers* (SET) volume, published in 2015. This idea was received favorably by ASA, and it was agreed that we could aim for the simultaneous release of revisions to MET and SET, written by separate groups working in tandem, possibly with a liaison serving on both groups to facilitate communication, and with a common online repository for work drafts. Further, it is hoped that the two updated volumes could include a combined executive summary as well as a common chapter related to Data Science education.

The SET writing team, chaired by Christine Franklin, is already at work. Marilyn Strutchens has agreed to chair the MET writing team, and the writing team should be in place by early or mid-May. A grant from Math for America (which provided substantial funding for MET II) will support an in-person convening of the MET writing team sometime this summer. Michael Pearson has kindly offered use of MAA space for the meeting. It is expected that any subsequent meetings will be via Zoom. Representatives from the MET team will be briefed by the SET team after that group's May meeting, and the SET team will be briefed by the MET team following its meeting this summer. It is hoped that the two documents can be completed and simultaneously released by the end of 2025.

During the session at the December 2022 Council meeting focusing on commitments to action and accountability called for in the CBMS EDI statement, it was decided to form a task force to follow up on these issues. The task force, to be chaired by the late Tim Hendrix, was charged with drafting a document regarding EDI policies and practices for CBMS, and presenting to the CBMS Council reports from member organizations on their progress and the challenges they face. This effort was delayed due, sadly, to Tim's untimely passing in July 2023. In the fall of 2023, Enrique Galindo, Abbe Herzig, and Dave Kung---the latter two drafters together with Tim of the CBMS EDI statement---agreed to chair the task force, and it has subsequently begun its work. Abbe, Dave, and Enrique will facilitate their first EDI follow-up session at this meeting.

Looking Ahead: the next six to twelve months

I expect the next 6 months to be an intensive period of work on the Year of Mathematics effort. I already am in the process looking to secure the small amount of funding needed to support Julie Liss' work through the summer and into the early fall. Working with Julie, we will need to develop a strategic platform for the overall project, including success metrics, by sometime this summer. The platform will serve as a foundation on which we will develop proposals: (i) to potential funders for the substantial support that will be needed to make the Year of Mathematics project an impactful success; and (ii) to prospective advertising/communications firms that we will engage to work with us to realize the effort. Task Force members also will need to work with the CBMS member societies to ensure that their leadership and members are fully apprised of our progress; a great deal of energy and effort from our community ultimately will be needed. All of this probably needs to take place by the end of 2024 at the latest.

CBMS Chair Ferrini-Mundy announced at the December 2022 meeting that it was time again for members of the Executive Committee and me to meet separately or in small groups with the leadership of each CBMS member society. Such conversations were held during the winter/spring of 2021, the first time such an effort was undertaken, going back over a decade. These meetings informed the CBMS EDI, Data Science, and Workforce efforts. A small group of volunteers (solicited via email after the December 2022 Council meeting) offered to assist in shaping and focusing the new round of conversations. It was originally planned that these meetings would take place during the spring/summer of 2023, but for a variety of reasons---including the number of pressing items needing attention during my first two years as director---this effort has been delayed.

It now is planned to have these conversations take place in the late spring and early summer of 2024. The timing is apt, with Trena Wilkerson's and Ted Coe's working groups nearing completion of their efforts, and the work of the EDI task force and Data Science working group well underway. I would like to see us hold such conversations periodically, say every 2-3 years. While I know most of the current presidents and executive directors, these meetings can provide the CBMS leadership with a better understanding of the concerns and priorities of its member societies. These in turn can serve as a planning mechanism for topics to include in Council meeting agendas and, ultimately, the activities and projects in which CBMS elects to engage.

Trena Wilkerson's working group, charged with reporting on national data concerning the crisis in recruiting and retaining math teachers, plans to complete its work sometime this summer. We

will need to follow this with an effort to communicate the group's findings broadly. We will engage the Burness firm for this purpose, and I already have had preliminary conversations with our contacts in the firm, Andy Burness and Gideon Hertz, with the understanding that we want to publicize the findings at the beginning of the new school year.

In 2021 several virtual conversations were held involving the CBMS leadership, chairs and directors of some of the National Academies boards, and others, about the possibility of establishing a new board on mathematical sciences education at the National Academies. Those of us with a long enough memory will recall the now-defunct Mathematical Sciences Education Board that ceased functioning in 2008, after 23 years in operation, leaving a hole that a new board could fill to address critical issues in this domain. It now appears that a new National Academies Board on Mathematical Sciences Education is on the horizon. As this new board is established, we can expect that there will be a (formal) role for CBMS to play, just as there is for the U.S. National Committee for Mathematics (USNC/M) and the U.S. National Commission on Mathematics Instruction (USNC/MI).

At the end of 2024, six positions on the USNC/M will need to be replaced. CBMS is responsible for nominating two-thirds of the Committee membership, and hence will need to submit nominations for four positions. For each position, CBMS presents a primary nominee and an alternate. I have initiated the process via an email sent out to CBMS member society presidents and executive directors asking for suggestions for nominees, with a request for responses by April 26th. The details of this process are in that email. My hope is that we will be able to submit the CBMS nominee slates by early fall so that the new committee members will be able to assume their positions on January 1, 2025.

As mentioned earlier in this report, the MET II writing team will begin its work in earnest over the summer. The team will hold an in-person kick-off meeting at MAA headquarters this summer that I will attend. I will continue to support this effort through the entire process, culminating in the hoped-for simultaneous release of MET III and SET II by the end of 2025.

Assuming that the NSF proposal to renew CBMS' central administrative role in the NSF-CBMS Regional Research Conferences program is funded, in the fall I will begin to work with the Advisory Board I have formed to suggest potential conference topics, lecturers, and sites. In particular, I am excited about the possibility, outlined earlier in this report, of aligning some Regional Research Conferences with upcoming thematic programs at the Mathematical Sciences Research Institutes in the U.S. All of this work needs to begin in the fall if conference proposals are to be submitted to NSF by the customary late April deadline.

Likewise, with the expectation that we should hear soon that the 2025 CBMS Survey proposal has been funded by NSF, there will be ongoing responsibilities for Dayle Rebelein, the CBMS Administrative Assistant and me, as CBMS will be the fiscal agent for a CBMS Survey grant for the first time. I will continue to participate in regular monthly meetings of the Survey leadership group with RMC, the research firm we have engaged for the project. Also, as there will be increased work for Dayle, I have included in the FY 2025 budget a modest increase in her compensation, to be funded from indirect costs on the NSF award.

I also will plan to continue attending meetings of more CBMS member societies, in addition to those I have regularly attended throughout my career. Last fall I attended the NCTM Annual Meeting and spoke at the ASSM Annual Meeting, and I attended the Joint Mathematics Meetings in January.

CBMS, during the years I have been involved, has maintained a strong relationship with NSF, in particular the Division of Mathematical Sciences and the Directorate of STEM Education (formerly, Education and Human Resources). CBMS also has maintained regular contact with several boards at the National Academies. I want to see us develop stronger relationships with other Federal agencies that have (potential) relevance to the mathematical sciences, and it is a priority of mine to undertake the needed legwork. My first such foray resulted in the participation of two representatives from NOAA at the December Council meeting.