

**Conference Board of the Mathematical Sciences**  
**One Hundred and Twenty-sixth Meeting of the Council**  
**Friday, December 3, 2021**  
**Held at the AMS DC Office, 700 Pennsylvania Ave, SE**  
**Washington, DC**

- 8:00–9:00 Coffee and Tea will be available
- 9:00–9:15 **Introductions and Overview of Meeting**
- 9:15–10:00 **Business Meeting of the Council**
1. Update on search for CBMS Director – Joan Ferrini-Mundy
  2. Vote on admission of COMAP as member
  3. Secretary-Treasurer's Report – Charles Steinhorn
    - a. Approval of Minutes of the Meeting of May 7, 2021 (appendix A)
    - b. FY 2022 Operating Budget Income/Expense Report (appendix B)
    - c. Unrestricted Net Assets History (appendix C)
    - d. FY 2022 Dues Assessments (appendix D)
  4. Director's Report – David Bressoud (appendix E)
  5. Announcements  
USNC/MI update  
Report from AMATYC about their 2026 conference
- 10:00–10:15 Break
- 10:15–11:15 Discussion of CBMS DEI statement with vote, Appendix F — Tim Hendrix, Abbe Herzig, Dave Kung
- 11:15–11:45 Data Science presentation — Rachel Levy
- 11:45–12:45 Lunch
- 12:45–1:00 Update by Eric Friedlander on USNC/Math
- 1:00–2:00 Discussion of Data Science, Appendix G – Charlie Steinhorn
- 2:00–3:00 Discussion of School to Workforce – Shelly Jones
- 3:00–3:30 Break
- 3:30–4:30 Discussion of Pandemic Aftermath – Mike Steele
- 4:30–5:00 Discussion of next steps and issues
- 5:00–6:00 Reception

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## Appendix A

### **Minutes of the 125th Meeting of the Council of the Conference Board of the Mathematical Sciences Held via Zoom Friday, May 7, 2021**

The following were present for all or part of the meeting, held via Zoom.

Executive Committee: David Levermore, Chair; Diane Briars, Past-Chair; Charles Steinhorn, Secretary-Treasurer; Edray Goins, Member-at-Large; Michael Steele, Member-at-Large;

Council Members: Kathryn Kozak, AMATYC; Ruth Charney, AMS; Megan Burton, AMTE; Donna Lalonde, ASA; Charles Steinhorn, ASL; Joleigh Honey, ASSM; Darla Kremer, AWM; Shelly Jones, BBA; Jessica Utts, IMS; Jennifer Quinn, MAA; Omayra Ortega, NAM; Paul Gray, NCSM; Trena Wilkerson, NCTM; Cindy Lawrence, MoMath; Susanne Brenner, SIAM; Roy Goldman, SOA; Linda Fulmore, TODOS; Lorraine Howard, WME.

Additional society representatives: Anne Dudley, AMATYC; Catherine Roberts, AMS; Abbe Herzig, AMS; Rachel Levy, AMS; Shari Stockero, AMTE; Tim Hendrix, AMTE; Francis Su, MAA; Ron Wasserstein, ASA; Dewey Gottlieb, ASSM; Crystal Morton, BBA; Michael Pearson, MAA; Mona Toncheff, NCSM; Ken Krehbiel, NCTM; Kathleen Kavanagh, SIAM; Suzanne Weekes, SIA; Nora Ramirez, TODOS

Invited Guests: Kathryn Leverenz, Mathematics Institute of Wisconsin; Joan Ferrini-Mundy, U. of Maine; Uri Treisman, Dana Center; Dave Kung, Dana Center; Kirsten Bohl, MSRI; Kathie Bailey, NAS; Tyler Kloefkorn, NAS; Sol Friedberg, NAS; Mark Green, NAS; Juan Meza, NSF; Sandra Richardson, NSF; Ted Coe, NWEA;

Staff: David Bressoud, Javon Barnes

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

#### **I. Business Meeting**

Chair Dave Levermore welcomed those who were present and outlined the agenda.

- 1. Nominating Committee.** The nominees for open positions were Joan Ferrini-Mundy for Chair-Elect and Shelly Jones for member-at-large. Both were unanimously elected.
- 2. Approval of Minutes.** The minutes of the December 2020 CBMS Council meeting were approved unanimously.
- 3. Financial Report and Budget.** Charlie Steinhorn presented the half-year financial report. The FY2022 budget was approved as presented.
- 4. Director's Report.** David Bressoud reported the meeting of society personnel responsible

for online meetings who discussed the pros and cons of various platforms. He summarized the information gathering sessions that were held with the member organizations in February and March. Four specific topics rose to the surface that will be pursued with online meetings of representatives of societies interested in more sharing of how different members are dealing with these issues. They are

- Responding at an organizational level to issues of Justice, Equity, Diversity, and Inclusion,
- Dealing with the effects of the COVID-19 shutdowns,
- Developing the school to workforce pipeline, and
- Establishing the role of Data Science in the mathematics curriculum.

He also provided updates on the CBMS Survey, which will now be distributed in Fall, 2021, the Regional Research Conferences, most of which have been further postponed to 2022, and the next CBMS Forum, which will be held May 1–3, 2022. He also mentioned society responses to public reaction to several state-wide high school initiatives and discussed the current budget situation, which is very good given the decreased costs from not holding in-person council meetings or other travel.

## **5. Announcements.**

Ray Levy who this year is working as an AMS Fellow in the office of Senator Hassan shared a draft bill for fostering mathematical and statistical modeling education.

## **II. Justice, Equity, Diversity, and Inclusion**

Francis Su introduced and explained the Report of the AMS Task Force on Racial Discrimination. This was followed by the introduction of a draft of a CBMS statement on these issues by its authors: Tim Hendrix, Abbe Herzig, and Dave Kung.

These were followed by break-out groups whose feedback was collected on slides at [https://docs.google.com/presentation/d/1hmfntiVlcMIthcXxn3WUtPEXxVAkmA5K0dc25FUCz6Q/edit#slide=id.gd77ab53ed4\\_0\\_2](https://docs.google.com/presentation/d/1hmfntiVlcMIthcXxn3WUtPEXxVAkmA5K0dc25FUCz6Q/edit#slide=id.gd77ab53ed4_0_2)

## **III. Report on SEA CHANGE for math sciences departments**

Abbe Herzig described the current state of work to develop a set of criteria, in line with the AAAS SEA CHANGE initiative, to recognize and encourage departmental work to increase equity.

## **IV. Discussion of topics for subsets of member organizations to share information and concerns about topics of interest.**

This focused on how we wanted to approach continued discussion of the bulleted items in section II.

## Appendix B

FY 2020 Actual and FY 2021 Budget Shown for Comparison

<b>Income</b>				
	<b>FY 2020 Actual</b>	<b>FY 2021 Budget</b>	<b>FY 2021 Actual</b>	<b>FY 2022 Budget</b>
Dues	\$68,200	\$65,000	\$60,782	\$65,000
Interest	\$106	\$100	\$15	\$100
Royalties	\$1,073	\$1,000	\$95	\$1,000
NSF Regional Research Conferences				
Salaries	\$30,500	\$30,000	\$15,356	\$30,000
Indirect Costs	\$3,886	\$6,000	\$1,943	\$6,000
Other				
<b>Total Income</b>	<b>\$103,765</b>	<b>\$102,100</b>	<b>\$78,191</b>	<b>\$102,100</b>
<b>Expense</b>				
	<b>FY 2020 Actual</b>	<b>FY 2021 Budget</b>	<b>FY 2021 Actual</b>	<b>FY 2022 Budget</b>
Compensation				
Director	\$45,000	\$45,000	\$45,000	\$45,000
Administrative Coordinator	\$7,029	\$16,500	\$12,866	\$16,500
Postage and Shipping	\$253	\$200	\$32	\$200
Supplies	\$546	\$3,000	\$250	\$3,000
Internet	\$1,000	\$1,200	\$1,282	\$1,200
QuickBooks license	\$755	\$800	\$755	\$800
Website	\$55	\$300	\$30	\$300
Council Meetings				
Travel	\$4,929	\$10,000	\$0	\$10,000
Food and Other Meeting Expenses	\$5,443	\$10,000	\$0	\$10,000
Staff Travel	\$100	\$7,000	\$455	\$7,000
Accounting Fees	\$1,525	\$3,500	\$3,625	\$3,500
Auditing Fees	\$7,500	\$2,500	\$0	\$2,500
Insurance	\$715	\$750	\$715	\$750
Unbudgeted Expenses				
Bank Service Charges	\$49		\$15	
Charitable contributions	\$1,000			
<b>Total Expense</b>	<b>\$75,899</b>	<b>\$100,750</b>	<b>\$65,025</b>	<b>\$100,750</b>
Operating Surplus or (Deficit)	\$27,866	\$1,350	\$13,167	\$1,350

### Notes

a - These are only paid every third year. This was in anticipation of auditing fees of approximately \$7500 in FY 2023.

## Appendix C

### Unrestricted Net Assets as of September 30, 2021

unrestricted cash on hand	\$101,947	<b>b</b>
accounts receivable		
dues	\$500	
other		
accounts payable	\$0	
Net	\$102,447	

### Investments

Vanguard Balance Sept 30, 2019	\$146,272
Vanguard Balance Mar 31, 2020	\$164,576
Vanguard Balance Sept 30, 2020	\$172,424
Vanguard Balance Mar 31, 2021	\$180,666
Vanguard Balance Sept 30, 2021	\$182,400
Total Unrestricted Net Assets	\$283,113

### Notes

**b** Cash on hand also includes \$24,634 restricted, held for 2022 Forum

## Appendix D

### Dues assessments for FY 2022

	Dues Rounded	Quarterly
AMATYC	\$900	\$225
AMS	\$7,800	\$1,950
AMTE	\$600	\$150
ASA	\$5,000	\$1,250
ASL	\$400	\$100
ASSM	\$400	\$100
AWM	\$800	\$200
BBA	\$400	\$100
COMAP	\$1,500	\$375
IMS	\$1,500	\$375
MAA	\$7,000	\$1,750
MoMath	\$4,000	\$1,000
NAM	\$500	\$125
NCSM	\$1,400	\$350
NCTM	\$10,300	\$2,575
SIAM	\$7,800	\$1,950
SOA	\$14,300	\$3,575
TODOS	\$500	\$125
WME	\$400	\$100
TOTAL	\$65,100	\$16,275



## Appendix E

### Directors' Report — David Bressoud

I am very sorry that I am unable to attend this, my final CBMS Council meeting as Director. My wife, Jan's, health is such that I cannot be away. I have appreciated all of the connections and friendships I have made over the years. I know I'm leaving CBMS in good hands, and I wish you all the best as you move forward.

### Reflections on the past five years

In January 2017, Kelly Chapman and I took over from Ron Rosier and Lisa Kolbe at the helm of the Conference Board of the Mathematical Sciences. Kelly has since moved on, earning her Master's in Education and now teaching in the Saint Paul Public School System, replaced by Javon Barnes. At the end of December, Javon and I will pass the leadership on to the next generation. It has been a wonderful learning experience and an opportunity to work with a host of very talented and dedicated people, including the executive directors and presidents of the professional societies in the mathematical societies, but also many others at the forefront of mathematics education at all levels from preK to graduate school and the workforce. This month's column is a look back on the events of the past five years.

At the start of my tenure, I published "[A vision for CBMS](#)" in the [June-July 2017 issue of the Notices](#). It laid out an ambitious agenda for addressing issues of transitions in mathematics education: high school to college, two-year to four-year college, undergraduate to workplace, undergraduate to graduate, and graduate to both academic and non-academic employment. The work would focus on two services: "Research to help us understand our present situation and the true difficulties that must be tackled ..." and "Resources and Support for departments that recognize a need for change ..."

I believe we have made some progress, but before I describe what has been accomplished, I need to chronicle the immediate issues that faced me as I took over. CBMS, run on a shoestring as it is, had lost the ability to manage its own grants from NSF in 2013. AMS had agreed to run these grants with CBMS as a subcontractor, but this was less than an ideal arrangement. One of my challenges was to restore CBMS as a potential recipient of NSF grants.

But then in February I received a serious shock. The grant request for funding the NSF/CBMS Regional Research Conferences, a proposal that Ron had submitted in his last months, was rejected. Running these conferences, which began in 1969, has provided a third of our annual budget. Fortunately, NSF agreed to a one-year extension of our current grant as I sought to gain permission for CBMS to manage its own grants while at the same time drafting a new proposal that would meet the NSF's requests to reshape these conferences so that they took advantage of the capabilities of the internet. CBMS oversaw nineteen NSF/CBMS Regional Research Conferences, run under the old arrangement, over the three summers 2017–2019. See <https://www.cbmsweb.org/regional-conferences/past-conferences/> for the descriptions.

The changes that were in the new proposal can be found in "[Fifty Years of CBMS Regional Conferences](#)", published in the January, 2019 *Notices*. At the same time, thanks to tremendous work by Kelly, we succeeded in re-establishing CBMS as an approved grant recipient. The entire process was exceedingly complex, and it took two full years before all the i's were dotted and the

t's crossed. The new requirements for the regional conferences were to go into effect with the summer 2020 conferences. All six of those conferences were held over to summer 2021, one of which was actually held in 2021. The remaining five are now scheduled for 2022, joined by the new awardees for 2022.

The other issue that needed immediate attention when I took over was to update the CBMS website ([cbmsweb.org](http://cbmsweb.org)). Again, it was Kelly who accomplished this.

One effect of the changes to the NSF/CBMS Regional Research Conferences was that the lecturers would no longer receive a \$5000 honorarium for producing a monograph based on their lectures. Instead, they would receive \$3000 for making available extensive online materials that would begin to approximate a full monograph. At the same time, they were encouraged to produce a monograph in the CBMS series with AMS, SIAM, or IMS/ASA for which they would receive royalties from whichever society published it. I alerted all lecturers who within the past five years had promised to submit a monograph and warned them that the offer of the \$5000 honorarium would expire at the end of 2019. This produced a flurry of work. A total of 21 monographs came in under the deadline and have since been published: twelve with AMS, eight with SIAM, and one with IMS/ASA. Because of the disruption due to COVID-19, there are no complete manuscripts that have been submitted under the new arrangements, but I know of two lecturers who are working on their monographs.

The other major effort in my first year was the [Research Advisory Group](#) that met at the MAA Carriage House on August 26, 2017. Co-sponsored with TPSE, it included representatives from nine of the member societies as well as the Charles A. Dana Center, the American Institute for Research, the U.S. Department of Education's National Center for Education Statistics, and the Sloan Foundation. The meeting identified three areas for work:

1. **Math in the workplace.** What problems are we trying to solve where data would be useful and we don't already know the answers? How can we educate employers about what the mathematical community believes it is contributing and why it is important? How can we put in place the mechanisms that allow us to work on a long timeline for the continuous improvement of the mathematical preparation of critical constituencies?
2. **Barriers and accelerators.** What are the goals for our students? How do we define success? How do we measure success? What trusted resources are available for recognizing barriers and accelerators? How can we make these resources more widely available?
3. **The role of the CBMS societies.** How can the CBMS societies best meet emerging problems? How do we strengthen the improvement infrastructure of our profession? What are the timely problems that we face that require activating this infrastructure? How do we surface them quickly enough? What are the information needs of the profession to support hypothesis generation and creative R&D work? How do we nurture and feed this improvement infrastructure? How do we support it? How do we review and improve it? How do we identify the problems and practices that are worthy of solution? What information and data structures do we need?

The full report of the meeting can be found at <https://www.cbmsweb.org/wp-content/uploads/2018/10/RAG-Report.pdf>. While there was no explicit follow-up to this meeting, these concerns have been reflected in the interest group meetings that were launched virtually in 2021.

In 2018 attention shifted to a Forum that would bring together state leadership teams of six to eight individuals representing state-level policy leaders in mathematics education for K-12, two-year college, and public university systems to work on issues of the transition from high school to college mathematics. Working with the Dana Center, we spent the spring and summer clarifying the intent and scope of the gathering, exploring funding options, and getting the word out through our member societies and other professional organizations. In fall 2018 we put out a call for applications to participate. Thirty-two states applied from which we chose twenty-three that we could accommodate.

The first Forum, [\*Preparing Students for the Future\*](#), was held in May 2019 with funding from Achieve, the Carnegie Corporation of New York, the Charles A. Dana Center, the National Science Foundation, Pearson, the Teagle Foundation, and Texas Instruments. It focused on three areas:

- **Responding to the changing role of mathematics in the economy.** The avalanche of data across all fields is spurring exciting and important work in mathematics. The transition years of grades 11–14 are critical for building the foundations for a workforce that can meet the evolving needs of the new economy.
- **Ensuring college readiness today and tomorrow.** High school and college mathematics educators are working collaboratively on this issue, recognizing the need for college-ready students, but also student-ready colleges. CBMS societies acknowledge the need for a broader understanding of how mathematics is and will be used, encompassing modeling, statistics, and data science. They also understand the need for active learning approaches that promote problem solving abilities and higher order thinking.
- **Articulating the mathematical pathways that will serve all students.** Changes in demographics, economic demands, and the mathematical sciences themselves are forcing reconsideration of the pathways into and through college-level mathematics. It is necessary to evaluate whether the course structures now in place still serve their intended purpose and to understand the alternatives that are available.

The state leadership teams were charged with returning home with a mission to form a larger state-based working group that over the following 18 months would identify their state’s most pressing problems around the transition from high school to college mathematics and begin to formulate policy recommendations. During this period, a team from the Dana Center maintained regular contact, fostering ties between state teams facing similar problems and monitoring their progress.

The intent was to bring these leadership teams back together in October 2020, which obviously was impossible because of the shutdown due to the pandemic. In its place, we ran a series of three online afternoon gatherings around the theme [\*Supporting State Efforts for Mathematics Alignment\*](#), with ample opportunities for sharing progress and issues faced, many of which now revolved around dealing with the pandemic.

It was originally envisioned that by the time of the second forum there would be sufficient momentum among the state teams that direct involvement by CBMS would no longer be needed. But because of the complications and delays created by the pandemic and the inability to physically come together, it was decided to continue this work to a third Forum, now scheduled for May 2022 when it is sincerely hoped it will be possible to hold such a large gathering of approximately 200 people.

The third Forum is entitled *Struggles, Surprises, Setbacks, and Successes: Lessons Learned to Help Us Move Forward*. It will include opportunities to share experiences from the past three years. We will be hearing from the Gates Foundation on their work on messaging to encourage public acceptance of reform efforts, especially around equity issues. There also will be examples of incorporation of data science into the mathematics curriculum across multiple grade levels and preparation of students for the workforce. Registration for this Forum will open in December.

In the spring of 2020 we had to scramble to convert the in-person Council meeting to an online gathering. By the time of the December meeting we had a much better idea of the benefits of connecting online. Recognizing that everyone was figuring out how to convert in-person meetings to virtual, we arranged for opportunities for both member societies and the mathematics institutes to share what had been tried and learned about offering virtual and hybrid meetings. A summary of the results is in Appendix D of the [Agenda for the May 2021 meeting](#). The full set of responses is at

<https://docs.google.com/document/d/1N5stw1CBgseO0ju5qQZyBEIYvZMNjqjGTwpytbcAtuo/edit?usp=sharing>

We also took advantage of Zoom to hold meetings with the leadership of each of our member societies to learn of their concerns and priorities. One common priority was the need to create a joint statement on social justice, equity, diversity, and inclusion. Tim Hendrix, Abbe Herzig, and Dave Kung created a preliminary version of such a statement for the May meeting.

Representatives of the CBMS societies have continued to meet to refine this document, which I hope to see approved at the CBMS meeting on December 3.

In addition, our member societies identified three issues for ongoing virtual discussion:

- Dealing with the effects of the COVID-19 shutdowns,
- Developing the school to workforce pipeline, and
- Establishing the role of Data Science in the mathematics curriculum.

Several virtual meetings have been held to discuss these issues. There will be reports at this December meeting with an opportunity to think about next steps.

Finally, I need to mention the CBMS quinquennial survey of departments in the mathematical sciences. Although these carry the CBMS label, my role has been merely advisory. Almost all of the work has been admirably handled by Ellen Kirkman, Rikki Blair, and Tom Barr. Tom runs the NSF grant that pays for this survey work, Rikki focuses on the two-year college portion of the survey, and Ellen is the lead. In the summer of 2020 we decided to postpone the survey that was scheduled for that fall, first because fall 2020 would be so atypical and second because we knew that chairs would be overwhelmed handling all of the changes and disruptions. Compliance would undoubtedly be very low. We decide to send out a very short survey to assess the effects of the pandemic.

The full report of the findings of the 2020 survey are at <http://www.ams.org/profession/data/cbms-survey/cbms2020>. A summary of the findings is in my *Launchings* article [CBMS survey of Responses to Covid](#). Information on the 2021 survey can be found in the November 2021 *Launchings*: [The 2021 CBMS Survey of Departments in the Mathematical Sciences](#).

Going forward, there is the immediate challenge of the third national Forum on the transition

from high school to college mathematics to be held this coming May. In addition, serious thought will need to be given to determining how this work can be carried forward. States have benefited enormously from the opportunities CBMS has provided to share their struggles, surprises, setbacks, and successes. There should be a permanent mechanism for continuing this work. At the same time, it is necessary to extend this resource to most if not all state systems. The work to date has been time and labor intensive, spearheaded by people such as Lindsay Fitzpatrick at the Dana Center. Continuing and expanding it will require intentionality and resources.

I am disappointed that the Research Advisory Group, envisioned as a means of identifying and facilitating the collection of data and information needed to improve mathematics education, has not gone further. Some of this is being done at the state level. It would be good to find means of coordinating it nationally.

And I am greatly encouraged by the example of the small, targeted virtual meetings that were held this past year around issues of importance to subsets of our members. CBMS Council meetings have always been wonderful opportunities for society representatives to gather, build connections, and share concerns. But two one-day meetings a year is not sufficient to actually accomplish very much. The virtual meetings hold out the promise of on-going dialog around issues of shared interest. I believe that they can contribute a great deal of value to our members.

I owe a tremendous debt to the many people with whom I have worked, especially the three CBMS Chairs during my tenure: Brit Kirwan who did so much to help me come up to speed; Diane Briars whose energy, contacts, and breadth of knowledge across the spectrum of issues in mathematics education have been essential in moving this organization forward; and Dave Levermore who provided the insights into how to take advantage of online meetings to broaden the ability of CBMS to meet the needs of our members. I owe a great debt to Uri Treisman and his team at the Dana Center. Uri is a fount of important, workable ideas for advancing mathematics education, and his team has been essential in bringing the CBMS Forums to fruition.

Through all of my five years, Charlie Steinhorn as Secretary-Treasurer has been a constant source of support and good ideas. I have also been supported by the many other people who have served on the Executive Committee, especially Joan Ferrini-Mundy, the current Chair-Elect, but also the members-at-large: Shelly Jones, Michael Steele, Edray Goins, Deanna Haunsperger, Christine Thomas, John Staley, and Kristin Lauter.

I leave this position with some regret. I have learned a lot, and the work has been very fulfilling.

## CBMS Statement on Equity, Diversity, and Inclusion in the Mathematical Sciences



### **Brief Abstract:**

*The Conference Board of the Mathematical Sciences (CBMS) promotes understanding and cooperation among national organizations in the mathematical and statistical sciences and their allied disciplines. As such, we envision a mathematical sciences professional community that values all colleagues and students and in which we work and learn together with respect and dignity. We embrace a vision for this community that is equitable, diverse, and inclusive. We acknowledge our collective culpability in discrimination, bias, and other forms of injustice and we commit ourselves to action and accountability in service of our vision.*

## CBMS Statement on Equity, Diversity, and Inclusion in the Mathematical Sciences

### **Full Statement:**

The Conference Board of the Mathematical Sciences (CBMS) is an umbrella organization composed of professional societies and organizations from all areas of the mathematical and statistical sciences and allied disciplines. CBMS's stated purpose is to *"promote understanding and cooperation among these national organizations so that they work together and support each other in their efforts to promote research, improve education, and expand the uses of mathematics."* ([cbmsweb.org](http://cbmsweb.org))

**We envision a community of mathematical scientists where all of our colleagues and students are valued and in which we all work and learn together with respect and dignity.**

We envision a world in which all individuals have equitable opportunities to learn, use, and contribute to the mathematical sciences, as well as to shape the future of the disciplines. Our vision is a landscape that reflects the diversity of our society – across race, ethnicity, culture, gender, sexual orientation, disability status, and all other social identities – as learners, researchers, teachers, practitioners, leaders, and all other members of the professional community.

Making progress toward this vision is a matter of justice. Quantitative literacy is imperative to civic engagement, and includes the ability to model complicated situations, understand options, and make informed decisions. By appreciating, respecting, and honoring the diversity of people and voices in our professions, we are better able, as mathematical scientists, to utilize the tools of our fields to investigate, document, and communicate injustice and create pathways to many opportunities. All people must have equitable access to those opportunities.

Equitable education in the mathematical sciences enhances the learning experience of all students. Participating in a diverse classroom engages students with others who have perspectives, skills, and experiences that may be different from their own, which is vital to developing the problem-solving and critical thinking skills needed in our world. This rich type of educational experience also provides fertile ground for the development of a deeper appreciation and understanding of mathematics that will inspire and prepare students to be future users and creators of the powerful tools and concepts of our disciplines. This commitment includes the preparation of teachers at every level – elementary, secondary, undergraduate, and

graduate – whose education will have a profound impact on future generations of students.

Equitable opportunities and an inclusive environment increase the diversity of ideas within our disciplines, enriching what we create, know, and use. Mathematicians, statisticians, and those in related areas view and explore ideas and concepts from new perspectives, make connections never before realized, harness concepts and tools to address the problems of tomorrow, and advance knowledge in important ways. By broadening the diversity of those who participate, we increase the potential for richer understandings and further developments in the mathematical and statistical sciences.

The power, beauty, and opportunity inherent in engaging with mathematics is a distant goal for some; we envision a world in which individuals of all identities know and believe there is a place for them in the mathematical sciences, can see themselves in those spaces, and are key builders of its future.

### **We acknowledge our responsibility and culpability.**

Our community currently falls far short of this equitable vision for a complex assortment of reasons, both historical and ongoing. Some of CBMS's member organizations have actively participated in the exclusion of some groups – including people of different races, ethnicities, cultures, genders, sexual orientations, disabilities, and other social identities – and are currently grappling with those past actions. Some have participated in this injustice in more subtle ways through inequitable opportunities, including biased policies and processes for making awards and filling leadership positions; inadequate support for caregivers (especially for childcare); and otherwise tolerating or even enabling bias, disrespect, macro- and micro-aggressions, and inequity. In stark contrast, some of CBMS's member organizations were created specifically to support the mathematical scientists impacted by these injustices.

We collectively acknowledge the need to examine past and present practices to identify injustices, and to implement policies and practices that redress these injustices, support equitable educational and professional opportunities, and create an inclusive and welcoming profession.

We acknowledge that the systemic nature of racism, misogyny, and other forms of discrimination requires each of our organizations to make significant investments of time, energy, and other resources to identify and change problematic policies and procedures.

### **We commit to action and accountability.**



CBMS will create and employ policies and practices that model justice and equitable opportunities for all mathematical scientists. In turn, CBMS will support its member organizations in their work to create spaces that are just, equitable, diverse, and inclusive. Engaging in self-reflection and articulating our goals are essential first steps in making progress, but those steps must lead to action in order to be meaningful.

As a leader within the mathematical sciences communities, CBMS will make justice, equity, diversity, and inclusion fundamental to our mission of service, and commit ourselves to creating safe, humanizing, and fertile spaces for all mathematicians to flourish.

We will work together, as colleagues of different races, genders, and other social identities, to analyze and document practices and policies that disparately affect the access of some members of our community to participate fully in and benefit from the professional life of our member associations.

We pledge to collaborate across organizations, both within and beyond the mathematical sciences, to pursue policies and practices that lead to equity, diversity, and inclusion for all members of our community, and to commit resources to support those efforts.

To hold ourselves accountable, we will regularly share our progress with each other and the communities we represent. This will allow us to highlight and build on productive actions member organizations have taken and provide models for future progress.

As leaders in our disciplines, we recognize that this work is not a singular effort, but requires ongoing partnership as we iterate toward the just mathematical sciences community we envision. We pledge to continue to engage in dialogue with one another about systemic inequities and to collaborate on solutions.

Through this statement, we embrace our vision for an equitable, diverse, and inclusive professional community; acknowledge the mathematical sciences community's culpability in racism, sexism, and other forms of unjust policies and behavior; and commit ourselves to action and accountability in service of that vision.

## Appendix G

### Statement from Data Science Interest Group

The emerging field of Data Science will play a critical role in preparing students at all levels to thrive in the digital world and face the many challenges and opportunities they will encounter in it. It has been the subject of multiple recent publications and initiatives.

“Harnessing the Data Revolution” is one of the ten "Big Ideas" that the National Science Foundation identified in 2017 as areas for future investment at the frontiers of science and engineering. This initiative calls for “fundamental research in data science and engineering, the development of a cohesive, federated, national-scale approach to research data infrastructure, and the development of a 21st-century data-capable workforce.”

The potential reach of Data Science into almost every curricular discipline is reflected in a recommendation in the 2018 National Academies Consensus Study report, *Data Science for Undergraduates: Opportunities and Options*: “To prepare their graduates for this new data-driven era academic institutions should encourage the development of a basic understanding of data science in all undergraduates.” Many post-secondary institutions have already introduced courses and developed programs in Data Science, and it is certain that Data Science will soon make its way into the mathematical sciences curriculum in most grade levels.

In 2020 the National Academies published its *Roundtable on Data Science Postsecondary Education*. Established in 2016, the roundtable was charged with identifying the challenges of and highlighting best practices in postsecondary data science education centered on four themes: foundations of data science; data science across the postsecondary curriculum; data science across society; and ethics and data science. In the summer of 2016 the Park City Math Institute brought together 25 undergraduate faculty who drafted the document, *Curriculum Guidelines for Undergraduate Programs in Data Science*. The importance of Data Science in Pre-K-12 education is explicit in the ASA’s 2020 document, *Pre-K–12 Guidelines for Assessment and Instruction in Statistics Education II (GAISE II): A Framework for Statistics and Data Science Education*. The significant role that two-year colleges will play in Data Science education was explored in the May 2018 *Two-Year College Data Science Summit*, hosted by ASA and funded by NSF; the report is available on the ASA website. Among other initiatives, the MAA plans to launch a new journal on Data Science in undergraduate mathematics, the Dana Center’s Launch Years project includes a Data Science course framework, and program accreditation and (micro-) credentialing efforts are underway. Our interest group also learned of several other Data Science initiatives, whose principals we should include in CBMS activities.

Our group recognized that there is a tremendous opportunity for all CBMS organizations to work together on Data Science, as it impacts preK-12 right through workforce considerations. Data Science will have an enormous impact on what and how we will teach, at all levels, from preK-12 through undergraduate and graduate education, even in core mathematics. Coherence, in terms of curricula, alignment (preK-12 to post-secondary, 2 to 4 year institutions, state to regional to national), transferability, and portability all need to be in our sights. Data Science importantly intersects with several of CBMS’ most important priorities. What should Data Science look like in the Pathways, and should it be a topic in the May 2022 CBMS Forum? As Data Science grows, Diversity, Equity, and Inclusion need to be front and center; the current, scattered picture we see could build in unequal access and opportunity for students of color. Data Science will take on an ever greater role in twenty-first century jobs and careers, and students---at all levels---must be prepared for these.

We strongly agreed that mathematicians, statisticians, and mathematical sciences educators need to be involved now to ensure that we are working together, and that we need to “galvanize our communities to let them know what is at stake”. All of these considerations suggest that CBMS should engage in activities and/or convenings centered around Data Science, and should begin planning efforts now so that we can move ahead nimbly. In particular, what can CBMS do to bring greater engagement in and coherence to the *mathematical and statistical* components of data science through every level of the curriculum and in workforce professional development as well? The questions to be considered by the Council are what form(s) these activities or convenings might take, and which voices beyond CBMS need to be involved if our efforts are going to be most impactful.