

**Program/Project Annual Report**  
**Mathematics and Science Teacher Initiative (MSTI)**  
**July 1, 2022 – June 30, 2023**

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**Purpose of Program/Project**

The Mathematics and Science Teacher Initiative (MSTI) is a systemwide effort overseen by the CSU Department of Educator and Leadership Programs to support campus plans designed to address the state's shortage of fully-credentialed middle- and high-school-level mathematics, science, and computer science teachers, as well as to strengthen and diversify the STEM teacher pipeline. CSU campuses apply for funding annually through a grant process announced to campus presidents and deans of schools/colleges of education, science and mathematics, and engineering. Fresno State's MSTI program has been recognized for its innovation and leadership throughout much of its 17-year history. (We were honored that the former CSU Director of Teacher Education wrote in 2018 that "we tell everyone that it is the best of any campus!") For a number of years, Fresno State's MSTI director was invited by the Chancellor's Office to provide presentations about our innovative programs at the California STEAM Symposium and was also asked to co-lead the 2019 systemwide MSTI symposium in Long Beach with the current CSU Director of Teacher Education (agenda: [https://bit.ly/MSTI\\_Convening2019](https://bit.ly/MSTI_Convening2019)).

This **annual report** provides a brief recap of some of MSTI-Fresno State's activities during 2022-23. Please visit <https://bit.ly/STEM-Updates> for **monthly summaries of MSTI's spring/summer 2023 activities**, and visit the **MSTI-Fresno State website** for an overview of some of MSTI's opportunities for prospective (and current) mathematics and science teachers: <https://kremen.fresnostate.edu/centers-projects/teachmathscience>

Since its launch at Fresno State in 2006, MSTI has actively created and supported a wide variety of important and successful campuswide, regional, and statewide initiatives to enhance **PreK-12 mathematics and science teacher preparation**, both at the undergraduate and post-baccalaureate levels. MSTI has also been an **important partner in grants, activities, and organizations promoting mathematics and science teacher recruitment, preparation, and professional learning** (which aids teacher retention), as well as STEM education in general. Some of these include the San Joaquin Valley Mathematics Project; Robert Noyce Teacher Scholarship program; the Mathematics Integrated Teacher Education Program (ITEP); Liberal Studies STEM Concentration; Community-Based Learning afterschool STEM programs and Youth Tech Academy; Summer Math Academy; EduCorps; Mathematics Teacher Education Partnership (state and national); MATHCOUNTS; and CASE, CMC, CUE, NCTM, and NSTA professional organizations (student memberships, conference travel, guest speakers), among others.

**Administrative Housing of Program/Project**

California State University, Fresno is the fiscal agent for MSTI. While the project is inter-departmental in its implementation, with many faculty and staff involved in MSTI-supported initiatives, the project offices and related rooms are located in the Kremen

School of Education and Human Development, primarily because this is where the director is a faculty member; MSTI's executive assistant, NeFesha Yisra'el, is also housed in the Kremen School. (See section below on space/equipment.)

Dr. Carol Fry Bohlin has served as MSTI's Director and Principal Investigator at Fresno State since the project's inception in 2006. She is the Chair of the Department of Curriculum and Instruction within the Kremen School (2019-2023) and coordinator of the M.A. in Education-Curriculum and Instruction option program. A professor of mathematics education, Dr. Bohlin also serves as Director/PI of the San Joaquin Valley Mathematics Project, which has allowed for productive and important synergistic partnerships between the two projects. (Dr. Bohlin's contract buy-out for MSTI project leadership is 3 WTU for fall and spring semesters; she receives the equivalent of 3 WTU at backfill rate for her summer MSTI work.)

Dr. Bohlin administers MSTI and Teacher Recruitment Project (TRP) funds and has established valued working relationships over the years with faculty, staff, and administrators throughout the Fresno State campus and in regional districts involved in STEM teacher preparation. With approval and support of the Chancellor's Office over the years, Dr. Bohlin has leveraged MSTI funds for important regional and statewide efforts to complement the multifaceted efforts on our campus. For example, when Dr. Bohlin served as Special Assistant to the Provost for STEM Initiatives in 2012-2014 (3 WTU of assigned time each semester), MSTI supported the creation and implementation of the **Central California STEM Collaborative** (and later the **Central Valley STEM Network**), as well as the development of Fresno State's comprehensive **STEM education website** (portions of which can be seen on slides 10 and 11 in <https://bit.ly/SLE-Sept2018>). MSTI also supported the creation and statewide dissemination of the **Liberal Studies STEM Concentration** (Drs. Bohlin, Brady, and Nelson gave over 20 conference presentations), as well as the establishment of the **California Association of Mathematics Teacher Educators (CAMTE)**; Dr. Bohlin served as Founding President), along with CAMTE's original website and listserv. Dr. Bohlin also created and maintains the **CSU Mathematics Education (CSUME)** listserv and database of all CSU mathematics educators. Future and current STEM educators are informed of **COMET (California Online Mathematics Education Times)** in case they would like to subscribe to this newsletter. (Dr. Bohlin will resume publication when her term as chair concludes.) *All of these efforts were undertaken from a passion to connect, inform, and empower CSU STEM educators.*

### **MSTI Activities During 2022-2023**

Below are brief descriptions of MSTI's activities during 2022-23, the first year that a number of important MSTI efforts such as the paid Early Field Experience weren't negatively impacted by COVID-19.

#### **• Free Live, Online CSET Mathematics and Science Workshops and Courses; Reimbursement of CSET and CTC Fees**

During 2022-2023, MSTI continued to implement the bold plan that was initiated in 2015 to serve any teacher in California who wants to review the subject matter content tested on the Single Subject CSET subtests for mathematics and science or simply strengthen their content knowledge. MSTI partners with StudentNest.com (provides platform and technical support) to offer **free, interactive, online test reviews for all math and science CSET subtests**. Sessions

are taught by talented Fresno State mathematics professors and highly experienced science educators with graduate degrees who are committed to providing excellent instruction and mentorship both during the sessions and via email between sessions. The Virtual Classroom platform that was introduced two years ago allows the instructors to more easily see a series of student comments, to which the instructor responds almost immediately. Dr. Fry Bohlin coordinates program promotion and NeFesha coordinates registration. The lead mathematics instructor (Dr. Stefaan Delcroix) and science workshop coordinator (Dr. Brad Huff) send all registrants the links to the classrooms and to the archived video, which is available soon after each class has concluded.

All of the instructors also email their presentation files and notes to participants prior to each session. A number of participants email the instructors with questions regarding teaching or credential attainment, which are quickly answered by instructors or Dr. Bohlin. Participants are extremely pleased with (a) the online convenience, scheduling, and communication received from MSTI and the instructors, (b) instructor knowledge and teaching skill, (c) ease of use of the online interface, (d) effectiveness of the courses/workshops/resources in preparing them for success on the CSET mathematics and science tests, and (e) the online support community that has been developing among workshop participants. A collection of unsolicited messages of thanks received this year is available for review if desired. (Last year's annual report contains a dozen such examples of notes of appreciation.)

We have also been highly gratified by the praise and words of appreciation we have received from many MSTI site directors from sister CSU campuses, as well as from the stateside director of MSTI at the Chancellor's Office, Dr. Fred Uy, for our CSET workshop series. Being able to support teachers to achieve their dreams and also help ameliorate the mathematics and science teacher shortage is a great privilege.

Throughout the 2022-23 fiscal year, MSTI offered **32 interactive workshops/courses (84 individual classes)** related to the content contained in CSET Subtests I-III in Mathematics and Subtests I-II in each of the 5 tested science areas. A number of workshop participants register for multiple workshops, trying to either strengthen their knowledge in one area of math or science or pass more than one CSET. In addition to supporting Fresno State credential students, the workshops drew participants from the majority of CSU and UC campuses, as well as a number of private IHEs over the past two years.

For details on MSTI's offerings (CSET workshops, etc.), please visit the following **website**: <http://bit.ly/MSTI-Fresno> (section: CSET Workshops/Forms; sample: <https://bit.ly/MSTI-CSET2022-23>).

#### • **Mathematics Teaching Scholars**

During 2022-23, a robust 33 mathematics teaching credentials were issued! Part of Fresno State's great success in mathematics credential production is the draw of the MSTI-funded Mathematics Teaching Scholars (MTS) program, as well as the Integrated Mathematics Education Program (ITEP), which allows students to concurrently earn a B.S. in Mathematics plus a Single Subject Mathematics teaching credential. As we were conceptualizing and writing the ITEP proposal in 2016, we discussed expanding MSTI's new MTS program and including it in the proposal as an

incentive to entice and support strong applicants, all of whom would be expected to participate in the ITEP. MSTI remains the primary guaranteed financial sponsor for the MTS program, a 2-year competitive program for freshmen and community college transfer students who are selected annually by Drs. Rajee Amarasinghe, Carol Fry Bohlin, and Yao Lu. The program is rich with a variety of supports to encourage retention and success. It offers a professional community for prospective mathematics teachers and aims to support up to 20 new scholars each year (13 new scholars were selected for Cohort 6 – Fall 2023 admission). Scholars receive **\$1000/year for two years, plus professional organization membership and reimbursement of conference fees**. MSTI pays for Instructional Teaching Assistants (ITAs) for summer precalculus and calculus courses to help support student success and provide teaching experience for math majors.

#### • **Science Teaching Scholars Program**

Because the MTS program has been so successful in attracting, supporting, and retaining prospective mathematics teaching credential students, Dr. Bohlin initiated conversations with the coordinator of the Natural Science program, Dr. Ali Hansen, regarding expanding and implementing the Science Teaching Scholars program and patterning it after the MTS. Following information sessions and other recruitment efforts, 16 out of 21 applicants were selected by the Natural Science Leadership Team to be members of the inaugural cohort of STS. The Scholars will begin the program this fall, earning a **\$1000 scholarship from MSTI for each of two years**. Dr. Hansen has identified a number of possible causes for the recent decline in the number of science credential students (e.g., significant competition with agriculture for credential students, tightening of the science credential internship policy, schools hiring CTE (Career Technical Education) teachers to cover science courses, an insufficient number of science education faculty, and lower numbers of science credential students nationwide). She hopes the STS and increased recruitment activities will help attract more students to teaching science. Dr. Hansen has already lined up a series of seminar speakers for this fall.

#### • **Building Early Identity as a Math or Science Educator**

– To give preservice teachers an early connection to the education profession and experienced teaching professionals, as well as to help build their identity as confident and knowledgeable STEM educators, **MSTI offers free professional organization membership and conference attendance**. A comprehensive membership application form for CASE (California Associate of Science Educators), CMC (California Mathematics Council), NCTM (National Council of Teachers of Mathematics), and NSTA (National Science Teachers Association) was developed and promoted at all MSTI events and to math/science methods instructors: <https://bit.ly/MathScienceOrgMemberships> Professional Memberships in these organizations are processed monthly.

– MSTI has historically provided up to \$400 in **STEM Professional Development** (typically conference travel) reimbursements per academic year to any Liberal Studies major or Multiple/Single Subject teaching credential student who wishes to take advantage of the opportunity. Students were excited to attend the CMC conference in Pacific Grove in December, but F2F conference attendance numbers were much lower than in pre-pandemic years, another likely long-term impact of COVID-19. We hope to rebuild the number of students who attend professional conferences (particularly CASE, CMC, and the STEAM Symposium) during 2023-24.

– MSTI supported the room and board for three chemistry majors to attend the **Modeling Chemistry Institute** in July 2023 at Cal Poly SLO.

– **Evening with NCTM President Kevin Dykema** – On March 10, 2023, MSTI and the San Joaquin Valley Mathematics Project (SJVMP) provided preservice teachers with an exciting opportunity to participate in a presentation by the President of the National Council of Teachers of Mathematics, Kevin Dykema, in the Ruiz Ballroom. His topic was “From Productive Struggle to a Slice of Pi”; **nearly 100 preservice teachers attended and received several different types of manipulatives and membership in NCTM** along with pizza and pie for this hands-on presentation. (MSTI paid for the room and technology rental, tablecloths, pies, supplies, and advertisement.)

#### • **Cost Share for NSF Grant**

The National Science Foundation’s Noyce Track 3 program is designed to financially support STEM teacher leadership development (and retention of talented teachers). Drs. Amarasinghe (PI), Bohlin (Co-PI), and Lu (Co-PI) worked to revise, update, and strengthen the original proposal that had received positive reviews but wasn’t funded during 2021-22. The resubmitted proposal, **Mathematics Master Teacher Leadership program (M<sup>2</sup>TL)**, was **funded for \$1.42 million in May 2023**. MSTI has committed \$4000 (\$2000/semester) as cost share for each of the nine students selected to enter the M.S. in Mathematics program in Fall 2023 (\$36,000) plus a \$7,500 stipend to Dr. Oscar Vega for his summer and fall work with students to support their success in this mathematically-challenging master’s program.

#### • **Mathematics and Science Materials for Future Teachers**

Because our credential students could not attend **mathematics methods classes** (CI 176) on campus during AY 2020-21, we received approval from the CO to purchase 200 sets of **math manipulatives** for students to use during Fall 2020 virtual instruction. For Spring 2021 classes, 100 sets were ordered for the CI 176 classes. MSTI also provided the students in the classes of three of the **science methods** (CI 175) instructors **with energy kits** and a **children’s science book** for Spring 2021 classes. 125 sets of each were ordered. The materials were so popular and so appreciated by instructors and students that **the practice has continued** each semester since that time, including during 2022-23. Materials for Multiple and Single Subject (CI 161) math methods courses have been ordered for Fall 2023, and science methods instructors are currently deciding on desired supplies.

#### • **Encouraging and Supporting Students in Pursuing Middle School Math and Science Instruction**

In 2012, MSTI began providing stipends to prospective teachers for taking Don Williams’ Physics 168S (Physics Pedagogy and Outreach) and later (Spring 2016) for each course in the **Liberal Studies (LS) STEM Concentration** (<http://bit.ly/LSS-Concentration>) to help motivate future elementary teachers to enroll in these courses. In Spring 2016, MSTI began financially supporting students taking courses in the Liberal Studies (LS) **Math Concentration**. When the LS program phased out requiring the concentrations, fewer students elected to take a series of

math or science courses, and numbers dropped. A collaboration between the Multiple Subject (MS) coordinator, the MSTI director, and Fresno Unified's Teacher Residency program resulted in a pathway for Teacher Residents to earn either a Foundational-Level General Science credential or a Supplementary Authorization (SA) in Mathematics along with their Multiple Subject credential. Rather than the \$200/course stipends, **MSTI implemented a \$500 scholarship for Multiple Subject credential candidates** when they apply for a SA in math or science. MSTI also reimburses the cost of CSETs and the CTC application fee for students earning a FL General Science credential. A **promotional flier** was created to advertise the **various pathways to teach middle school math and science** and posted on the MSTI website: <https://bit.ly/MiddleSchoolScienceMath23>

- **K-12 and Community STEM Outreach**

MSTI-Fresno has supported the **Physics Outreach** course since 2012 and still provides the distinctive red Fresno State Physics Outreach polo shirts that are worn by all students (primarily Liberal Studies majors) when they “take the show on the road” and give physics demonstrations in K-12 classrooms, hospitals, and television stations. This gives prospective teachers outstanding experience in teaching science as well as promotes science (and science teaching) in K-12 and to the community.

In Fall 2024, MSTI will support Dr. Dermot Donnelly's new course, **CHEM 180T (Chemistry Outreach)**, with polo shirts, supplies, swag, lab coats, etc.

- **CSET and Credential Application Fee Reimbursements**

MSTI **reimburses the cost of the CSETs and CTC's credential application fee** for classroom teachers who apply through Pea Vang's office for their credential if they have participated in MSTI's CSET workshops. MSTI also reimburses Single Subject CSET mathematics and science fees for all Fresno State students. Pea (Credential Analyst) waives the \$25 **processing fee** for all mathematics and science credential applicants and bills MSTI at the end of the fiscal year to cover the cumulative fees. She also provides to the director a spreadsheet containing all credentials she has processed during the past fiscal year for examination and reporting purposes.

- **MATHCOUNTS**

MSTI and SJVMP co-sponsored the **MATHCOUNTS competition** on February 9, 2023 at the Fresno State Satellite Student Union. (MSTI provides breakfast and lunch.) This was an excellent opportunity to connect with, support, and plan with the mathematics TSAs (Teachers on Special Assignment) at the Fresno County Superintendent of Schools and with regional middle school mathematics teachers. Dr. Bohlin welcomed the middle school students and actively promoted mathematics teaching as a rewarding career choice (and attending Fresno State to earn their B.S. and credential).

- **Focus on Diversifying the STEM Teacher Workforce**

In Spring 2023, Dr. Bohlin and the CEO of Jewel of Justice (<https://jewelofjustice.com/>), Dr. Karen Crozier, initiated conversations regarding working together to encourage more Black

and indigenous students to teach math/science from an early age (at least middle school) and entering Fresno State with a plan to become a secondary math or science teacher. NeFesha and Drs. Bohlin, Crozier, and Chris Miller met regularly to discuss plans for the **George Washington Carver (GWC) STEM Precollegiate Academy: Black Excellence in Science and Technology (BEST)**, held on July 17-21, 2023, in Science II. They participated in recruitment and discussed ideas for MSTI and SJVMP support. MSTI ordered tri-fold display boards and Instax Mini cameras so that the students could visually document their experience during the week, with a community presentation on the final day which was inspiring. Middle school students from Madera Unified participated in the Academy, as did Black Fresno State STEM undergraduates in the campus's GWC: BEST Club. During the week, NeFesha provided inspiration, documentation instructions, and a composition regarding GWC; Dr. Bohlin talked individually with the students and also provided her business cards and a *Brain Facts* (Society for Neuroscience) book to all students, urging them to contact her for information regarding attending/financing college, becoming a teacher, etc. Connecting with MUSD Asst. Supt. Prince Marshall was valuable. Continuation of this important partnership will continue during 2023-24 (at least with SJVMP).

### • **Early Field Experience**

We reinstated our successful paid Early Field Experience (placing prospective math and science credential candidates in the classrooms of exemplary teachers) in Spring 2023, with Jaime Arvizu coordinating the effort. A weeks-long break slowed the hiring and math/science classroom placement process for the students, so approximately 20 students were hired and placed later in the semester than anticipated. Many of these students are ready to start going out to the schools again once they are placed early in the fall semester. We decided not to pay mileage due to the cost, but to help carry-forward spend-down this fall, this could be an option. The Recruitment Coordinator provided professional seminars for these students.

### • **Community-Based Learning Partnerships to Support the STEM Pipeline**

In some past years when MSTI had sufficient funds to do so, MSTI enjoyed a very active partnership with Community-Based Learning (CBL) in supporting STEM in Afterschool Programs, Youth Tech (or Aerospace) Academy, tutoring programs, and more. Many future K-12 math and science teachers honed their skills teaching in these programs. Following emergence from COVID-19, conversations resumed between the new director, Anahy Escalera, and Dr. Bohlin regarding future partnerships, especially serving students in West Fresno communities (whether bringing the students to campus as we did with Madera Unified during July 2023) or taking the programs to the community. Initial funds for supporting CBL events/activities (2023-24) have been encumbered and more with more to follow after discussion among CBL/MSTI partners.

### • **Mathematics Professional Learning Summer Opportunities**

MSTI and SJVMP cosponsored two 4-day workshops in June 2023: (a) An **Early Childhood Mathematics** workshop for TK-1 preservice and inservice teachers. (b) **Cognitively-Guided Instruction** workshop for grades K-4 teachers. (MSTI provided funding for meals, while SJVMP provided the salaries for the four talented instructors and coordinated advertising, room reservations, materials, and personnel.)

- **STEM Network Meetings**

During 2022-23, Dr. Bohlin represented MSTI-Fresno at monthly Zoom meetings of the **California STEM Network**, an important group of regional STEM education collaboratives sponsored by Children Now. She shared regional and state STEM news and information during these convenings. As mentioned earlier, she also represented the project at Dean Yerrick's monthly meetings.

- **Online Presence**

MSTI strives to educate, inform, support, and empower current and future STEM teachers as well as faculty through its events, co-sponsored activities, communications, and online presence. Dr. Bohlin actively tweeted (@STEM\_Fresno) about MSTI events for over a decade until the account was recently disabled due to a security error by Twitter that has not been rectified. Since **Instagram** is a popular communications platform for younger generations, it's important that MSTI have a future presence there, as well as keep the **MSTI website** (<https://kremen.fresnostate.edu/centers-projects/teachmathscience>) continually updated.

- **STEM Education Recruitment Coordinator**

After conversation in Fall 2022 with Dr. Fred Uy regarding a proposed 9-unit buy-out per semester (commencing in Spring 2023) for a STEM Education Recruitment Coordinator, Tina Nakashian, was hired for this position. Tina is a talented and experienced Temporary Faculty member in the Departments of (a) Mathematics and (b) Curriculum and Instruction who has earned the respect of all who know her.

On April 28, Tina and Dr. Bohlin spoke at the **Make a Difference: TEACH conference** in Visalia and made important connections with Victoria Rioux (COS Education Instructor) and Amanda Thomas (Career Counselor) regarding future opportunities to talk with new **COS** students via Zoom about supports for teaching mathematics and science (e.g., Mathematics and Science Teaching Scholars programs, etc.).

**Tina has also done the following:** visited BOND (<https://csm.fresnostate.edu/fye/>) classes, provided professional seminars for future and current Single Subject math and science credential candidates (including those in the EFE and Noyce Scholarship programs), talked with science faculty regarding giving presentations in their classes promoting mathematics and science teaching, planned to determine how best to connect with engineering students to provide information about teaching math/science as a possible career alternative, attended the MSTI-sponsored STS information session with Drs. Bohlin and Hansen, started a contacts database, connected with regional community colleges, prepared to talk with high school students in education pathways classes about supports for teaching math and science, and met with Jesse Farias in recruitment/ admissions; Jesse will help Tina connect with math/science incoming freshmen and transfer students.

On a related note, on April 19, 2023, **Hoover and Bullard High School CTE-Education students** spent the day at Fresno State, hosted by the Kremen School (Rohit); MSTI provided

post-it note pads (contain MSTI logo and URL). Dr. Bohlin promoted available financial and professional support for future math and science teachers. (Fresno Unified TSA Hector Lopez, Jr., stated with appreciation that MSTI paid for his CMC conference travel in 2017 :- )

- **SEEDS** – MSTI supported the registration and annual membership fees for Kremen School and College of Science and Mathematics faculty, as well as the KSOEHD and JCAST academic deans in attending the SEEDS of Change conference in Costa Rica on July 4-8 (<https://sefedasj.wildapricot.org/ww2023eng>) to experience and bring back innovative ideas to infuse environmental education and powerful social justice experiences into our teacher preparation programs.

- **CSU STEM Educators Summit 2023** (June 9, 8:30-4 p.m.) – The CSU Chancellor’s Office sponsored the first dual modality conference for the system’s STEM educators and MSTI Directors; it was quite successful! (**Agenda:** <https://bit.ly/CSU-STEM-Ed-Summit-June2023-Agenda>; **Attendees:** <https://bit.ly/CSU-STEM-Ed-Summit-June2023-Attendees>; **Group Photos:** <https://bit.ly/MSTI-STEM23GroupPhotos>) In attendance from Fresno State were Tina Nakashian and Drs. Rajee Amarasinghe, Carol Fry Bohlin, Ali Hansen, Fred Nelson, Beth Weinman, and Randy Yerrick.

## **Sources of Funding**

**MSTI** sites are eligible for state funding through the CSU Chancellor's Office. Each year, MSTI’s Director/PI, Dr. Carol Fry Bohlin, writes and submits a proposal (or two proposals, as in 2022-23) and annual report to the CSU Educator Preparation director, Dr. Fred Uy. The budget plan is required to include not only MSTI funds, but also the **Teacher Recruitment Project (TRP)** monies (\$75,000) that each campus receives. After the campus plan and budget are approved, the funds are administered by the PI with support from MSTI’s Executive Assistant (NeFesha Yisra’el) and the Kremen School dean’s office. The two grants funded for 2022-23 support were (a) **MSTI** and (b) **MSTI STEM Challenge**, both with the goal of supporting an increase in the number of mathematics and science teachers produced. Each grant proposal was funded in the amount of \$100,000.

MSTI has a **substantial carry-forward as a result of (a) the additional \$100,000 that was received in MSTI STEM Challenge funding each year between 2019 and 2023 and (b) the COVID-19 pandemic which put the brakes on most of MSTI’s money-intensive plans**, from student conference sponsorship to paid Early Field Experiences to Community-Based Learning partnerships and more. (The state even removed the expensive CSET test fees that MSTI historically reimbursed.) Prior to these two significant factors during 2019-2023, MSTI would easily spend all funds each year, and there was often concern not to overspend as we implemented all of our initiatives.

During 2022-23, we seemed to be out of danger of COVID-19 restrictions, so Dr. Bohlin implemented or reintroduced many fund-intensive initiatives along with the hiring of a new recruitment coordinator required in the MSTI RFP (Tina began work during Spring 2023). In addition, Dr. Bohlin maintained and expanded long-time initiatives and implemented new ideas.

These initiatives are turning the tide of reserve accumulation, which will be increasingly evident in 2023-24.

To reiterate, **there will be no more MSTI STEM Challenge grant opportunities, which means that we will not be receiving the additional \$100,000/year that built up our reserves during COVID**, funds that will be quite valuable over the next few years post-COVID. Between this fact and the implementation of all of MSTI's growing financial supports for students plus additional planned partnerships, the carry-forward funds will steadily (and perhaps precipitously) decline over the next three years. It's important that well-considered and appropriate use of the MSTI reserve funds be ensured during this time so that important and successful programs can be continued (or expanded) beyond the time following complete spend-down of the current MSTI reserve.

### **Space and Equipment Utilization**

MSTI-Fresno is supported by the Kremen School (office and storage space, technology support, financial operations advice, etc.) and the Department of Curriculum and Instruction (mailbox in Kremen Room 250, occasional printing/photocopying, scanning). During and following COVID, home office use has increased, but many institutes are returning to in-person. SJVMP and MSTI hard copy records, supplies, books, journals, and many mathematics and science instructional materials are located in ED 57 and ED 220D (also the office for Executive Assistant NeFesha Yisra'el). Fresno State classrooms in the Peters Business Building, conference rooms/classrooms/computer labs in the Kremen Education Building, and classrooms in Science II are being used for MSTI-sponsored events and meetings such as this summer's GWC Precollegiate STEM Academy. Soon ED 152 will provide a temporary (2 weeks) storage space for (as an example) 220 boxes of mathematics manipulatives and science materials ordered to support the instruction of future K-8 mathematics and science teachers.

### **Goals and Objectives 2023-2024**

*[Note: Whoever the MSTI director is for 2023-24 needs to ensure that all of the following commitments and partnerships are maintained during the coming year and remain in close communication via email, text, and phone with NeFesha Yisra'el (MSTI's executive asst.) and Dawn Moate (mathematics DAA). Additional activities and partnerships pertaining to the mission of MSTI are certainly welcome to be added. For more details, please visit the descriptions above in this report.]*

1. The MSTI Director will be responsible for the oversight of all current and new project-related activities, correspondence, budget-related matters, reports and proposals, website updates, monthly updates at regional and statewide meetings of STEM leaders, attendance at Chancellor's Office directors' meetings and other meetings related to MSTI, social media presence, staffing/hiring, and other matters related to the project.
2. In addition, the Project Director will maintain active communication via email, phone, texts, and in-person/online meetings with the Executive Assistant, STEM Education Recruitment Coordinator, and all personnel involved with each of the initiatives below to ensure

successful and uninterrupted implementation (and, when possible, expansion) of the following initiatives, partnerships, and activities (details above), among others:

- a. Online CSET workshops (annual agreement with StudentNest, consultant hiring, scheduling, advertising, updating website and flyer plus registration form, etc.)
- b. Mathematics Teaching Scholars (meetings, student stipends, etc.)
- c. Science Teaching Scholars (promotion, meetings, student stipends, etc.)
- d. Student memberships in CASE, CMC, NCTM, and NSTA (monitor/update application form and responses, submit to organizations)
- e. Student travel to professional conferences/institutes (promote, coordinate paperwork)
- f. Planning/advertising/hosting special events and guest speakers (e.g., NCTM President)
- g. Mathematics Master Teacher Leadership program (student and faculty stipends for cost-share)
- h. Mathematics and science materials for future teachers (poll math/science methods faculty regarding needs, order, distribute)
- i. Encourage and support preservice and classroom teachers in pursuing middle school math and science teaching authorization (promote widely, coordinate with Financial Aid to see who can accept stipends, supervise paperwork, update flyer, post on website)
- j. Physics Outreach (Physics 168S) and Chemistry Outreach (CHEM 180T) – Promote, monitor registration, provide supplies, etc.
- k. Reimbursements of CSET and CTC credential application fees
- l. MATHCOUNTS (co-sponsorship, address students)
- m. Conference presentations (TEACH, STEAM Symposium, CMC, etc.) and networking
- n. Expand partnerships with COS and other CC counselors, etc.
- o. Black Excellence in Science and Technology (BEST) partnership expansion and event planning/participation
- p. Paid Early Field Experience (partnership with ARC; monitor progress)
- q. Community-Based Learning partnership (event planning with West Fresno, etc.)
- r. Preservice math teacher support (student stipend: instructional assistant and various math event leadership roles)
- s. Mathematics and science summer professional learning opportunities for teachers
- t. Computer Science Supplementary Authorization (promote opportunities for teachers to earn)
- u. Support faculty curriculum development / course redesign work groups for credential and preprofessional courses (environmental justice, etc.).
- v. Support development of a regional STEM Learning Ecosystem, website, listserv, etc.

– Submitted by Dr. Carol Fry Bohlin ([carolb@csufresno.edu](mailto:carolb@csufresno.edu)), July 2023