District and School Partnerships

DISTRICTS
Altar Valley School District
Amphitheater School District
Catalina Foothills School District
Flowing Wells Unified School District
Marana Unified School District
Sahuarita Unified School District
Santa Cruz Valley Unified School District
Sunset Unified School District
Tanque Verde Unified School District
Tucson Unified School District
Vail School District

SCHOOLS
Nosotros Academy
International School of Tucson
Pima Community College West Campus
St. Gregory College Preparatory School

Individual & Foundation Partners
Kautz Family Foundation
The Foundations
Arthur & Lee Herbst
Deborah Hughes Hallett
Linda Lohse
Fred Stevenson

Mathematics Educator Appreciation Day
Conference Partners
Office of the Pima County School Superintendent

Mathematics Educator Appreciation Day
Conference Sponsors
Conceptua Math
CCS Presentation Systems
Houghton Mifflin Harcourt
Texas Instruments

Friends of the Center
Sue Adams
Cynthia Anhalt
Karin Bailey
Virginia Bohme
Faith Bridges
Linda Duhiggard
Lawrence & Margaret Dunlap
William Fairs
Garrie Fowl
Linda Fountain
Iva & Kathy Lackow
Linda Lohse
Bill McCallum
Mike & Donna McDonald
Ann Modica
Alan Newell
Cody Patterson
Kathryn Snodgrass
Thomas & Teresa Tollman

Thanks to each and every district, school, foundation, and individual who supports the Center for Recruitment & Retention and its programs. Together we can make a difference.

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visit us on the web at crr.math.arizona.edu

CENTER FOR RECRUITMENT & RETENTION OF MATHEMATICS TEACHERS

THE UNIVERSITY OF ARIZONA
COLLEGE OF SCIENCE
School of Mathematical Sciences

annual report 2013-2014

Many Perspectives, One Vision

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Many Perspectives, One Vision
The Center’s Mission

- Attract and prepare mathematically talented college students to become mathematics teachers
- Retain and support mathematics teachers currently in the classroom

Message from the Director

One of the best parts of my job as the director of the Center for Recruitment and Retention is that I have the opportunity to learn from a variety of people who are involved in education: teachers, administrators, university faculty, and many others. By working with people who have varying experiences and perspectives, I have the chance to learn about mathematics education from many different points of view. In many professions, such diversity of perspective might lead to tension or conflict. However, in education we are bound by a common vision: the goal of helping all students achieve their potential. Because we share this vision, we are able to use our differences to our advantage and learn from one another.

Recently, many schools have begun devoting time on a weekly basis to allowing teachers to work with one another to set common goals for student learning, develop common lessons and assessments, and share information about teaching practices that help students succeed. This is an exciting development because it creates collegiality and community for people whose day-to-day work can create a sense of professional isolation. It allows teachers to apply their diverse resources – ideas, strategies, experiences – to a common purpose.

We at the Center believe in the power of organizing diverse people and resources around a shared vision. The Center’s programs bring K-12 teachers, administrators, and university mathematicians and educators together to find ways to help students succeed in mathematics. We at the University share current research on mathematics education with teachers, while they share knowledge and strategies with us. Many teachers say that they have benefited from our workshops and conferences, but I can also say that I am a better educator, writer, and director because of the teachers who have worked with me.

None of this could happen without the help of the local schools and districts that partner with us and help guide our efforts. Nor could it happen without the many generous individuals who support the Center’s work. We are indebted to all of those who share our vision of a great mathematics teacher for every child and have worked to help us make that vision come alive. Together, we can make a difference.

Dr. Cody Patterson, Director
The Center's Programs

- **Induction Program**
  Provides support and coaching for first- and second-year mathematics teachers

- **Tutoring in the Schools**
  Recruits UA undergraduates to assist teachers in local K-12 classrooms

- **Teacher Workshops**
  Deepen teachers’ understanding of mathematics, promote student-centered learning, build a professional community of educators from local school districts

- **Mathematics Educator Appreciation Day (MEAD) Conference**
  Celebrates the achievements of teachers of all levels from all over Arizona and provides an opportunity for local teachers to share their excellent lessons and strategies, thereby nurturing leadership

- **Southern Arizona Inducting New Teachers (SAINT)**
  Recruits college graduates and mid-career professionals to teach in high-need schools

- **Advanced Placement Calculus and Statistics Exams Preparation Workshops**
  Prepare local students to take the national College Board exams

- **CRR Listserv**
  Keeps local teachers apprised of professional development and enrichment opportunities

### Highlights of the 2012-2013 School Year

- The Center continued the Herbst Enrichment Mathematics Seminars. These popular seminars filled to capacity within days of being advertised.
- The Center’s annual Mathematics Educator Appreciation Day (MEAD) Conference attracted more than 400 teachers from all over Arizona.
- The Center maintained partnerships with Altar Valley, Amphitheater, Catalina Foothills, Flowing Wells, Marana, Sahuarita, Santa Cruz Valley, Sunnyside, Tanque Verde, Tucson, and Vail School Districts, Pima Community College, Nosotros Academy, and St. Gregory (now called The Gregory School).
- Workshops were expanded to include opportunities for elementary grade level teachers.
- The workshop schedule was broadened to include Saturday sessions as well as weekday evening sessions.
- Participation increased in the AP Calculus Practice Exam Workshop for teachers and students.
- An AP Statistics Practice Exam Workshop was offered for the first time for teachers and students.

### Induction Program

This program provides much-needed support to first- and second-year mathematics teachers to encourage them to remain in the teaching profession. Participating teachers are paired with experienced coaches who provide ongoing observation and feedback. In addition, teachers attend monthly Saturday workshops that provide a forum to:

- deepen mathematical knowledge
- model student-centered learning
- develop effective instructional practices
- share ideas, materials, and concerns
- promote collegiality and collaboration among teachers

"I really liked that you showed us technology that will be useful in our classroom."
— High school teacher

"The slate strategies were interesting and I look forward to being more creative with slates."
— Middle school teacher

"I learned teaching radians can be fun for kids."
— High school teacher

"Loved DESMOS! It will be so helpful in demonstrating transformations & graphs."
— High school teacher
Tutoring in the Schools Program

Thirty-nine UA students participated during the fall and spring semesters, spending a total of 1509 hours in local classrooms working with students.

The goal of this program is to attract talented students into mathematics education. University of Arizona students take a course on effective mathematics tutoring skills and are placed in classrooms alongside dynamic teachers. Tutors assist teachers during mathematics classes by working with students and facilitating activities. Upon completion of the course, tutors who receive excellent evaluations are given the opportunity to be included on the Center's private tutor list. This list is made available to UA students seeking tutoring in mathematics as well as to Tucson-area parents and teachers. Elementary, middle, high school, and college students have taken advantage of this tutoring.

Southern Arizona Inducting New Teachers (SAINT)

With generous support from the U.S. Department of Education under the Transition to Teaching Program, the Center and Teach Arizona Master of Education Program are recruiting fifty college graduates and mid-career professionals with background in mathematics to teach in high-needs schools in Tucson. Program participants receive $5,000 in tuition assistance to complete the Teach Arizona program and agree to teach for at least three years while participating in the Induction Program, Teacher Workshops, and receiving individualized coaching from an experienced teacher mentor.

“It’s good to see the effort to attract ‘smart’ students into the teaching profession.”

— Flagstaff high school teacher
Teacher Workshops

Teacher workshops are hosted at the Center after school on weekdays and on Saturdays. They support educators in their quest to provide quality mathematics instruction to elementary, middle, and high school teachers. Workshops are designed to enrich teachers’ mathematical understanding, promote hands-on, student-centered lessons, and help teachers expand their understanding of the Arizona College and Career Ready Standards for Mathematics. At a typical workshop, teachers work on challenging mathematical tasks while facilitators model best instructional practices, provide feedback, and lead the discussion on how problems and activities can be adapted for classroom use.

“Teacher workshops are hosted at the Center after school on weekdays and on Saturdays. They support educators in their quest to provide quality mathematics instruction to elementary, middle, and high school teachers. Workshops are designed to enrich teachers’ mathematical understanding, promote hands-on, student-centered lessons, and help teachers expand their understanding of the Arizona College and Career Ready Standards for Mathematics. At a typical workshop, teachers work on challenging mathematical tasks while facilitators model best instructional practices, provide feedback, and lead the discussion on how problems and activities can be adapted for classroom use.”

“I really liked the student self-assessment for each unit & plan to use it for my next unit.” — Middle school teacher

“Collaborating with other teachers in the same grade level & topic was useful.” — High school teacher

“Hands-on activities helped me to better own my learning, so that I can better implement in my classroom. Thank you for sharing so many ready to go resources. I can begin implementing right away.” — Elementary school teacher

Herbst Enrichment Mathematics Seminars

With generous support from Lee and Arthur Herbst, the Center annually offers three Saturday workshops in which local master teachers share their expertise on mathematics content and pedagogy with colleagues. Herbst Seminars focus on connecting content to practice and providing teachers with concrete tools and techniques to use in the classroom. Participants receive a continental breakfast, a stipend, and continuing education hours for their participation.

“I really liked the student self-assessment for each unit & plan to use it for my next unit.” — Middle school teacher

“Collaborating with other teachers in the same grade level & topic was useful.” — High school teacher

“Hands-on activities helped me to better own my learning, so that I can better implement in my classroom. Thank you for sharing so many ready to go resources. I can begin implementing right away.” — Elementary school teacher

“I have been having a hard time feeling comfortable using number lines. This helped.” — Elementary school teacher
MEAD Conference ◆◆◆
Mathematics Educator Appreciation Day

The MEAD Conference is an annual event held in January for local K-12 and community college teachers. It is the largest mathematics educator conference in the state of Arizona.

The 2014 MEAD Conference featured keynote speaker Dr. Arthur Benjamin, a mathematics professor at Harvey Mudd College. Professor Benjamin is recognized nationally for his entertaining, dynamic presentations, such as his TED talk A performance of "Mathemagic."

Sixty conference sessions were offered by master teachers, consultants, and higher education faculty. Attendees and presenters included intermediate, middle, and high school teachers, Pima Community College faculty, and University of Arizona professors, postdocs, and graduate students.

“This was my first time attending so I didn’t know what to expect. I actually learned at this conference!”
— Elementary school teacher

“I had so much fun & can start some of these things on Monday!”
— Middle school teacher

“This is my tenth conference and I’m still learning lots!”
— High school teacher

Goals for 2014-2015

- Expand recruitment efforts to encourage professionals from STEM industries to join the teaching profession
- Broaden the target audience for our content workshops to include K-3 teachers
- Increase workshop participation by including more Saturday opportunities

CRR ◆◆◆
Income & Expenditures

- Income - $200,265
  - U.S. Department of Education - 29%
  - School & District Partnerships - 40.5%
  - Donations - 28.5%
  - Fees - 1.9%

- Expenditures - $166,709
  - Program Services - 90.1%
  - Supporting Services - 9.9%

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