

UCSMP Newsletter

No. 23, Spring, 1997-98

Summer 1998 Secondary Inservices to include New Workshops

This year, for the first time, UCSMP's Secondary Inservice Workshops (August 10-11 on the University of Chicago campus) will include full-day workshops for experienced UCSMP users.

A decision to include workshops for experienced users in UCSMP's summer Secondary Inservices was made in response to numerous requests from UCSMP users who had found our workshops to be of great value, but were looking for more extensive and in-depth discussion about teaching with UCSMP's secondary materials. As a result, two workshops will be offered for each text. One is designed for experienced users, those individuals who have taught from UCSMP materials for more than two years or have attended UCSMP secondary conferences in the past. The other workshop is for new users, those individuals who have taught from UCSMP materials for two years or less or who have never attended a UCSMP secondary conference. Participants have the option of signing up for either workshop when they pre-register for the conference. As in the past, all workshops are limited to those individuals teaching or supervising the teaching of UCSMP secondary courses in 1998-99.

The conference's opening address by UCSMP's director, Zalman Usiskin, will be much broader in nature than in prior years (when it was directed specifically at new users), incorporating issues related to teaching with UCSMP materials. This address will be followed by text-specific discussions led by UCSMP authors and veteran teachers, who provide detailed information about teaching from the text, moderate discussions, and answer questions. On Monday, August 10, participants can register for any one of the following full-day workshops:

Transition Mathematics New Users
Transition Mathematics Experienced Users
Geometry New Users

Geometry Experienced Users
Functions, Statistics, & Trigonometry New Users
Functions, Statistics, & Trigonometry Experienced Users

On Tuesday, August 11, participants can choose from one of the following full-day workshops:

Algebra New Users
Algebra Experienced Users
Advanced Algebra New Users
Advanced Algebra Experienced Users
Precalculus & Discrete Mathematics New Users
Precalculus & Discrete Mathematics Experienced Users

The change in this year's Secondary Inservice Workshops has enabled each of the sessions to be more attuned to the needs of new as well as of more experienced UCSMP users. New users' sessions, for example, will include more detailed discussion about working with manipulatives for *Transition*

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CONFERENCE REPORTS/UPDATES

Unique Opportunity Not to be Missed: UCSMP's Fourth International Conference on Mathematics Education

August 5-7, 1998 on the University of Chicago campus

The momentum for UCSMP's Fourth International Conference on Mathematics Education is building! As this newsletter goes to print, the program for the conference features lectures and panel discussions by fourteen speakers from outside the United States and approximately two dozen speakers from the United States, about half of whom are from State Systemic Initiatives, Urban Systemic Initiatives, or the NSF Curriculum Development Projects.

The conference will open on Wednesday, August 5 with registration beginning at 1:00 p.m. As part of the opening schedule, there will be an optional walking tour of the University of Chicago campus for all interested conference participants. The opening plenary session of the conference will take place at 3:00 p.m. with welcoming remarks by Conference Chairman, Izaak Wirszup; Conference Director, Zalman Usiskin; and University of Chicago President, Hugo Sonnenschein, among others. This session will include addresses by three keynote speakers and will be followed by a reception.

The topics to be presented by speakers are wide-ranging and, as they have in the past, should generate much stimulating discussion and debate. Mathematics education and reform will be discussed from the perspectives of different countries, taking into account the conference's three main themes: mathematics for all; achieving high performance; and technology. The list of speakers and topics to date, on page 3, illustrates that the conference will provide a rare opportunity to hear important issues and developments in mathematics education discussed from both a domestic and an international perspective. And, participants will have a chance to meet with a diverse group of mathematics educators and scholars from around the world.

Major funding for the conference is provided by a grant from the National Science Foundation. To receive further information and registration materials for the Fourth UCSMP International Conference on Mathematics Education, contact Carol Siegel at (773) 702-9770; write UCSMP, 5835 S. Kimbark Ave., Chicago, IL., 60637; or e-mail ucsmp@uchicago.edu.

UCSMP Elementary Component receives NSF Funding for Five-Year Project

In collaboration with the Consortium for Mathematics and Its Applications (COMAP), UCSMP's elementary component has received a grant from the National Science Foundation to promote the wide-scale implementation of reform elementary mathematics curricula. Sheila Sconiers, UCSMP's Director of Elementary Teacher Development, is the Principal Investigator of the project and will serve as the director of the new ARC Center (Alternatives in Rebuilding Curricula). ARC is a national center that will coordinate the activities of three satellite programs, one of which will be the UCSMP Elementary: *Everyday Mathematics* Center. Total funding for the project is \$5 million over five-years. Andrew Isaacs will direct UCSMP's participation in this project.

ARC's main goals are fourfold: teacher enhancement and leadership development; public awareness and information; consulting with schools and districts; and evaluation. The project will develop and refine ways to deliver the professional development teachers need; improve education and communication with teachers, administrators, parents and the general public about reform mathematics; help school districts identify and adapt the strategies suitable for local conditions; and document the effectiveness of the curricula being supported. For further information call Sheila Sconiers at (800) 772-6627, ext. 50, or Andrew Isaacs at (773) 702-9639; or e-mail arccenter@mail.comap.com or aisaacs@uchicago.edu.

CONFERENCE REPORTS/UPDATES

INTERNATIONAL CONFERENCE

(August 5-7, 1998)

INTERNATIONAL SPEAKERS

- Sudhakar Agarkar (India), *Teaching Mathematics to Socially Disadvantaged Students*
 Hans Brolin (Sweden), *Using New Technology as a Tool to Increase Student Understanding of Calculus*
 Ding Er-sheng (China), *Mathematics Reform Facing the New Century in China*
 William Ebeid (Egypt), *Mathematics for All: The State and Trends in Egypt*
 Yoshihito Hashimoto (Japan), *The Latest Thinking in Japanese Mathematics Education*
 Martin Kindt (Netherlands), *Classical Methods Combined with Modern Applications*
 Maria Klawe (Canada), *Design and Use of Interactive Multimedia Mathematics Learning Activities*
 Jean-Marie Laborde (France), *How Technology Empowers Geometric Modeling in Math and Sciences: Some Snapshots from Cabri-geometry*
 Lee Peng Yee (Singapore), *Mathematics Education in Singapore*
 Terezinha Nunes (Great Britain), *Can We Make Every Child Numerate?*
 Alexander Plotkin (Russia), *Individual Development via Mathematics: New Trends in School Mathematics in Russia*
 Jana Strakova (Czech Republic), *Mathematics Education and TIMSS Results in the Czech Republic*
 David Tall (Great Britain), *The Cognitive Development of Proof: Is Mathematical Proof For All or for Some?*
 Jane Watson (Australia), *Media, Technology, and Statistical Literacy for All*

U. S. SPEAKERS

- Jerry Becker, *Further Reflections on Teacher Enhancement: Work with U.S. Teachers of Mathematics*
 Gail Burrill, *Statistical Literacy for All Students: What Does This Mean for the Mathematics Curriculum?*
 Francis Curcio, *Cultivating Talent in Mathematics: An International Perspective*
 Bert Waits, *The Role of Technology in Mathematics Reform: What the Past Can Tell Us About the Future*
 John Dossey, *How Should U.S. Performance in School Mathematics Be Interpreted?*
 Wade Ellis, *Is the Hand-held Computer Algebra System the End of High School Algebra as We Know It?*
 Glenda Lappan, *To Work or College: Can We Prepare for Both?*
 Mary Lindquist, *Three Saints and a Sinner: Standards, States, and Statistics: A Personal View*
 Jean McGrew, *First in the World – A Story of a Consortium*
 Jon Miller, *Student Achievement in Mathematics During Middle School and High School in the U.S.: Results From the Longitudinal Study on American Youth (LSAY)*
 William Schmidt, *Policy Implications from the Third International Mathematics and Science Study*
 Cathy Seeley, *What Mathematics for Whom?*
 Harold Stevenson, *Preparing German, U.S. and Japanese Students for Work and College*
 Zalman Usiskin, *What Can We Learn from International Comparisons?*
 NSF Projects: Max Bell (UCSMP - Elementary Component); Rick Billstein (Six Through Eight Mathematics); June Ellis (Math Connections, A Secondary Mathematics Core Curriculum Initiative); Chris Hirsch (Core-Plus Mathematics Project); Ann Horn (Interactive Mathematics Project); Jennifer Knudsen (Middle-School Mathematics through Applications Project); Elizabeth Phillips (The Connected Mathematics Project); Laurel Robertson (Cooperative Mathematics Project); Tom Romberg (Mathematics in Context: A Connected Curriculum for Grades 5-8); Sharon Senk (UCSMP - Secondary Component); Philip Wagreich (Teaching Integrated Mathematics & Science Project)
 NSF Systemic Initiatives: Elizabeth Boehm (San Antonio, TX); Judith Silbaugh (Columbus, OH); Suzanne Mitchell (Arkansas)

STAFF PROFILE

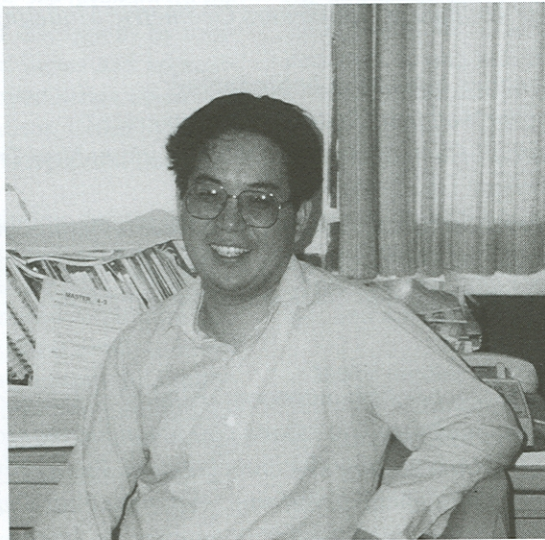
LIANGHUO FAN, UCSMP EDITOR, BRINGS RICH EXPERIENCE TO PROJECT

Lianghuo Fan first heard of the University of Chicago School Mathematics Project when a professor at East China Normal University in Shanghai gave him a copy of the *Proceedings* of the 1985 UCSMP International Conference on Mathematics Education. Fan was then in a master's degree program in mathematics education and the general impression among mathematics educators in China at the time was that the attitude towards mathematics reform in the West had become increasingly negative due the failure of 'new math.' Fan was immediately intrigued by the idea that UCSMP represented an alternative to this earlier approach to reform.

Several things struck Fan when he read the *Proceedings*. First, that reform in mathematics education was active and thriving outside of China. Second, that in order to gain maximum benefit from any reform in mathematics education, learning from the experiences of other countries was invaluable. Fan remains firmly convinced of this fact.

Fan's intense interest in the *Proceedings* and his enthusiastic response to learning of the existence of UCSMP reflected a long-standing interest in mathematics education and teaching. Born in Zhejiang Province, in the eastern part of China near Shanghai, Fan is one of three children and is the only one in his family to have lived outside of China. According to Fan, his interest in mathematics was to be expected: "In China, all students, from elementary through high school, view mathematics as their most important subject." Upon further consideration, Fan admitted that most Chinese students probably view mathematics as only *one* of their more important subjects! But, Fan, himself, cannot remember a time when he didn't consider math to be his number one interest.

By the end of high school, Fan knew he wanted to pursue a career in mathematics education and was already beginning to show signs of distinction. Due to his high level of performance in all his subjects, Fan's high school teachers recommended that he take the college entrance exams a year early and skip his final year of high school. Following college, Fan taught mathematics at the junior and high school levels for five years. By the end of his second year of teaching (at the age of twenty), Fan had already published an article in a mathematics education journal published in China on applying transformations to school mathematics problems. The experience he gained during this time was quite broad. He taught in both rural and urban schools, including a high school for gifted students in the province of Zhejiang, and he taught a wide range of mathematical subjects: calculus, advanced algebra, geometry, probability, and trigonometry.



UCSMP editor, Lianghuo Fan

At the end of this five year period, Fan enrolled as a graduate student in mathematics education at East China Normal University and received a Master's Degree in Mathematics Education in 1989. Upon receiving his master's degree, Fan went back into teaching, this time at the college level in the Zhejiang Institute of Education in the city of Hangzhou. During the next four years, Fan not only trained mathematics teachers, but began to do research on developments in mathematics education outside of China, primarily in the United States, Great Britain, Japan, and Singapore. His ever-growing interest in mathematics education led him in 1990 to translate the well-known book of W. H. Cockcroft, *Mathematics Counts: Report of the Committee of Inquiry into the Teaching of Mathematics in Schools* (1982). Fan's translation was published in China and continues to be used to this day.

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STAFF PROFILE

In 1991, while teaching at the Institute, Fan found out that Zalman Usiskin, the Director of UCSMP, was scheduled to give a series of lectures at East China Normal University, 100 miles away. Fan attended the lectures, and informed Professor Usiskin that he had begun to think about pursuing a Ph.D. in mathematics education in the United States, with the University of Chicago being one of his preferred choices. In September, 1993, Fan arrived at the University of Chicago as a doctoral student in the Department of Education. Fan describes himself at the time as "feeling very ambitious and enthusiastic and wanting to use every opportunity possible to learn." Anyone who knows Fan would have no doubt that this is exactly what he has done during his past five years in Chicago.

Due to his wide-ranging teaching experience in China, Fan became an associate editor at UCSMP immediately upon his arrival as a graduate student. He was promoted to editor in the summer of 1994 and has continued to work as a UCSMP editor since then, working on the second editions of *Advanced Algebra; Geometry; Functions, Statistics, and Trigonometry; and Precalculus and Discrete Mathematics*. For the past two years, he has been researching and writing his doctoral dissertation. Entitled "The Development of Teachers' Pedagogical Knowledge: An Investigation of Mathematics Teachers in Three High-Performing High Schools," it examines the main sources used by teachers to improve their pedagogical knowledge. Fan has found that teachers' own reflection and experience, as well as regular exchanges with colleagues, are the main sources influencing changes in their approach to teaching. Fan hopes to complete his dissertation within the next six months and then move with his family, his wife and two children, to Singapore where he has been offered a posi-

tion as assistant professor of mathematics education at the National Institute of Education in Singapore. Fan is convinced that living outside of China is important in order to further his teaching experience abroad and widen his exposure to mathematics education developments in other countries. In particular, he is looking forward to his teaching position in Singapore, where he knows he will learn a lot due to the high quality of school mathematics education in that country.

As concerns China, Fan remains attentive to how school education reform in the country is proceeding. Schools in China, according to Fan, are in much need of reform not only in mathematics education but in general. As part of his education in Chicago, Fan has made sure to be exposed to broad theories of education reform so that if the opportunity arises, he can be part of a more large-scale reform process. With regard to mathematics education in particular, Fan sees his experience at UCSMP as critical in influencing his view of what needs to change vis-a-vis school curriculum development in China: real-life applications and technology need to be brought into the school curriculum. Fan believes that, at this point, teachers and administrators in the country are very open to reform but lack sufficient information on developments abroad. Fan also believes that reformers in China are hopeful to avoid the mistakes of others by learning from them. Since not many teachers in China have had the opportunities Fan has had to work and study abroad, he looks forward to the day when he can use the knowledge he has gained to improve the educational situation in China. When asked what he misses most living abroad, Fan replies without hesitation: parents, family, friends, and authentic Chinese food!

CD-Rom for UCSMP Materials Receives Award

The **Wide World of Math Series**, a CD-Rom developed by Scott Foresman – Addison Wesley in partnership with ABC News and ABC Sports, to accompany UCSMP's secondary curriculum, has received a 1997-98 Technology Award for School and Home Learning Products from *Technology and Learning Magazine*.

CONFERENCE REPORTS/UPCOMING EVENTS

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Mathematics and Geometry, and tips for new teachers on how to incorporate the use of technology, such as graphing calculators and computer software, with *Algebra, Advanced Algebra, FST*, and *PDM*. Additionally, in sessions called "Sample Lessons" and "Teaching Tips for New Teachers," there will be ideas specifically geared towards those teachers just beginning to work with a specific text. As in the past, each workshop for new users will include an overview of the text and provide ample opportunity to have questions answered in "Questions & Answers with Experienced Teachers" sessions.

Experienced users' workshops will begin on August 10 with a session entitled "Transformations Throughout *Transition Mathematics, Geometry, and FST*" and on August 11 with a session entitled "Data Analysis and Modeling Throughout *Algebra, Advanced Algebra, and PDM*." These sessions replace the "Overview" sessions from previous years. For each of the texts, the experienced users' workshops will include sessions on new ways to approach assessment. For example, how existing tests can be changed for open-ended assessment or how technology, such as CD-ROMs, can be used for group assessment, might be discussed. There will also be sessions for using the CBL with *Algebra, Advanced Algebra, and FST*,

the TI-82/83 with *Transition Mathematics*, and the TI-92 with *Geometry*. As with the new users' sessions, the sessions for experienced users will include teaching tips geared towards experienced users and ample opportunity to meet with other experienced users and to have questions answered.

The staff and conference presenters are excited about the changes being made in the 1998 Secondary Inservices Workshops. They anticipate that the discussions in all the sessions will be made more focused and more directed towards the individual needs of participants.

UCSMP remains committed to providing workshops for the new users of its materials at no charge, as in previous years. Thus, there will be no registration fee for the New Users' Workshops. The fee for Experienced Users' Workshops is \$45 per full day workshop. The registration deadline is July 29.

If you would like to receive further information and a registration form regarding these workshops or if you have questions, please contact Carol Siegel at 773-702-1130; write UCSMP, 5835 S. Kimbark Ave., Chicago, IL., 60637; or e-mail ucsm@uchicago.edu.

UPCOMING UCSMP CONFERENCES

UCSMP Fourth International Conference on Mathematics Education, University of Chicago, August 5-7, 1998

- Presentations by more than forty scholars and educators from the US and abroad on three main themes: mathematics for all; high performance; and technology • Open to all • Registration deadline: July 24, 1998

Secondary Inservice Workshops, University of Chicago, August 10 & 11, 1998

- Day-long workshops devoted to teaching each course • Open to new *and experienced* users of UCSMP secondary materials in the 1998-99 school year • Registration deadline: July 29, 1998

Secondary Conference, University of Chicago, November 14 & 15, 1998

- Practical advice from experienced teachers • Manipulatives workshops • Technical sessions • User sessions • Open to all

Further information and registration materials for the secondary conferences will be sent to those on the UCSMP mailing list. To have your name added to this list, write UCSMP at 5835 S. Kimbark Ave., Chicago, IL 60637; call (773) 702-1130; or e-mail ucsm@uchicago.edu

Elementary Users Conferences

- New Users: June 16-17 in Rye, NY • July 23-24 in Lansing MI • July 28-29 in Atlanta, Georgia • August 3-4 on University of Chicago campus. • Experienced Users: June 24 in Columbia, MO • June 29 in Columbia, SC • July 1 in Wheeling, IL • July 13 in Seattle, WA • Nov. 4 in Phila., PA • Nov. 7 in Minneapolis, MN • Nov. 14 in Boston MA and Anaheim, CA

New users conferences are open to new users of UCSMP elementary materials in 1997-98 and include overviews and how-to-teach sessions. Experienced users conferences are open to those with 1 or more years of EM teaching experience in 1998-99 and focus on curriculum management and analysis. For more information, write Everyday Learning Corporation, P.O. Box 812960, Chicago, IL 60681, or call 1 (800) 382-7670.

USEFUL INFORMATION

Please Note

UCSMP HAS A NEW E-MAIL ADDRESS!

UCSMP's e-mail address changed this past winter. While we were able to incorporate our new address into the 1997-98 Winter Newsletter articles, we were not able to include a general announcement concerning this change.

Our new e-mail address is:

ucsmp@uchicago.edu

UCSMP is now on-line.

For questions and general enquiries, send e-mail to ucsmp@uchicago.edu.

To communicate with other users of UCSMP materials, you can subscribe to our on-line forum.

To subscribe (and receive all of its messages):

- e-mail ucsmp4um-request@spclists.spc.uchicago.edu
- type the word **subscribe** in the body (not the subject line) of your message.

To participate in the forum once you are a subscriber:

- send messages to ucsmp4um@spclists.spc.uchicago.edu

To discontinue your subscription to the forum:

- e-mail ucsmp4um-request@spclists.spc.uchicago.edu
- type the word **unsubscribe** in the body (not the subject line) of your message.

Are you receiving more than one copy of this newsletter?

Let us know so that we can remove any duplicates from our mailing list. Please send the duplicate label to UCSMP Newsletter, 5835 S. Kimbark, Chicago, IL 60637; call in your changes to us at 773-702-1130; or e-mail the record number printed on the duplicate label to ucsmp@uchicago.edu.

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 (517) 353-4691

Publishers of UCSMP Materials

K-6 curriculum & teacher development

Everyday Learning Corporation

P.O. Box 812960 • Chicago, IL 60681

(312) 540-0210 or (800) 382-7670

6-12 curriculum

Scott Foresman – Addison Wesley

1900 East Lake Avenue • Glenview, IL 60025

(800) 554-4411

International conference proceedings

National Council of Teachers of Mathematics

1906 Association Drive • Reston, VA 22091

(703) 620-9840

Japanese textbook translations, grades 10-11

American Mathematical Society

P.O. Box 6248 • Providence, RI 02940

(800) 556-7774

Other translations and evaluation reports are available directly from UCSMP. Call (773) 702-1130 for information.

UCSMP Newsletter

The University of Chicago School Mathematics Project
5835 South Kimbark Avenue
Chicago, IL 60637

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- Please add the name below to your mailing list to receive future mailings.
- Please add the name below to your mailing list and send a packet containing a project brochure, recent newsletters, and ordering information.

Name (please print) _____

Position _____

Institution _____

Indicate preferred address below (Home or Work):

Street _____

City _____ State _____ Zip _____

- Yes, I am using UCSMP materials or ideas, including:

Everyday Mathematics K 1 2 3 4 5 6 *MathTools for Teachers*

Transition Mathematics *UCSMP Algebra* *UCSMP Geometry* *UCSMP Advanced Algebra*

Functions, Statistics, and Trigonometry *Precalculus and Discrete Mathematics*