

## Upcoming Training Events:

(All are at UNC-CH unless otherwise indicated.)

- SMOKE –  
September 20-22,  
2004 (Portland, OR)
- CMAQ –  
September 23-24,  
2004 (Portland, OR)
- SMOKE –  
October 13-15,  
2004
- Models-3 User's  
Conference –  
October 18-20,  
2004
- CMAS External  
Advisory Committee  
Meeting –  
October 21, 2004
- CMAQ –  
October 21-22,  
2004
- Intro to MIMS –  
October 21, 2004
- SMOKE Lecture –  
October 21, 2004

Can't come to us for training? Have the same courses taught on-site at your location by the same experienced trainers. Contact [cmas@unc.edu](mailto:cmas@unc.edu) for more information.

## Credits:

**Design and Content:**  
Kim Hanisak

**Editor:**  
Jeanne Eichinger

**Additional Content:**  
Alison Eyth  
Ken Galluppi  
Adel Hanna  
Catherine Seppanen

## Update from the Director

### *An open letter to all CMAS community members*

Dear Colleagues,

We are coming into the home stretch of the CMAS Center's third year. The center, established in November 2001 under a cooperative agreement with the U.S. EPA, was created so that EPA could transfer primary responsibility for developing, maintaining, and applying the Models-3 system to a dedicated center that serves the needs of the air quality modeling community. The five CMAS Coordinators and I work together to ensure that CMAS assists and supports Models-3 users in all segments of the modeling community. The CMAS External Advisory Committee (EAC), which provides guidance and consultation to the CMAS Director, consists of 20 scientists representing academic, federal, state, and local government, and private-sector institutions. The EAC and I meet each year following the annual CMAS conference in October. Throughout the year there are also bimonthly conference calls with the committee members.

Since its inception, CMAS has been a platform that encourages exchanging ideas, sharing results, facilitating evaluations and applications, developing software, and promoting

outreach. This year has been no exception. For example, the center has created a unified CMAQ run script for executing all CMAQ programs from a single script. The unified CMAQ archive uses the Concurrent Versions System (CVS) to integrate all released versions of CMAQ to date, and creates a master script that enables selective building of CMAQ source code. A release of the CVS archive is expected this month. Also released for public use will be the source code for the latest version of the Package for Analysis and Visualization of Environmental data (PAVE). The CMAQ-MADRID code developed by Atmospheric and Environmental Research, Inc. (AER) under an EPRI contract has been tested for running in various computational environments; it is now available for download from the CMAS web site. CMAS is also working with Georgia Tech to include the CMAQ-DDM as another CMAQ version that users can download from our web site.

In this third year, CMAS research and development work for CMAQ has significantly enhanced the modeling of radiative transfer and photolysis rate calculations, improved land-surface calculations, and updated the



**CMAS Director  
Adel Hanna**

particulate matter algorithms, including incorporation of sea salt aerosols. CMAS also completed a scientific peer review of CMAQ; the review will be posted on the CMAS web site this month.

Each fall, CMAS holds a well-attended Models-3 User's Conference. Last year's three-day event drew over 150 participants from seven countries. It was quite enlightening to see the conference presentations discussing so many aspects of CMAQ and of the SMOKE emissions model, covering topics such as model development, evaluation, decision making, risk assessment, and air quality impacts. It was also gratifying to see the new generation of environmental scientists from 22 universities giving presentations, discussing results, and learning from their senior peers.

*[continued on page 3]*

## CMAQ-MADRID Is Now Available Online

CMAS is proud to announce the release of CMAQ-MADRID version 1.0 code as a stand-alone model. After registering at the CMAS Model Clearinghouse (<http://www.cmascenter.org/html/modelclear.shtml>), a site visitor can download the tarfile containing the model code, build and run scripts, and associated documentation concerning CMAQ-MADRID testing that CMAS has completed to

date. As a benefit to the CMAQ community, CMAS periodically updates its documentation on testing such development code versions to include additional feedback as it becomes available, based on users' experiences with these versions. AER's CMAQ-MADRID benchmarking datasets are available upon request. Results from the CMAS portability testing of these datasets are available in the CMAS Portability Test Results download.

Questions or comments about CMAQ-MADRID should be directed to Krish Vijayaraghavan at AER ([krish@aer.com](mailto:krish@aer.com)).

Questions or comments about downloading the tarfile and documentation, and on the software development guidelines, may be directed to either of the CMAS software development coordinators, Sarav Arunachalam ([sarav@unc.edu](mailto:sarav@unc.edu)) and Uma Shankar ([ushankar@unc.edu](mailto:ushankar@unc.edu)).

## CMAS to Take Training Courses to Portland

In an effort to increase the user group of SMOKE and CMAQ, CMAS will be taking the SMOKE and CMAQ training class on the road for the very first time. The Oregon Department of Environmental Quality, in conjunction with the Southwest Clean Air Agency and WESTAR, will host two special training sessions in Portland, Oregon, on September 20-24. These trainings will bring our trademark SMOKE and CMAQ classes directly to modelers in the western part of the United States and Canada without their having to come to the CMAS training center in North Carolina.

Preferred registrations are given to the host

organizations, but a few spots may be available for other interested parties. Contact [cmas@unc.edu](mailto:cmas@unc.edu) for more information.

Would you like to host your own set of training courses in SMOKE, CMAQ, or MIMS? CMAS can set up a similar training session at your location to train your staff. Discounted rates for training will apply, and the host location is responsible for the costs of the trainers' travel, hotel, transportation, and per diem. This can be a very cost-effective alternative for training larger groups of employees, rather than sending each of them to the trainings at the CMAS Center in North Carolina. We can also create custom classes based on your specific needs.

We will work with you to schedule your trainings in your desired time frame, dependent on our trainers' availability. All classes are conducted on CMAS's IBM Thinkpad laptops running Red Hat 9.0. Based on our resources, we can easily conduct classes of up to 12 students.

For more information, contact [cmas@unc.edu](mailto:cmas@unc.edu).

### Guidelines for New Code Development

Based on the insights gained from the testing and ongoing archival of CMAQ-MADRID, developed by AER under an EPRI contract, the CMAS Software Development Coordinators have created some guidelines for new code development.

We recommend that this minimum level of coding and testing practices be adopted by developers wishing to contribute code to the CMAS CVS archive. These nine recommendations are available from the Model Development Center at [http://www.cmascenter.org/html/model\\_dev.html](http://www.cmascenter.org/html/model_dev.html).

For more information, please contact [cmas@unc.edu](mailto:cmas@unc.edu).

### Still Seeking Nominations

At last year's workshop, CMAS awarded three community modelers for their enhancements to CMAS. We are seeking nominations for this year's conference awards. Nominees should have contributed to the community modeling paradigm, be avid participants in the help tickets system, have provided support to other users, or have shared a unique methodology with the community. To nominate a candidate, please send [cmas@unc.edu](mailto:cmas@unc.edu) a brief paragraph on why the person deserves to be recognized; put "Workshop Award Nominee" in the subject line. Help keep this community alive and well by participating.

## PAVE V2.2 and Source Code Released

PAVE Version 2.2 has been released effective July 1, 2004, and the PAVE source code is now available to the public under the GNU Public License. The source code includes several standard PAVE utilities, including utilities to create different map files and to convert observations to a format that PAVE can read. PAVE binaries are available for platforms that UNC can access for compiling software. The following changes to PAVE are included in Version 2.2:

- “PAVE by MCNC” no longer appears on plots.
- The default map region is no longer preclipped to show only part of North America.
- The maximum number of time steps was removed; analysis of annual hourly files is now possible.

- All plots generated by PAVE are now closed when PAVE exits.
- Formulas using very large and very small numbers now work.
- The COPYRIGHT is now the GNU Public License.
- The source code headers were updated to provide contact information at the Carolina Environmental Program and the new COPYRIGHT.
- The links in the documentation were updated to the current location of the software.
- The Makefiles used to build PAVE were updated to have more utility and flexibility.
- The capability to export PNG files was added.

Note that there were also a large number of changes in PAVE Version 2.1, some of which you may not be aware of—for example, overlaying point

observations on tile plots, providing aliases for long formulas, and an environment variable to specify map projection parameters for visualizing UAM/CAMx files that use the Lambert map projection. These changes are documented in the History of New Features chapter of the PAVE user’s guide at [http://www.cep.unc.edu/empd/EDSS/pave\\_doc/](http://www.cep.unc.edu/empd/EDSS/pave_doc/).

Some requests were received from the community that could not be included in Version 2.2 due to insufficient funding. We hope that the community can come together to fund the implementation of these changes.

PAVE Version 2.2 is available via the model clearinghouse at <http://www.cmascenter.org/html/models.html>. Please submit any PAVE bugs and feature requests to <http://bugz.unc.edu>.

### Important Conference Dates

July 15 – Session Chairs notify presenters of their status

September 1 – Accepted presenters submit extended abstracts

September 7 – Deadline for Early Bird Registration (\$250 regular, \$150 student)

After September 7 – Regular Registration continues through October 11 (\$300 regular, \$200 student)

October 6 – Presenters submit PowerPoint presentations

October 13-15 – SMOKE training class

October 18-20 – Models-3 User’s Conference

October 19 – Poster Session

October 21 – Intro to MIMS class

October 22 – SMOKE Lecture class

October 21-22 – CMAQ training class

For more information visit the conference website: [www.cmascenter.org/2004\\_workshop](http://www.cmascenter.org/2004_workshop). Please direct any questions regarding the workshop to Kim Hanisak, CMAS Events Coordinator, at [khanisak@unc.edu](mailto:khanisak@unc.edu).

## Director’s Letter [continued from pg. 1]

Preparations are already underway for the third annual CMAS conference (October 18-20, 2004). We are excited about the response from the community, which has already submitted 70 brief abstracts of papers for presentation in various sessions. As an added bonus this year, papers (either platform or poster presentation) that are presented in the “Model Evaluation” session will be considered (with the con-

sent of the authors) for publication in a special issue of *Atmospheric Environment*. Another important support function CMAS provides the community is training. Each year the CMAS Center conducts training sessions at the CMAS site to educate users on the application of CMAQ, SMOKE, and MIMS (at least two sessions annually per modeling system). Modelers acquire valuable

hands-on experience using case studies to ensure their familiarity with these models. This year, CMAS also began offering training sessions to users at their own sites.

We thank you for your participation in CMAS and look forward to seeing you all at the annual conference in October.

**Adel Hanna**  
**Director, CMAS**



## CMAS to Initiate "Internet Sessions": Interactive Online Seminars, Training, and Meetings



### From the Help Desk: SMOKE Tip

Need to trace a single source through your emissions processing? With SMOKE, you can use the BY SOURCE command in Smkreport to get emissions totals for individual sources at any step in the processing. For example, the BY SOURCE command along with the GRIDDING command gives you emissions totals by source after spatial allocation.

**We're on the Web!**

[www.cmascenter.org](http://www.cmascenter.org)

In cooperation with EPA's Air Pollution Training Institute (APTI) at OAQPS, CMAS will be using the Internet to broadcast interactive technical seminars and training classes and host collaborative meetings. Starting in mid-July, CMAS's new "Internet Sessions" program will offer several online seminars in which participants can view and interact from their office desktops. No special hardware beyond a PC with Internet Explorer, speakers, and an optional microphone will be required in order to participate. Internet Sessions will bring updated information to the modeling community without the expense of travel, or the difficulty of having to find the right conference to attend. Internet Sessions is not intended to be a replacement for live conference attendance or training, but a way to offer new information to a rapidly changing community in an era of limited time

### Schedule of Upcoming Seminars

Wednesday, July 7, 2004, 2:00 PM EDT

#### Testing of Online Capabilities

CMAS and APTI will review on-line presentation software and capabilities. We recommend logging on to this session to see how the capabilities could help your organization.

Wednesday, July 21, 2004, 2:00 PM EDT

#### CMAQ New Release Overview

Overview by USEPA/ORD staff of the next release of CMAQ scheduled for August 2004.

Thursday, July 22, 2004, 2:00 PM EDT

#### Running CMAQ with Consolidated Scripts

Wednesday, July 28, 2004, 1:00 PM EDT

#### Air Toxics Now

Overview of EPA's Clean Air Excellence Awards, with a close-up examination of one of the winning technologies. In addition, the broadcast will feature the pilot testing of the Regional Air Impact Modeling Initiative (RAIMI) modeling methodology by conducting a multipollutant, multisource risk assessment for a local community.

availability and tight budgets. The basic presentation forum will be MS-PowerPoint slides with voice-over-Internet (VoIP), although almost any media can be transmitted, including AVI, web-

surfing, and shared desktop applications. For a more complete listing of capabilities and instructions on how to participate, please see <http://www.cmascenter.org/html/sessions>.

## COMMUNITY MODELING AND ANALYSIS SYSTEM

Carolina Environmental Program

CB # 6116

The University of North Carolina at Chapel Hill

Chapel Hill, NC 27599-6116