



"Developing Outstanding Ideas and Individuals... One at a time."

ARG Alumni Newsletter Winter '04

1. Happy New Year!

Yes, it's us again. The previous installment of the ARG Alumni Newsletter met with such good response that we decided to keep it going for at least another 6 months. We hope you find this note useful to catch up with what some of your former lab mates are doing as well as just knowing what's going on over at the ARG. For further, and more frequent, updates you can always check out the "What's New" section leading off the ARG website at <http://mr-roboto.me.uiuc.edu>.

2. What's New?

The thing that would be most noticeable in terms of differences between now and the last time we met is the turnover in personnel. A lot of old faces said goodbye to the ARG and a couple new ones said hello. Last year saw a total of 8 people move on from our friendly confines here at UIUC:

- Dr. Sean Brennan took up residence in State College, Pennsylvania where he's on the tenure track as an Assistant Professor in the Mechanical and Nuclear Engineering Department. You can find him on the web at: www.mne.psu.edu/research/brennan.html.
- Dr. Yisheng Zhang graduated with his PhD and took a research position with Eaton Corp working on hybrid electric powertrain systems and other advanced truck technologies.
- Matt Polley graduated with his M.S. degree and moved back to the Chicagoland area to work with MPC, a controls company.
- Nick Ploplys graduated with his M.S. and moved out to sunny California to work for

Raytheon. He can't tell us what he's doing...otherwise he'd have to kill us.

- After hearing Nick's glowing reports on the So Cal lifestyle, Don Carter decided to graduate with his M.S. and also moved out West to work with Raytheon.
- Rajat Shah graduated and became one of the rare M.S. students who pretty much directly continue their graduate work in the working world. He's working for Behr, which is a German company, but he's working out of the Detroit area. He's still working on multi-evap modeling and control.
- Kevin Smith graduated with his M.S. and started his Naval training in South Carolina.
- Dr. Liang Chen returned to Taiwan to take up an academic position at Ming-chi Institute of Technology.

Well, all those vacancies left a lot of room in ARG. However, we decided that bigger isn't always better and so we didn't replace everyone that left. Two new faces joined us this Fall. Brandon Hency comes to us from the University of Missouri in Columbia after doing his B.S. and M.S. there. He's following in the footsteps of all the previously successful Missouri students we have had in the lab. He'll be working on multi-variable gain scheduling, trying to bring a design aspect to the verification technique developed by Dr. Rong Zhang when he was here. His experimental platform will be the EVPS system.



Joining Brandon as an ARG newbie is Yan Li who comes to us via the University of Karlsruhe in Germany. His undergrad background is in manufacturing systems and machining. He's our first student to join the ARG from Germany.



He's working on dimensionless analysis and controller design and his current experimental platform will be the IRS and other vehicle-related systems. Yan decided not to wait until he was an alumnus to provide us with information for the "Catching-up" section and he got himself married over the winter break! Here he is with his new wife Jie Zhang who will be accompanying him to Illinois.



3. Accomplishments

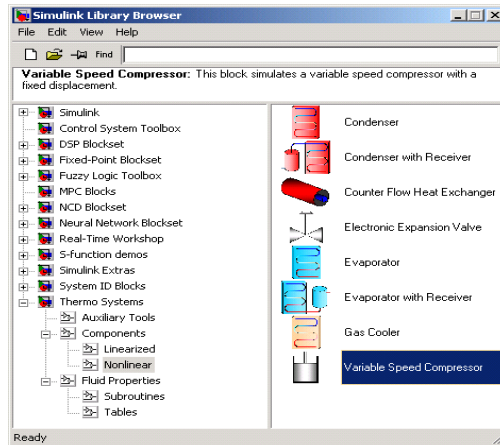
As with the first version of this newsletter, we feel it's important to let you know that those you left behind are carrying on the ARG tradition in fine form. There have been several notable accomplishments by current ARG members and we'd like to share those with you.

- Dr. Danian Zheng, Doug Bristow, and Nick Ploplys each received a Best Presentation in Session award at the 2003 American Controls Conference.
- The future Dr. Bryan Rasmussen received an ASME Graduate Teaching Fellowship for 04-05. This sets him further on down the path towards that academic career.

- Andrew Alleyne received the biennial ASME DSCD Outstanding Young Investigator Award at the ASME IMECE in November.
- The future Dr. Marina Tharayil passed her Preliminary Examination in December.
- The future Dr. Douglas Bristow passed his Qualifying Examination in January.

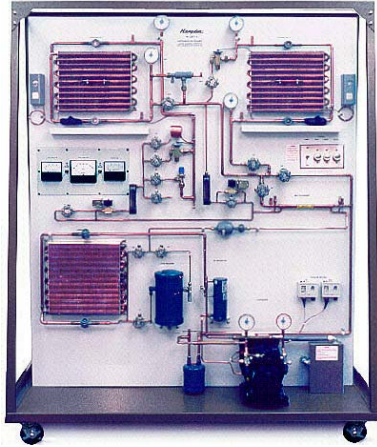
4. Featured Research

This section is something new. We thought it would be good to highlight one or two of the things that are going on in the lab so that you could get an idea of some of the neat things being done. In this installment one of the things we're going to focus on is the Vapor Compression Cycle control work that Bryan Rasmussen's been doing. The primary reason for that is that it seems that Bryan will finally get his own experimental plant to play with. After months of simulation and modeling of these systems, his patience will be paying off. For the past few years, Bryan's been developing software tools for use with Matlab that can model and simulate transient dynamic phenomena in Vapor Compression Cycles; basically, air-conditioning. A screen shot of his software is below.



After much hemming and hawing, we found a way to scrape together enough financial support to get Bryan a system like the one shown below. We're still working on finding a way to pay for the interfacing but that should come through this Spring as well. With this equipment, Bryan's 'steepest

descent' algorithm towards graduation just got a major boost.



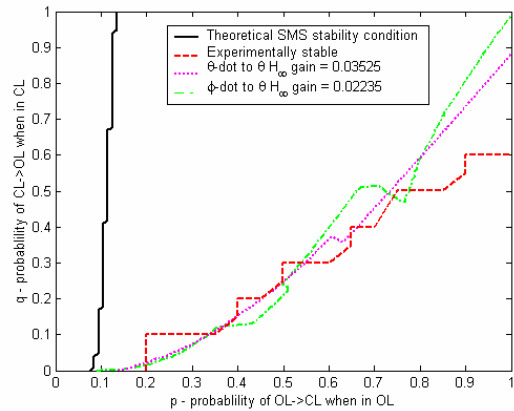
This will be a dual evaporator system that he'll have to reconfigure and instrument but he'll tell you it's a lot better than having to run around 'hat in hand' and ask to use other people's data. With this system, Bryan will be able to do some better control-oriented modeling as well as apply some of the multivariable gain-scheduling analytical approaches he is working on.

Another research area that is going well involves a familiar face.



Yep, Krusty's still alive and kicking; both figuratively and literally. Paul Kawka has been following along the lines of research initiated by Nick Ploplys in wireless servo control. Paul has come up with some very interesting results predicting stability ranges

for wireless feedback communication systems by using 2-state Markov models for packet loss and some neat H-infinity analysis.



In the figure above, we're really excited because the pink and green lines (analytical) match up the red line (experimental). We don't want to bore you too much with details but we think it's pretty cool!

5. Announcements-Catching up.

Well, since this summer we've heard from a few alumnae with word of their life after ARG. Heather Lai (formerly Havlicsek) (M.S. 1998) is living in the Chicago area with her family. Here we see a great picture of Heather, her husband Wilkin, and their son Matthias Steven Lai who was born on May 24th, 2003.



Rui Liu (M.S. 1999) is living in the Bay Area and has a daughter Sophia with his wife Wei.

Rui is working as a software engineer in a startup company called Protego Networks, in the area of network security. Here are Rui and Sophia enjoying a stroll in Muir Woods. Sophia was born in June 2003 so she and Matthias would probably make great playmates.



In other family related news and notes, both the Alleyne's and the Rasmussen's will be expecting future additions to their families in the first quarter of 2004. The rest of the ARG lab is a bit nervous because they're not too sure if that procreation thing is contagious or not.

For those not quite at the child rearing stage, there's still quite a bit of good news. Rong Zhang (Ph.D. 2002) is recently engaged to a lovely young lady named Xiaojing and they'll be married at the end of February. If you're interested, check out the website <http://iqua.ece.toronto.edu/~rzhang/household/video/jhc2003Nov.htm> for more details. Matt Polley (M.S. 2003) also got engaged to his long-time girlfriend in late 2003 and wedding plans are under way. Rajat Shah (M.S. 2003) found himself in a similar situation over the winter when he went back to India and got engaged. Here's Rajat and his new fiancée Smita during the engagement ceremony. Raj is looking smooth as always.



Finally, out in Southern California Nick Ploplys (M.S. 2003) has headed down the same path to nuptials. His big date is set for July 4th, 2004. We're guessing this way he can watch fireworks at his wedding, and every anniversary after, without having to actually pay for them. Very shrewd.

That's all the updating that we have for you this time. Hopefully by next time we'll have some wedding pictures to show (Matt, Nick). We look forward to receiving news and notes about the things you're doing. Take care and we plan to touch base with you again at the end of this summer.