



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

# ARG Alumni Newsletter Summer '11

## 1. Greetings

Hello again ARG alumni! Welcome back to another exciting school year. It was a 'challenging' Spring semester just trying to juggle things. The Summer has been good for catching up but now it's back to the fun that is university research (really, it's more fun than a regular job!) As you'll see in a bit we've had a significant influx in new people that have come. Additionally, there have been some very good updates from previous ARG alumni so overall, things have been very good. As always, you can check the individual student web pages on the ARG website and/or check out the "What's New" section leading off the ARG website. One change from before is the location of the website. Now we're at <http://mr-roboto.mechse.illinois.edu> or <http://arg.mechse.illinois.edu>. The students have redone the server to make it more presentable to the outside world. Drop us a line and let us know if you like it.

## 2. Who's New?

Over the past couple years we'd had some very good people transition on to excellent opportunities. We didn't add that many last year but we sure changed that this year. I think we're back up to peak all-time levels which is both good as well as challenging. I think I have failed my commitment to keep the lab to  $\leq 10$  folks. The Transitions section

will say where people went. Here we'll talk about who came.

We have 4 new grad students so far, plus a visiting scholar. There may be one more that would start next term but we'll see how that goes and update you in the Winter '12 newsletter. This is an excellent crop of new talent and we feel fortunate that they joined us.

The first new graduate student to join us is



Justin Koeln. Although he's from Maryland, Justin comes to UIUC from Utah State University, the alma mater of former ARG member Bryan Rasmussen. A good

precedent was set with the last USU grad so...Go Aggies! Justin comes with a wealth of undergraduate research under his belt, including multiple publications, and actually started over the summer to get a jump on research. After committing to come work with us he was awarded and NSF Graduate Fellowship. He's working on a thermal management system for land and air-based vehicle platforms.



Megan Kania comes to us from Valparaiso University with a double major in Mechanical Engineering and Physics. She was one

of their top students and had crucial experience in the area of heat transfer and fluids. She is also working in the thermal management systems area and started with Justin over the summer. She's been spending much of her time learning how to use the Thermosys toolbox and reading previous ARG theses.



Joey Fasl comes from WUSTL by way of Los Alamos National Labs where he worked on computational modeling for some solidification applications. With his

background in thermal/fluid/phase-change systems, he's a natural fit for (yep, you guessed it) the thermal management systems area. Joey was an Aero undergraduate at WUSTL. I'd heard good things about him from his former professors when I visited for board meetings so we were happy to have him.

Finally, for the graduate students, Sarah Mannen comes to us from Texas A&M. She was finishing up classwork over the summer so came very recently. Part of the reason she was taking summer classes was to catch up from taking a



study abroad semester...cool. She also has extensive undergraduate research experience including publications. Her area is not thermal systems. Rather she's working in the high precision motion control area to support manufacturing at the small scale.

The final addition is a visiting scholar, Ms. Heqing Sun. She comes to us from Beijing Jiaotong University where she works as a

graduate researcher in the Advanced Control System Laboratory with a Major of Transportation Information Engineering and Control. She will be working on Iterative Learning Control for coordinated systems with her chosen application domain of train transportation. It may also be likely that she'll branch out to other ILC types of analysis and applications.



You can read more about all these students on the new ARG website. We are looking forward to great things from them...in the tradition of all ARG alumni ☺

### 3. Accomplishments

There were several things that happened here over the Spring and Summer which we'd like to keep all of the alumni abreast of. Here's we'll stick to the major ones from ARG.

- After finishing up a post doc in the NanoCEMMS, Kira Barton started her position as an Assistant Professor at the University of Michigan, Ann Arbor.
- David Hoelzle successfully completed his Ph.D.
- David Hoelzle accepted a post doc position at UCLA.
- David Hoelzle accepted an Assistant Professor position at Notre Dame
- Neera Jain and Shreyas Sundaram got married in August 2011
- Vikas Chandan Passed his Qualifying Exams.
- Vikas was also featured in the Fall 2010 list of "teachers ranked as excellent" for his TA work.
- Neera Jain passed her Preliminary Exam.
- Neera Jain, Nanjun Liu and Yangmin Xie all won "Best Presentation in Session" at the 2011 ACC.
- Nanjun Liu passed her Qualifying Exams
- Justin Koeln was awarded and NSF graduate fellowship. We know it happened before he go to ARG but we're still very happy about it.

- Prof. Alleyne was awarded a National Research Council fellowship.

Also, you can check our ARG homepage regularly to find out whether any new news has come through. If you have any news of your own, please send that over to me and I can get it posted

#### 4. ARG Summer Activities

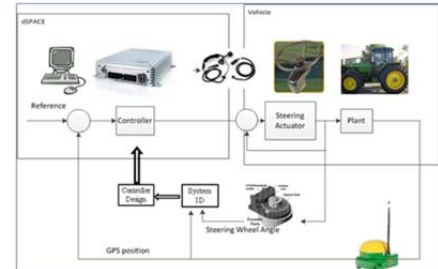
This summer saw some of our ARG members move off campus to continue their research activities. This is an excellent way for students to get that mysterious “real-world” experience they always hear about. Vikas Chandan was one example of this. He spent the summer with Siemens Corporate Research in Princeton, NJ. Vikas is working on the Building Systems efficiency problem. After communicating with several industries in the field, Siemens seemed the best fit for him to gain insight into how some of the larger corporate entities do things related to his research. Additionally, he could learn about the state of the art in terms of tools used by industrial researchers. The key was to embed himself in a research organization so that the objectives were not too much different from his objectives.

The summer was very productive with Vikas participating in some projects that support Department of Energy programs. His focus was primarily on modeling with a little bit of optimization thrown in there. The models were of power generation, distribution, and storage for relatively large scale systems. This was useful for his thesis because he’s developed some tools but doesn’t have good/realistic examples on which to try them. Currently, he’s wrapping up the summer activities by trying to assemble the team’s efforts into a paper for next year’s ACC.

Another ARG member spending time off campus was Nanjun Liu who headed to Deere

in Iowa for a brief but critical period of data collecting. This data, on Deere’s production systems, went a long way towards validating the identification and control methodology that she’s been working away at for her M.S. thesis.

She’s been working on developing an auto steering system and the key is



that the system has to be flexible and smart enough to not know a-priori what vehicle it’s being asked to steer. Other challenges examined this summer included the effects of adding implements or other attachments to a vehicle, unbeknownst to the controller. After a lot of very hard work, Nanjun should be depositing this thesis in the near future.

This summer Prof. Alleyne started his commute back and forth between the Air Force Research Labs and Champaign Urbana. He’s starting a sabbatical for a year and will be working with AFRL on the dynamics and control of several of their in-vehicle systems. It will naturally be a challenge to move back and forth but we’ll take a stab at it and see how it goes. We did break down and become a 2 car family now. There was no way to bike the 250 miles each way to Dayton!

#### 5. Transitions.

In academic research labs, the one constant is change. We had a few people that moved on, some permanently and some temporarily. We wish them all well on their new adventures and ask them to touch base periodically.



As mentioned, Kira Barton, Alex and little baby Adi moved from Champaign to Ann Arbor Michigan. Go Blue (although it pains me to say so). She's got her own lab and coordinates now:

<https://me-web2.engin.umich.edu/pub/directory/bio?uniqname=bartonkl>

Since Alex \*was\* an honorary ARG member by the associative property of lab membership, he deserves a shout out about his new coordinates as well:

<https://me-web2.engin.umich.edu/pub/directory/bio?uniqname=tba>

We will miss all 3 of them but I'm sure paths will cross again soon.

David Hoelzle also finished up in a flurry and took off for milder climates...temporarily. He's doing a 1 year post doc at UCLA with Amy Rowat in Integrative Biology. The focus will be on adding automation to leverage life science analysis. Next August, Dave will be taking up an Assistant Professor position at Notre Dame in South Bend, Indiana. It's a good opportunity for him and is close to home and his family. Notre Dame's going through a growth phase and Dave's manufacturing + health/bio activities will fit in very well.

While we're sad to see them all go, it does provide space for some new ARG members to

grow into their own intellectual leadership roles.

## 6. Catching up

Usually, we start off with baby news but, WOW, no baby news this time apart from young Adi Barton Shorter. I was hoping for a bit from Brad Edler but we'll wait and see; maybe the winter version. We must be slowing down as a group. Either that or we're ALL getting older and are way past that stage of starting a family.

In lieu of baby news, I can state that there was a surprise visit earlier this year by two former ARG members: Rajat Shah (MS 2003) and Doug Bristow (PhD 2007). We had a lab party and had them come on over and meet some of the new folks.



For those of you know Raj, check it out...he looks exactly the same as when he started at UIUC 10 years ago!! How does he do it ☺? Doug is still doing the professor thing at MUS&T while Raj has changed locations. He was in NYC for a while and has gone back to India with Smita and Sathak. He is working with cooling systems again and it's good to have him back in the technical fold. I always get worried with ARG'ers end up moving to Wall Street. It's almost like we did something wrong over here ☺





Serena Tyson (MS 2008) is continuing her flight training on Cobra helicopters. Below is a picture she sent with her and a couple of classmates. This is a picture of:

*“a cross country I did in March. We took a division of AH-1Ws up to San Francisco and flew under the Golden Gate Bridge. The next day we flew to Vegas going through the mountains near Bishop. At Vegas we got to fly up and down the Vegas strip and then we flew home via Big Bear ski resort. The two other guys in the one picture are students just like me learning how to fly this thing!”*



Another ARG member who's in training is Alex Montgomery (MS 2006). Alex has made some changes in his life and has gone back to business school at Columbia after working for Northrop Grumman for several years. This may be one of those “engineer-turns-Wall Street” stories I worry about ☺.

The MBA was the second biggest news of Alex's year to date. The biggest was his engagement to Olivia. We haven't heard of a date yet but I'm sure the planning is underway. Here's a relatively recent picture of the two of them in Hong Kong. Good luck Alex, and remember, “Money never sleeps, buddy” {that was Michael Douglas in the original Wall Street}



Brad Edler (MS 2004) spent more than the last 6 years working in Hydraulics Research at Cat. A significant portion of that time was continuing work on truck brake control systems. His team has built several test-beds ranging from 50 to 240 ton capacity. As he says, “sliding a quarry truck around in the snow brings a new level of excitement to testing control systems.” While he's been happy at Cat, it's time for a change. Family ties are pulling and Brad and Kate are expecting a child any date now (Sept). They both grew up in a farming environment near family and would like to give the future Mr. Edler the same opportunities. Therefore, he's transitioned to working with Lincoln Industrial designing lube systems for Cat machines as well as many other applications. Brad and Kate have bought some land near Maeystown, IL and plan on building a house there next year. Several years back he bought a 200CLC Deere (20 ton hydraulic excavator) and last fall I also bought a Cat 963B (20 ton track loader). We have been putting these machines to work on our land. Last weekend we finished a levee for about a 2.5 acre pond.



That's what I've got for now. Keep in touch, keep sending updates, and we'll look forward to crossing paths in the future!