



**Newsletter**

**Volume 15  
Number 2  
December 2000**

## Calendar of Events 2000-01

- o **20 January 01 – Kids Club at PASM**, learn how to build telescopes
- o **17 February 01 – Kids Club at PASM**, materials in airplanes and spacecraft
- o **24 February 01 – Southern Arizona Rocketry Assoc. (SARA)** high power rocket launch
- o **28 April 01 – Model rocket egg launch**
- o **20 – 22 April 01 – AIAA Design/Build/Fly Competition** Patuxent River Naval Base, Maryland
- o **April or May 01 – AIAA University-Industry Forum** details TBA

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## Happy Holidays (and wishes for a quick recovery)

by Kevin Kremeyer

Things have been so remarkably busy in the Section, and they just keep getting busier! A surprising accomplishment has been to move this year's winter AIAA Regional Advisory Committee (RAC) meeting to Tucson, instead of at the traditional El Segundo location. We're hoping that this will allow us to both show off some of Tucson's finer points and follow up by drawing a large AIAA conference to town (this would be another perk for our local industry).

It's very encouraging to see everyone's increasing involvement make the section's undertakings so successful. Involvement has been very high in events ranging from our last dinner meeting to the "AIAA Kids Club" sessions. I'm hoping that these positive dynamics will further entice you to get involved with any of the programs or meetings that may interest you. Even a single annual appearance from each of our many members is a formidable force over the year.

The latest AIAA "call to arms" is for help in our prospering educational outreach efforts. These include K-12, as well as the different University projects. Educators are starting to take advantage of our offers to help explain different science/technology principles and their practical applications to their classes, different science/technology principles and their practical applications to their classes.

If you would like to try meeting with an educator or classroom, or if you have a school (or student) in mind that might be interested, please follow up on that feeling. It can be as short as a 40-minute time commitment, and may wind up being very rewarding. Maybe a New Year's resolution can help push you to give it a shot.

The ultimate goal is to build a strong bridge between science, education and the real world. Meeting this goal will not only help our industry, our education system and our nation, but most importantly, it might result in more appreciation for technically minded people (at last, our hidden agenda is officially admitted!)

Anyone wanting to give it a shot (even just once) can contact Chad Wassmuth at:

[cmwassmuth@west.raytheon.com](mailto:cmwassmuth@west.raytheon.com)

If you don't have email, you can ask for him at 545-6211.

As always, we would very much like to see you at the different events. If there is something else you would like to see or do, or if you would like to help out or organize a project or event of your own, please contact us at [tucson\\_aiaa@yahoo.com](mailto:tucson_aiaa@yahoo.com)

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## AIAA University-Industry Forum

by Kevin Kremeyer

Through the transition of Region VI Director from Ken Sanger to Joe Morano, both agreed on providing the Tucson section with funds to organize an Industrial Forum to help draw Tucson Industry together. Many high-tech companies, both large and small, are represented in Southern Arizona, and many of the smaller companies have sprung from either graduates or technology of the University of Arizona. The net sum is very broad and potentially strong.

However, it is very difficult to tap into this strength and build on it without knowing what's available. The University-Industry Forum will provide a safe environment for both Industry and University groups to show their products, strengths, capabilities, and needs.

We're shooting for two days at the end of April or beginning of May, with an excellent dinner program for an evening. We will also incorporate tours of different

## Aerospace and Arizona Days 2000

by Ed Palanek

University buildings and facilities. So plan on taking a couple of days in the Spring for a Southern Arizona "Show and Tell" to meet and greet your neighbors and see what they're up to. It's also a good opportunity to put together or update displays and product information, if you've been meaning to.

The main purpose is to nurture collaborations among groups from within Industry and the University, so please be prepared to advertise your goals and desires. This event is geared to help with employment, teaming, new/improved product lines, and to spark new ideas.

Funding agencies view such relationships as vital, since they positively affect the success of projects and companies. Increasing the connections in Tucson will therefore not only result in more efficient local operation, but will also lead to an increase in successful and well-funded projects/companies.

We'll have the full information in our next newsletter. If you're interested or have any questions, you can send an email to [kremeyer@physics-math.com](mailto:kremeyer@physics-math.com), or simply leave a message at 882-7349.

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### AeroAstro and the Student Satellite Project

by Kevin Kremeyer

November 28th was marked by a visit from David Goldstein of AeroAstro. Representing the world's leading microsatellite company, he came to tell us the wonders of this emerging technology. The talk was held at the University's Lunar and Planetary Laboratory, with pizza provided by the LPL Director, Mike Drake, and the Space Grant Program.

Our mutual intent was to help inform and entice local industry, and to give the Student Satellite Project (SSP) a jumpstart toward their launch date in November 2001. The group was approximately half AIAA/Industry and half University/SSP.

We'll have more on the University's four-inch "cube-sat" in the next issue, and the opportunities for involved industry members are quite enticing, including the prospect of dedicated personal satellites costing as little as fifteen thousand dollars.

Anyone curious about how they can become involved can contact Dr. Johnny Hsieh at [hsieh@physics.arizona.edu](mailto:hsieh@physics.arizona.edu). Even if you'd simply like to learn more about the technology, there is plenty of room for that, since this is the ultimate goal of the project.

The Tucson AIAA will continue to help, and if you have any ideas or suggestions on ways to do this, please send a note to [tucson\\_aiaa@yahoo.com](mailto:tucson_aiaa@yahoo.com).

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The Tucson Section of the AIAA had a booth in the Vendor's Hangar at the Aerospace and Arizona Days 2000 Air Show at Davis-Monthan AFB on November 4-5, 2000. The booth displayed information panels on AIAA programs, educational features, enrollment, and special activities.

The display included a beautiful radio-controlled scale model of the A-10 Warthog built by Robert Wagoner of the Electric Jet Factory. The model drew a great deal of attention from the many visitors that stopped by the booth.

Attractions at the Air Show included a B-1, F-117 Stealth Fighter, F-16s, A-10s, KC-135, EC-130, C-17, a variety of other tactical fighters, and flight demonstrations by aerobatic teams, parachute teams, a vintage F-86 and Mig-17, and topped off by the USAF Thunderbirds.

Despite some rain showers and low ceilings, the airshow was very successful and drew well over 500,000 visitors. It provided the Tucson Section of AIAA a nice forum in which to advertise the benefits of AIAA membership and its contributions to aerospace education in America.

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### Design/Build/Fly Competition Status

by Frank Manning

This semester capped a productive design effort for the Aircat2001 airplane, the UA's entry to the next Design/Build/Fly (DBF) competition in April 2001. The contest will be held at Patuxent River Naval Base, Maryland.

The DBF team reports that the Aircat2001 construction is essentially complete, which is a considerable improvement over last year, when the airplane wasn't at this stage until a week before the contest.

The first flight is scheduled for early January. The powerplant for the airplane, an Astro 90 cobalt motor, arrived December 13 at the Electric Jet Factory and was delivered to the students the next day.



Powerplant  
for Aircat2001

This semester, the DBF design won best overall design of all the aero senior design projects in the UA Aerospace and Mechanical Engineering Department.

Congratulations to the DBF team for a job well done! On to Patuxent River!

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## Dinner with Dr. Peter Likins

by Kevin Kremeyer

On Thursday, October 12th, Dr. Peter Likins spoke to a full house at the University of Arizona Alumni Foundation. He discussed his satellite work, which earned him the title of AIAA Fellow, as well as his encounters as the University of Arizona President.



**UA President Peter Likins (right) talks with students at dinner meeting**

I know that Dr. Likins very much appreciated the strong attendance. He was very excited about the Korolev biography presented to him that was dedicated to him by AIAA Fellow Jim Harford, who spoke at our dinner meeting last Spring.

The 60 attendees were a nice mix of about 2/3 AIAA and Industry members to 1/3 University Researchers and Administrators. This allowed many nice bonds to be formed, as well as progress in arranging our Industrial Forum to be held at the U of A this upcoming Spring.



**Kevin (right) receives Past-Chair Award from Kelly Sinnock, our secretary/treasurer**



**Joe Gross (on left) receives 40 Year Award**

In addition to presenting several service awards that evening, we honored Theodore Troller and Dick Thoreson by taking a moment of silence. Their contributions to aerospace are briefly touched on below.



**Ken Teague (on left) receives 25 Year Award**

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## Process Engineering and Quality Control

by Kevin Kremeyer

Professor Dimitri Kececioglu of the University of Arizona carries the flag for Reliability Engineering. Everywhere he goes, he tells people of the huge demand and low supply of qualified people in this field. Before he's even halfway finished, he has all of the manufacturing people in the room nodding vigorously in agreement.

Because of this extreme imbalance, there are excellent opportunities for people interested in the field. As incentive, Dr. Kececioglu quotes starting salaries of freshly graduated M.S. students, consistently in excess of \$65,000, with plentiful opportunities.

Every year his Research Assistantships of \$17,632 and Fellowships of \$11,000 are wasted due to lack of interest. He has requested us to send out his contact information in the hope of attracting some qualified people to graduate studies in this field.

Dr. Dimitri B. Kececioglu, P.E. H: (520) 297-2679  
Prof. of Aerospace and Mechanical Engr. W: (520) 621-6120  
University of Arizona fax: (520) 621-8191  
1130 N. Mountain Ave  
Bldg. 119, P.O. Box 210119 dimitri@u.arizona.edu  
Tucson, AZ 85721-0119 www.u.arizona.edu/~dimitri

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## High Power Rocketry and Raw Eggs.

by Kevin Kremeyer

Well, the offer/challenge from Steve Lubliner for our members to build gentle and "long hang-time" launch vehicles for raw eggs is slowly drawing near. The actual day of reckoning is scheduled for Saturday, April 28th, and as always, will be appropriate for the whole family. See Steve's RFP here:

[http://www.aiaa.org/sections/ts/newsletter/model\\_rocket\\_rfp.html](http://www.aiaa.org/sections/ts/newsletter/model_rocket_rfp.html)

However, on Saturday, February 24th, the Southern Arizona Rocketry Association (SARA) will be holding a high power launch (with high-altitude FAA clearances), and Steve has invited us out to learn more about model rocketry (probably to lower the likelihood of us making omeletes in April). He will have several rockets there for us to look at and explore, and will also give us tips and answer any questions we may have.

Even if no one in your family wants to learn about model rockets that Saturday (and get advice on how to save the eggs in April), it will still be a wonderful experience to see 10 foot rockets soaring miles into the sky. In any event, it's a good opportunity to treat a kid (at heart?) to some neat stuff. Directions to the site, and the full details of the day will be included in the next newsletter. They will also be sent out electronically before the event.

SARA web site:

<http://www.primenet.com/~tmorgan/rockets/sara/>

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### **Educational Activities**

by Rajka Corder

The great news is that, this fall, the Tucson Section started a joint educational program with Pima Air and Space Museum (PASM). This academic year, we started our activities by organizing our Kids Club, which is for children aged 8-12 and promotes science related to flight and space exploration.

The Kids Club meets once a month between November and May. So far, we have 30 registered children and several AIAA volunteers preparing presentations and hands-on activities. The PASM provides the facility for all the sessions -- we are very thankful to Emily Morrison, the Director of PASM Education Program, who enabled this activity to take off.

The first session was held on November 18, when Steve Lubliner presented a very effective session on rockets. The task was to launch a "space station" and use the rockets to transport space station modules, cargo and astronauts. The children prepared and assembled the rockets and, at the end of the session, they got a chance to launch them outside and perform final assembly of their space station. It was a lot of fun for the kids as well as the AIAA volunteers.



**Kids Club Rocket Launch**

The second session was held on December 2nd. Robert Wagoner, Frank Manning and Steve Lubliner covered the basic principles of flight, after which the kids built and flew their own gliders.

The kids then got to see Robert do an indoor flight demonstration of a small radio controlled model called a slowflyer. A slowflyer is a type of model, usually electric powered, that is capable of flying in very small areas.

At the end of the session, we took the kids through the museum and showed them real airplanes and pointed out their differences and performances. We then handed out some more gliders for the kids to take home. Some of the gliders were cut on a new computer-controlled foam cutter at the Electric Jet Factory. This was the inaugural run of the device.

The next session of the Kids Club is scheduled for Saturday, January 20th. The topic will be astronomy and telescopes. You can sign up your children by calling Emily Morrison at the Pima Air and Space Museum (574-0462, ext.121).

In addition to the club, our goal for this academic year is outreach to the local schools, offering them our help in science demonstrations during their regular lectures. In the beginning of October we had an opportunity to meet local teachers during the "Teacher's Day" at PASM. The strong turnout demonstrated the high level of interest in such sessions, since the teachers, in many cases, don't have the resources to buy or make scientific kits. Thus, some of our volunteers are preparing elementary and high school demonstrations that they will present in schools in the Tucson area.

I'd like to use this opportunity to invite you to participate in our Educational Program and to volunteer your time and experience to help reach out to Tucson children -- by building a solid program to promote our discipline. If you'd like to be one of our educational volunteers, please contact us at [rajka@email.msn.com](mailto:rajka@email.msn.com) or [Tucson\\_aiaa@yahoo.com](mailto:Tucson_aiaa@yahoo.com).

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### **Tucson Sweeps Section Awards!**

by Kelly Sinnock

Congratulations to the Tucson section for winning first place in all seven 1999/2000 award categories. The Tucson section is considered a "small section" and therefore competed against other sections of that category. The applications for the awards were submitted in June and the sections were notified in October of the results.

The certificates will be formally presented to the sections at the awards ceremony at the Aerospace Sciences Meeting & Exhibit held in Reno, Nevada in January 2001.

Following are short descriptions of the awards:

#### **[1] Annual Report & Outstanding Section Award -**

The Annual Report is the Business Report for the Section and must be received before a Section can

receive its rebate for the next year. This report is a synopsis of the entire year's activities.

**[2] Communication Award** - This award is presented to a Section that has developed and implemented an outstanding communication outreach program (i.e. newsletter, internet, etc).

**[3] Public Policy Award** - The award shall be presented for Section activities which are directed at informing government officials, members and the general public of the benefits of research and development in aeronautics and astronautics and of the benefits of R&D in aeronautics and astronautics.

**[4] Membership Award** - This award is presented to the section that put forth an effort and demonstrated success in the areas of membership recruitment, retention and recognition.

**[5] Precollege Award** - This award is presented to a Section that has developed and implemented an outstanding precollege outreach program.

**[6] Career Enhancement Award** - The awards shall be presented for Section activities that are beneficial to career development.

**[7] Young Professional** - This award is presented to Sections that demonstrate excellence in the involvement and professional enhancement of Young Professionals.

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These awards are given out annually, so if you have any ideas of how we could meet any of these goals in the upcoming year, please let us know!

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**Membership Awards**

by Rina Fulcher

The Tucson Section of the AIAA is proud to present awards to the following members for their continuous membership and support in the AIAA. Please join us in congratulating the following Tucson Section AIAA members.

**65 Years of AIAA Membership**

Theodore Troller    Associate Fellow Retired    Member since 1933

**50 Years of AIAA Membership**

John Altseimer    Senior Member Retired    Member since 1948

**40 Years of AIAA Membership**

Joseph Gross    Senior Member Retired    Member since 1957  
Thomas Blackburn    Senior Member    Member since 1958  
Thomas Phillips    Associate Fellow Retired    Member since 1960  
Lloyd Perper    Senior Member Retired    Member since 1960

**25 Years of AIAA Membership**

Mauro Cornejo    Senior Member    Member since 1974  
Kenneth Teague    Senior Member    Member since 1975

***In memory of***

***Theodore Troller***

Theodore Troller began his membership in the American Rocket Society in 1933 (before the ARS merged with the AIA to form the AIAA). This was shortly after he came to CalTech from Aachen, Germany with his PhD advisor, von Karmen.

After his work at Cal Tech, he was asked to direct a lighter-than-air institute in Akron Ohio. During this time, his knowledge of German aerospace technology was instrumental in helping the allied forces during WWII.

Theodore had a very full and active life up until his death at age 97. We are very happy to have had him as a member for more than 67 years.

***Dick Thoreson***

Lt. Colonel Dick Thoreson, USMC (Ret) was a graduate of the University of Iowa, a Marine fighter pilot during the Vietnam War, and an advocate of aviation related activities here in Southern Arizona. He and his wife, Judy, spent most of the year in Green Valley and summer months at their Iowa home.

A member of our Tucson AIAA Section has established a Matching Grant Fund in the amount of \$500 as a commemoration of Dick Thoreson's service to our country. The Challenge is requesting donations to be made to "AIAA Student Chapter-UA-DBF Project," which will be matched up to a total amount of \$500.

All proceeds will go to our Student Branch Design/Build/Fly Competition Project, and contributions can be mailed to our treasurer:

Kelly Sinnock  
7663 S. Meadow Spring Way  
Tucson, AZ 85747

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## Welcome, New Members!

By Rina Fulcher

Please join us in welcoming the following new members to the Tucson Section!

### **Professional Members**

Charles Lyman                      Wayne Spate

### **Educator Associates**

Edward Agnew	Juileen Allbaugh	Mary Allbaugh
Robert Anderson	Nina Angiulo	Mike Bloker
Paula Bloker	Issa Castillo	Gerry Cloud
Lois Comolli	Denise Durazo	Patrick Ebel
Susan Elsberry	Maria Encinas	Debbie Fenno
Bill Finkelstein	Gayle Gentile	Cindy Hall
Angela Haufe	Sharon Hill	Donette Kendall
Mary Kraus	Ellen Lang	Joseph Lewis
Connie Mesta Hernandez	Kristina Ormand	Scott Reed
Janet Salvaggio	Judith Soruisto	Kirsten Tedesco
Matthew Trillo	Karen Underwood	Kay Wilson
Ken Wilson		

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## Tucson Section Officer Roster 2000-2001

Chair: Kevin Kremeyer  
Secretary/Treasurer: Kelly Sinnock  
Membership: Rina Fulcher  
Webmaster: Robert Wagoner  
UA Faculty Advisor: Larry Scott  
Education Chair: Rajka Corder  
Military Liaison: Ed Palanek  
Newsletter Editor: Frank Manning

Web site: <http://www.aiaa.org/sections/ts/>

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American Institute of Aeronautics and Astronautics

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