

## Miniature Unmanned Aerial Vehicles (MUAV) Workshop Announcement

Recently, the importance of Unmanned Aerial Vehicles (UAV's) in the areas of surveillance, search-and-rescue, and warfare has been developed. While many consider UAV as a "mature technology," the area of miniature UAV (MUAV) is still not fully developed. These vehicles have the advantages of light weight and reduced noise levels. They are harder to detect and relatively inexpensive to operate in the hazardous environments. MUAV can be used indoor, and in swarms that can survey and monitor large areas. Control of MUAV present several challenges.

A prominent number of faculty members at University of Nevada, Las Vegas and University of Nevada, Reno have studied various aspects of control problems of MUAV's in the past. This workshop focuses on taking the research institutions in Nevada to a higher competitive level. Our intended audience is faculty and graduate students in engineering, science, and computer science in UNLV and UNR. Please note, additional emphasis will be placed on encouraging young faculty to develop their expertise in this area.

### Presentors

- Siva S. Banda, Ph.D. & Director, Control Science Center of Excellence, Air Force Research Laboratory
- Sunil Agrawal, Professor, University of Delaware
- Paul Oh, Professor, Drexel University

The workshop objectives are to encourage workshop participants to identify current challenges in the area and to look for multi-disciplinary collaborative opportunities and approaches.

It matches the ASME International Design Engineering Technical Conferences, IDETC, (<http://www.asmeconferences.org/ideetc07/>). The conference which will be held at the Rio All-Suite Hotel & Casino, Las Vegas, Nevada, is expected to be attended by 1400 participants. We are planning to arrange a trip to Creech Air Force Base, which is the home of the newly created Joint Unmanned Aerial Vehicle (JUAV) Center of Excellence (CoE).

### Event details

**When:** Saturday, September 8, 2007

**Time:** 8:00 a.m. -5:30 p.m.

**Location:** UNLV  
Howard R. Hughes College of Engineering  
Thomas T. Beam Engineering Complex  
Building B-172  
4505 Maryland Parkway, P.O. Box 454005  
Las Vegas, NV 89154-4005

**Meals:** Breakfast and lunch will be provided

**Workshop Cost:** Free

**Workshop Contact:** Mohamed B. Trabia,  
UNLV  
Howard R. Hughes College of Engineering  
Department of Mechanical Engineering

Phone: (702)895-0957

Fax: (702)895-3936

Email: [mbt@me.unlv.edu](mailto:mbt@me.unlv.edu)

**Workshop space is limited, we encourage immediate registration. Participants will be accepted on a first come first serve basis.**

Priority seating is available to State of Nevada researchers and their group members. If all seats are NOT filled by **September 1**, 2007, then participants outside the State of Nevada will be accommodated.

#### **How to register:**

Workshop applicants should fill the attached form and send it to [mbt@me.unlv.edu](mailto:mbt@me.unlv.edu).

Workshop space is limited, we encourage immediate registration. Participants will be accepted on a first come first serve basis.

Priority seating is available State of Nevada researchers and their group members. If all seats are NOT filled by **September 1**, 2007, then participants outside the State of Nevada will be accommodated.

#### **Participants from Reno:**

Las Vegas has plenty of hotels. However, Extended Stay, 1550 E. Flamingo Rd., Las Vegas, NV 89119, (702) 731-3111, is the only one within walking distance to the workshop site. This location is a non-gaming establishment.

The hotel web site is: <http://www.extendedstayhotels.com/>

This workshop is sponsored by the Cognitive information Processing (CIP) focal area of the NSF Nevada EPSCoR program.

## Proposed Schedule

### Miniature Unmanned Aerial Vehicles Workshop (MUAV's) Las Vegas, Saturday, September 8, 2007

Dr. Mohamed B. Trabia (University of Nevada, Las Vegas) – Moderator

<b>7:30 – 8:15 a.m.</b>	Registration
<b>8:15 – 8:30 a.m.</b>	Opening Remarks Dean Eric Sandgren, Howard R. Hughes College of Engineering UNLV
<b>8:30-9:00 a.m.</b>	“Autonomous and Cooperative Control of Micro Air Vehicles,” Dr. Siva S. Banda <i>Air Force Research Laboratory</i>
<b>9:00 – 10:00 a.m.</b>	“Design and control of MUAV for Indoor Applications,” Dr. Paul Oh <i>Drexel University</i>
<b>10:30 – 10:50 a.m.</b>	Break
<b>10:50 a.m. – 12:20 p.m.</b>	“Aerial Robotics for Near-Earth Environments,” Dr. Paul Oh <i>Drexel University</i>
<b>12:20 – 1:30 p.m.</b>	Lunch
<b>1:30 – 3:00 p.m.</b>	“Recent Advances in Flapping Wing Technologies,” Dr. Sunil Agrawal <i>University of Delaware</i>
<b>3:00 – 3:30 p.m.</b>	Break
<b>3:30 – 5:00 p.m.</b>	“Future of Flapping Wing Air Vehicles” Dr. Sunil Agrawal <i>University of Delaware</i>
<b>5:00 – 5:30 p.m.</b>	Closing Remarks Dr. Mohamed Trabia <i>UNLV</i>

## Workshop Registration Form

Name \_\_\_\_\_

Address \_\_\_\_\_

Street

City

State

Zip

Country

Email address: \_\_\_\_\_  
(to confirm registration)

Phone Number: \_\_\_\_\_  
(for use in case of an emergency)

Highest Degree/Field of study \_\_\_\_\_

Current status

(If you are a student list your department and degree you are pursuing; if you are a postdoctoral researcher please list your field of study; if you are a faculty member please list your discipline)

Advisor/group leader name (if other than yourself) \_\_\_\_\_

Previous experience with UAV? Please describe.



HOWARD R. HUGHES  
COLLEGE OF ENGINEERING