



# Eighth Annual Information Meeting

April 9-10, 2014

Pfahl Executive Education Building, The Ohio State University, Columbus, OH

## **Workshop Program - Wednesday Morning, April 9**

7:30	Workshop Registration and Continental Breakfast
8:15	Welcome, introductions and workshop overview <i>Frank van Graas, COUNT Director</i>
8:30	Government Presentations
9:00	Presentation by Honeywell, Inc.
9:30	Presentation by Northrop Grumman Corporation
10:00	<i>Break</i>
10:30	Overview of Navigation Related Research at The Ohio State University ElectroScience Laboratory, <i>Inder "Jiti" Gupta</i>
	Poster Presentations by OSU ESL (45 minutes)
	Calibration of Airborne Antenna Arrays using Signals of Opportunity - Andrew Kintz and Inder J. Gupta
	Blind Beamforming in GNSS Receiver Antenna Arrays - Ying Chieh (Jay) Chuang and Inder J. Gupta
	Two-stage Beamformers for GNSS Receiver Antenna arrays - Ying Chieh (Jay) Chuang and Inder J. Gupta
	Experimental Verification of the on-the-fly Estimation of Adaptive Antenna Induced Biases in GNSS Receivers - Ying Chieh (Jay) Chuang, Matt Buchanan, Andrew O'Brien and Inder J. Gupta
	Multi-Channel Data Acquisition System for Navigation Research at OSU- ESL - Andrew J. O'Brien, Tom Smithhisler and Inder J. Gupta
	Space-Based GPS Reflectometry for Wind Speed Sensing - Andrew J. O'Brien, Yuchan Yi and Joel T. Johnson
	Studies of GNSS-R Ocean Altimetry Using Full DDM-based Retrieval - Jeonghwan Park, Joel T. Johnson, and Stephen T. Lowe
	Echoic Flow for Autonomous Aperture Traversing - Saif A. Alsaif, Graeme E. Smith, and Christopher J. Baker
12:00	<i>Lunch</i>

## Workshop Program – Wednesday Afternoon, April 9

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- 13:00 Overview of Navigation Related Research at The Ohio State University  
Satellite Positioning and Inertial Navigation Laboratory, *Dorota A. Grejner-Brzezinska*
- Poster Presentations by OSU SPIN (45 minutes)
- Evaluation of Different Linear Combinations of GPS Observations To Enable High-Accuracy Georeferencing of a UAS - Ben Vander Jagt
  - Indoor Mapping and Trajectory Reconstruction using the Kinect Sensor - Grzegorz Jozkow
  - GNSS-derived Heights - Tae-Suk Bae
  - Study on the Acceleration Aided Tracking Features of Ultra-tight GPS/INS Integration - Ren Chunhua
  - Human Motion Modeling Using Smartphones in Support of Personal Navigation - Andrew Zaydak
  - A Casual Visual Inertial Geo-registered Navigation Approach - Jianzhu Huai
  - Investigation of the Vertical Movement of the Great Lakes Region Using Time Series of GPS Data - Terry Richardson
  - Optical Flow Estimation using Epipolar Geometry Constraint - Siavash HosseinyAlamdary
  - A Probabilistic Approach to Landslide Susceptibility Mapping using Multi-temporal Airborne LiDAR Data - Omar E. Mora
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- 14:30 Overview of Navigation Related Research at Miami University, *Jade Morton*
- Poster Presentations by Miami University (45 minutes)
- GPS TEC Mapping and Validation Using Incoherent Scatter Radar Measurements - Harrison Bourne, Y. Morton
  - Comparative Statistics of High Latitude and Equatorial Scintillation - Yu Jiao, Melissa Simms, Kyle Wyan, Y. Morton
  - Plasma Dynamics Inferred from A GNSS Receiver Array - Jun Wang, Y. Morton
  - Global Multi-GNSS Ionosphere Scintillation Monitoring and Data Collection Systems - Steve Taylor, Harrison Bourne, Brian Breitsch, Y. Morton
  - Tracking Beidou Satellite Signals during Ionosphere Scintillation on Ascension Island - Dongyang Xu, Y. Morton
  - Multi-Frequency GPS Tracking Algorithms for High Latitude and Equatorial Scintillation Signals - Mark Carroll, Y. Morton
  - Performance Evaluations of CNAV Broadcasting Message - Hang Yin, Y. Morton
  - Software-Defined Radio for Ionosphere Height Measurements, Jack Hall, Fan Zhang, Y. Morton, Eric Vinande, K. Kauffman, M. Haker
  - Simultaneous Indoor Localization and Detection with Multi-Carrier Radar - Robert Cole, D. Garmatyuk, Y. Morton
  - Miami RedBlade---An Autonomous Snowplow - Richard Marcus, Jamie Morton, Robert Cole, Y. Morton
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## Workshop Program – Wednesday Afternoon, April 9 - Continued

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16:00 Overview of Navigation Related Research at Ohio University Avionics Engineering Center, *Frank van Graas*

Poster Presentations by Ohio University (45 minutes)

Applications of the Ohio University Part Task Simulator - Tony Adami, Maarten Kastelein, Paul Stocklin, and Adam Schultz

UAV Safety Assessment and Aircraft Collision Avoidance - Jessica Belzer, Maarten Kastelein and Pengfei Duan

A Multi-Mode Prediction and Alerting Function for Improved Aircraft State Awareness - Pengfei Duan

Two-Satellite Navigation with GPS Bistatic Radar and Rubidium Oscillator - Shih-Wei Yen

GNSS/Optical/Inertial Integration for 3D Navigation and Mapping Using Multi-Copter Platforms - Evan Dill

Automated GNSS Monitors - Rakesh Kashyap

Rubidium Oscillator Performance in Flight Environments - Samantha Craig

Minerva Sensor Interface - Adam Naab-Levy

Enhanced Distance Measuring Equipment Development and Flight Test Program - Kuangmin Li

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18:00 *COUNT-Hosted Banquet*

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## Workshop Program – Thursday Morning, April 10

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7:30	<i>Continental Breakfast</i>
8:00	Government Presentations
8:30	Presentation by Rockwell Collins, Inc.
9:00	Presentation by The MITRE Corporation
9:30	<i>Break</i>
10:00	Overview of Navigation Related Research at the Air Force Institute of Technology, <i>John Raquet</i>  Poster Presentations by AFIT (45 minutes) Differential Vector Phase Locked Loop - James Brewer Image-Aided Navigation Using Cooperative Binocular Stereopsis - 2d Lt Justin Soeder Vision-Aided Integrity Monitor for Precision Relative Navigation Systems - Sean Calhoun A Performance Model of an Integrated Navigation Solution using Satellite Observations from Star Trackers - Maj Scott Pierce
11:30	Discussions and Concluding Remarks

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