



# RRSD NEWS

## Winter/Spring, 2013



THE NEWSLETTER FOR THE ANS ROBOTICS AND REMOTE SYSTEMS DIVISION



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# RRSD NEWS

Robotics and Remote Systems Division  
November, 2012

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## Message From the Chair

*Dr. Reid Kress*

*Department of Energy's Y-12 National Security Complex*



Welcome to the 2013 Winter Edition of the RRSD News. I am Dr. Reid Kress from the Department of Energy's Y-12 National Security Complex and I am serving as the Chair of RRSD for the period of June 2012 to June 2013. I have been a member of RRSD for many years beginning with helping with my first topical back in 1989. A lot has changed since then in the world of robotics and remote systems in general. However, the ANS RRSD continues to serve as a primary source of robotics and remote systems information for its members as well as providing needed support to aspiring young students interested in robotics from the elementary school level to graduate school. Much has been accomplished over the last year and there are many plans for this year. Let me summarize some of the key recent accomplishments and immediate plans.

First, RRSD experienced a 6% growth last year. We were one of the few ANS divisions showing growth and this indicates our members are trying to recruit new people for the future. Thanks!

This year's officers are myself (Y-12) as chair, Jim Tulenko (ANS Fellow, UFL) as vice-chair, Mark Noakes (ORNL) as secretary, and Chris Eason (Staubli) as Treasurer. Executive Committee members are Miles Close (PaR), Jeff Coughlin (SRS), John Jansen (EPRI), Bruce Legge (iRobot), Timothy McJunkin (INL), Richard Minichan (SRNL), Sean Peterson (CRL), Mitch Pryor (UTX), and Duane Schmoker (URS). We also have Lisa Lockrem (URS) as Young Members Liaison and Tom Nance (SRNL) as ex-officio chair. As you can see, the RRSD continues to attract outstanding professionals to guide the division and plan for the future.

This past fall, RRSD held its 13<sup>th</sup> Topical meeting in Knoxville with well over 100 persons attending. Work toward the 14<sup>th</sup> Topical is underway. RRSD plans on joining the Decommissioning, Decontamination, and Reutilization Division for the conference. An ExCom member, Rick Minichan, has been tasked to lead the effort into possibly having the topical in the early fall of 2014 in Charleston, SC or Savannah, GA. Begin thinking about what you might publish in the conference.

The Ray Goertz Award was established in 1985 to recognize and honor Robotics and Remote Systems Division members who have made outstanding contributions to the field of remote technology. It honors the late Raymond C. Goertz for his lifetime contribution to the advancement of remote handling systems and for his development of the master/slave manipulator. Ray Goertz was also instrumental in the founding of the Robotics and Remote Systems Division (formerly known as Remote Systems Technology Division - RSTD), starting with the planning of the first formal informational exchange meeting held in 1951. The award is usually presented once every two years at the topical meeting and in 2011 was given to Norbert Grant.

A number of other meaningful improvements are being worked on by your RRSD Executive Committee (ExCom) and here are a few highlights. New publication opportunities are being evaluated for upcoming ANS meetings and a special addition of Nuclear News featuring RRSD articles is being considered. Our RRSD webpage has been improved by ExCom's Mitch Pryor and a Table of Contents of our Topical meetings has been listed to provide more information to our membership. We are seeking approval to add old topical papers to our webpage in the future for access to further benefit our membership. Improved recognition of our membership has also been put into motion as new categories of RRSD awards have been made available through the RRSD ExCom's Honors and Awards committee. This includes best student paper awards and enabling the Ray Goertz award to be given annually. The ExCom continues to work on society-wide recognition for its membership with support from past ANS President and current RRSD ExCom member Jim Tulenko. The RRSD Newsletter has also been turned over to member Sean Peterson and continues as our primary communication vehicle for the RRSD. RRSD recently sponsored two K-12 student Lego robotics teams with awards of \$500 (from interest off of our endowed student support fund).

As you can see, the RRSD offers opportunities for technical exchange, honing presentation skills, networking, mentoring, and for being recognized by your peers. RRSD provides opportunities for mentoring of youth and for supporting their efforts as they learn and grow into robotics professionals of the future. We hope that you support RRSD this year with your continued membership, presence at meetings, and publications. We hope that you invite your colleagues to join RRSD and improve the division and themselves. Lastly, we hope that you allow RRSD to support you and your colleagues through fostering technical exchange and peer recognition.

Thanks,

*Reid Kress*

Reid Kress, PhD, PE  
Senior Technical Advisor, Y-12 National Security Complex  
Adjunct Professor, Department of Industrial Engineering, University of Tennessee, Knoxville  
Chair, ANS Robotics and Remote Systems Division  
(865) 574-4849; [kressrl@y12.doe.gov](mailto:kressrl@y12.doe.gov)

## RRSD Honors and Awards

*Lisa Lockrem, Special Awards Chair*

Robotics and Remote Systems Division (RRSD) honors and awards were presented during the 2012 American Nuclear Society Annual Meeting held in Chicago, IL. Members of the RRSD Executive Committee, Dr. Thomas Nance, Mrs. Colleen Shelton-Davis, Mr. Chris Eason, and Mr. Rob Owen, completed their terms of service and were recognized for their service to the division.

Dr. Thomas Nance (Savannah River National Laboratory) served as the Chair during 2011-2012 and has also served as vice-chair, treasurer, and secretary of the RRSD Executive Committee. Under Dr. Nance's leadership, the RRSD held the 2011 topical and membership increased. He spearheaded new initiatives such as placing publications on the web as a member service, revamping RRSD honors and awards, and developing the Executive Committee through improved turnover, shared work scope, subcommittee chair sponsorship, and committee membership balance.

Ms. Colleen Shelton-Davis (Idaho National Laboratory) served on the executive committee since 2008 and was the chair of the publications committee. In December 2009, Shelton-Davis led the RRSD effort to produce a special issue in Nuclear News on robotics and remote systems.

Shelton-Davis worked on a number of initiatives including providing paper access to RRSD members. She also investigated the development of a paper index and a RRSD fact sheet.

Mr. Chris Eason (Staubli Corporation) has recently entered the officer track and has served on the committee since 2009. He is now serving as the treasurer for the Executive Committee. As a member of the committee, Mr. Eason has worked on developing a new products guide and aided in addressing growing membership.

Mr. Rob Owen (PaR Systems, Inc.) served on the committee since 2009 and has worked with the Executive Committee for many years. He has assisted with a series of sessions and publications at the ANS conferences. Mr. Owen also provided leadership and assistance with the 2011 topical meeting.

Congratulations to all of the award recipients! The RRSD greatly appreciates all of the time and contributions of the Executive Committee members!

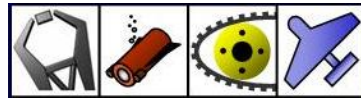
*Future award nominations can be made by contacting the RRSD Honors & Awards Chair Duane Schmoker through the RRSD webpage.*

## RRSD Embedded Topical Session (Announcement and Report)

*Tim McJunkin, Idaho National Laboratories,  
2012 Embedded Topical Chair*

RRSD organized an Imbedded Topical at the ANS Annual Meeting in May of 2012. Three speakers and four presentations on advances in robotics and remote systems were presented to an audience of about sixteen meeting attendees. Papers ranged from systems to remotely inspect exhaust stack structures before decommissioning to experiences and need assessment with disaster recovery from the Fukushima nuclear plant. The session highlighted the continuing need for research and development of a diverse set of applications in the nuclear industry.

The presentations demonstrated the breadth and strength of research in robotics and remote systems required in the nuclear energy field. Papers included international contributions from national laboratories, commercial companies and institutes. Technologies covered range from remote systems necessary for assessments in the worst-case scenarios, such as those experienced in Japan, to deployment of in-service inspection for nuclear energy systems. We invite all to join the division to explore the technologies in robotics and remote systems necessary to move forward in the nuclear energy industry.



## RRSD participation at the ANS National Meetings

The American Nuclear Society 2012 Annual Meeting was held in Chicago, IL during June 24-28, 2012. The RRSD Executive Committee met on June 24<sup>th</sup> from 12-4 PM to discuss current division business.

The American Nuclear Society 2012 Winter Meeting will be held in San Diego, CA during November 11-15, 2012. The RRSD Executive Committee will meet on November 11<sup>th</sup>, 2012. All members of RRSD are welcome to attend. Please see the attached Call For Papers and for more information contact Richard Minichan at [richard.minichan@srl.doe.gov](mailto:richard.minichan@srl.doe.gov).

## Nuclear News Articles

Articles involving robotics and remote system for the nuclear industry can be published in the *Nuclear News*, a monthly newsletter magazine published by ANS. If you have an article that is appropriate for publication in *Nuclear News*, please contact Reid Kress at [kressrl@y12.doe.gov](mailto:kressrl@y12.doe.gov).

SUMMARY DEADLINE: January 11, 2013

# CALL FOR PAPERS



## "Next Generation Nuclear Energy: Prospects and Challenges"

### CONFERENCE CHAIRS

#### GENERAL CHAIR

Stephen Kuczynski, *CEO, Southern Nuclear Co (Southern Co. Subsidiary)*

#### TECHNICAL PROGRAM CHAIR

Sedat Goluoglu, *University of Florida*

#### ASSISTANT TECHNICAL PROGRAM CHAIRS

Mark D. DeHart, *Idaho National Laboratory*

Jeff Brault, *Shaw Group*

### DEADLINES: NO EXCEPTIONS

**SUBMISSION OF SUMMARIES:** October 1, 2012–January 11, 2013

**AUTHOR NOTIFICATION OF ACCEPTANCE:** By February 25, 2013

**REVISED SUMMARIES DUE:** March 12, 2013

### FORMAT

Authors are now **REQUIRED** to use the ANS Template and "Guidelines for TRANSACTIONS Summary Preparation" provided on the ANS Web site. Summaries must be submitted electronically using Adobe Acrobat (PDF) files and original Microsoft Word documents and the ANS Electronic Paper Submission and Review System. Summaries not based on the ANS Template will be **REJECTED**.

### GUIDELINES FOR SUMMARIES

Please submit summaries describing work that is **NEW, SIGNIFICANT, and RELEVANT** to the nuclear industry. ANS will publish all accepted summaries in the TRANSACTIONS. Papers are presented orally at the meeting, and presenters are expected to register for the meeting. Completed papers may be published elsewhere, but the summaries become the property of ANS. Under no circumstances should a summary or full paper be published in any other publication prior to presentation at the ANS meeting. It is the author's responsibility to protect classified or proprietary information.

### CONTENT

1. Introduction: State the purpose of the work.
2. Description of the actual work: Must be **NEW** and **SIGNIFICANT**.
3. Results: Discuss their significance.
4. References: If any, must be closely related published works. Minimize the number of references.
5. Do not present a bibliographical listing.

### LENGTH

1. The minimum length is one full page.
2. The maximum length is four pages, including references, tables, and figures.
3. Limit title to ten words; limit listing authors to three or fewer if possible.

### PAGE CHARGE

ANS charges \$100 per final printed page (prorated) in the TRANSACTIONS. Authors should be prepared to provide their purchase order numbers when submitting their summaries electronically.

### REQUIRED TEMPLATE AND "GUIDELINES FOR TRANSACTIONS SUMMARY PREPARATION":

[www.ans.org/pubs/transactions](http://www.ans.org/pubs/transactions)

### SUBMIT A SUMMARY:

[www.ans.org/meetings](http://www.ans.org/meetings)

#### TRANSACTIONS COORDINATOR

Ellen Leitschuh  
Tel: 708/579-8253  
Fax: 708/352-6464  
[eleitschuh@ans.org](mailto:eleitschuh@ans.org)

#### INFORMATION SERVICES

Joe Koblich, Director  
Tel: 708/579-8237  
Fax: 708/352-6464  
[jkoblich@ans.org](mailto:jkoblich@ans.org)

## RRSD Funds Robotic Student Teams

*Jeff Coughlin, Savannah River National Laboratory,  
Student Support Chair*

Fostering student interest and participation in the field of robotics and remote systems is an RRSD priority. A Student Support Fund created by the RRSD Executive Committee, relieves a portion of the student costs related to robotics team involvement. This fund is sourced with a fraction of ANS conference and membership fees collected annually. Student teams apply for a grant by using the instructions located at the RRSD homepage.

In 2012 fall/spring meetings, RRSD voted to disburse grants to 5 different Lego League teams. Many of these teams have competed and placed well in a variety of tournaments.

Teams RRSD funded within the last 18 months and voting dates:

### October 2011

Team	Location
PK Yonge Development School	Gainesville, FL
Junior Engineers of Tomorrow, FLL Team, Jets, Team 5209	Lagrange, KY
Columbia County 4-H Robotics	Martinez, GA

### June 2012

Team	Location
Aragon High School Robotics Team	San Mateo, CA
Carver-Edisto Middle School	Cope, SC

Updates have already been received from the October teams supported. From the updates it can be seen that RRSD funding was put to good use.

The Columbia county teams attended the FIRST Lego League (FLL) Tournament in Dublin Georgia in December. Their team names were “Bodacious Builders” and “Mega Gears”. A fourth place overall finish was captured.

The Junior Engineers of Tomorrow reported participating in the FLL Mount Washington Tournament and placing well, team name was “Jets”. The photographs below reflect this assessment.

PK Yonge Development School provided the following website link as their update:  
[http://firstrobotics.pkyonge.ufl.edu/modules/groups/integrated\\_home.phtml?gid=2345680&sessionId=a8ac255d158c6857a062388cb06491da](http://firstrobotics.pkyonge.ufl.edu/modules/groups/integrated_home.phtml?gid=2345680&sessionId=a8ac255d158c6857a062388cb06491da).

Collectively the teams report much teaming, learning and fun was experienced by all of the participants. That statement is evidenced by the photographs shown below.

*Columbia County 4-H Robotics Pictures*



**Figure 1: Members from all Three Teams.**



**Figure 2: Team A. I. Getting Scores from the Judge at the Competition**



Junior Engineers of Tomorrow, LaGrange, KY, Team 5209, Jets Pictures



Figure 3: Community Service Team Award



Figure 4: Jets in Action



Figure 5: Team Parade



Figure 6: Jets on Local Television Show Promoting the Tournament



Figure 7: Group Photo



Figure 8: Trophy Time!

## RRSD Welcomes New Members of the Executive Committee



**John F. Jansen** Senior scientist with Electric Power Research Institute, Knoxville, TN. BS (1977) and MS (1979), Electrical Engineering University of Florida; PhD, Electrical Engineering Georgia Institute of Technology. Distinguish R&D Staff Member at Oak Ridge National Laboratory (ORNL) in the Robotics Group from 1988 to 2010. Main responsibilities included developing concepts and implementing advanced robotic and teleoperation systems for the Department of Energy, Department of Defense, and NASA. Principle investigator on DARPA's Revolutionizing Prosthetics Program at ORNL in the area of advance actuation and was ORNL's senior engineer on DARPA's Exoskeleton Program. Holds 5 patents with 4 pending. Adjunct professor at the University of Tennessee. In present position, research emphasis at EPRI is in remote inspection vehicles for the electric power industry. Registered professional engineer; member IEEE and ANS.



**Miles Close** Program Manager, Environmental Group, PaR Systems, Inc., Shoreview, MN. BSME University of North Dakota, 1987. Business Development Manager, Central Research Laboratories, 2003-2010. In present position responsible for development and deployment of powered manipulators and integrated crane/manipulator systems for nuclear and hazardous remediation programs. Primary responsibility for PaR programs for Department of Energy and Department of Defense. Also responsible for research and development of new product lines to support the environmental, nuclear decommissioning and commercial nuclear power generation markets. Member of International Society of Pharmaceutical Engineering and Society of Nuclear Medicine.

## RRSD Welcomes New Members of the Executive Committee (cont.)



**Bruce Legge** Immediate Past President, Association for Unmanned Vehicle Systems International – Great Lakes Chapter; serve on the Board of Directors of the Michigan Homeland Security Consortium and the Ground Robotics Reliability Center at the University of Michigan. BS (1978), Mathematics, Illinois State University; MS (1993), Electrical Engineering, Naval Postgraduate School. 30-years supervisory/management experience working with the Military; 16 years on active duty with the US Navy as a Nuclear Submariner/Engineering Duty Officer and 14 years as a member of Industry supporting the US Army/US Marine Corps. Presently serve as Senior Manager, Business Development at iRobot Corporation working closely with the TACOM Life Cycle Management Command, U.S. Army Tank-Automotive Research, Development, and Engineering Center, U.S. Army and Marine Corps Robotics Systems Joint Project Office, and other professional National and Michigan organizations. Previously certified as a Naval Nuclear Propulsion Engineer and Master Training Specialist. ANS: Member since 2011.

## RRSD Executive Committee Officers

Chair: Reid Kress, Y-12 National Security Complex  
865-576-0461 [kressrl@y12.doe.gov](mailto:kressrl@y12.doe.gov)

Vice-Chair: James Tulenko, University of Florida  
352-219-3865 ext. 111 [tulenko@ufl.edu](mailto:tulenko@ufl.edu)

Secretary: Mark Noakes, Oak Ridge National Laboratory  
865-574-5695 [noakesmw@ornl.gov](mailto:noakesmw@ornl.gov)

Treasurer: Chris Eason, STÄUBLI Corporation  
864-486-5472 [c.eason@staubli.com](mailto:c.eason@staubli.com)

Ex-Officio Chair: Thomas Nance, Savannah River National Laboratory  
803-725-5842 [thomas.nance@srnl.doe.gov](mailto:thomas.nance@srnl.doe.gov)

## Executive Committee Members at Large

2013 Sean Peterson, (RRSD Newsletter Editor)  
Central Research Laboratories  
651-385-2141 [s.peterson@centres.com](mailto:s.peterson@centres.com)

2013 Mitch Pryor, (Webmaster)  
University of Texas at Austin  
512- 471-5182 [mpryor@mail.utexas.edu](mailto:mpryor@mail.utexas.edu)

2013 Duane Schmoker, (Honors & Awards Chair)  
URS  
509-943-8669 [Duane.Schmoker@urs.com](mailto:Duane.Schmoker@urs.com)

2014 Richard Minichan, (2013 Topical Chair)  
Savannah River National Laboratory  
803-725-2271 [richard.minichan@srnl.doe.gov](mailto:richard.minichan@srnl.doe.gov)

2014 Timothy McJunkin, (2012 Embedded Topical Chair)  
Idaho National Laboratory  
208-526-7895 [timothy.mcjunkin@inl.gov](mailto:timothy.mcjunkin@inl.gov)

2014 Jeffrey Coughlin, (Student Support Chair)  
Savannah River National Laboratory  
803-725-2885 [jeffrey.coughlin@srs.gov](mailto:jeffrey.coughlin@srs.gov)

2015 Miles A. Close  
PaR Systems, Inc.  
651-528-5263 [mclose@par.com](mailto:mclose@par.com)

2015 John Jansen  
Oak Ridge National Labs  
865-218-8166 [jjansen@epri.com](mailto:jjansen@epri.com)

2015 Bruce Legge  
iRobot  
781-850-5270 [blegge@irobot.com](mailto:blegge@irobot.com)