

# Candidate Information Template

**CANDIDATE NAME – Richard M. Voyles**

**POSITION SOUGHT – RAS AdCom**

## **BIOGRAPHY**

My career spans the key aspects of robotics and automation that are touched by RAS. I have worked in companies big and small, new and old, including established giants like IBM, mid-stage growth companies like Integrated Systems (acquired by Wind River, then Intel), small firms like Dart Controls, and several startups. I have worked in academe, holding tenured positions at the University of Minnesota, Computer Science and Engineering, University of Denver, Electrical and Computer Engineering, and Purdue University, Polytechnic Institute. And I have worked in government at the National Science Foundation (NSF), as lead Program Manager of the National Robotics Initiative (NRI) and co-founder of the Innovation Corps and at the White House Office of Science and Technology Policy (OSTP) as the Assistant Director of Robotics and Cyber-Physical Systems. I have extensive publications, a few patents, and a long history of building bridges within the RAS community. BSEE, Purdue, MSME, Stanford, PhD Robotics, CMU.

## **IEEE ACTIVITIES**

### **SECTIONS/CHAPTERS:**

Organized a panel for the Central Indiana Section (CIS-IEEE) Engineering Conference, 2017

### **STUDENT BRANCHES:**

Helped found the IEEE RAS Student Chapter at Purdue, including fund-raising and program development

### **SOCIETY:**

Technical Committee on Safety, Security and Rescue Robotics, Co-Chair

### **CONFERENCES:**

General Chair, IEEE Safety, Security and Rescue Robotics (SSRR) Symposium, 2009, 2015  
Program Co-Chair, IEEE Safety, Security and Rescue Robotics (SSRR) Symposium, 2008, 2010, 2011  
ICRA Conference Editorial Board, Editor, 2017-2019  
ICRA Conference Editorial Board, Associate Editor, 2014-2017  
ICRA, IROS Program Committees

### **OTHER:**

Associate Editor, IEEE Transactions on Automation Science and Engineering (T-ASE), 2013-2016

## **QUALIFICATIONS**

I have extensively served the local, national and international RAS community in many ways, mostly through collaborations with IEEE officials, rather than through explicit IEEE positions of my own. My service to the US National Science Foundation (NSF) often involved consultation with IEEE RAS elected officials both in the United States and internationally in coordinating multi-lateral funding programs (including Japan, South Korea and Europe) and research workshops (often at IEEE RAS conferences). My service to the White House Office of Science and Technology Policy under the Obama administration gave me a unique vantage point on national and international policy and the importance of the IEEE as an ally on such things as the Fukushima incident (during which I helped formulate robotics talking points and action items for the Obama/Abe summit) and the Ebola crisis (during which I helped organize technical workshops and international aid to Africa). I am excited by the opportunity to bring my enthusiasm for the RAS community to the service of the IEEE.

## **MAJOR ACCOMPLISHMENTS**

At NSF, as the founding Program Director of the U.S. multi-agency National Robotics Initiative (NRI), I established all procedures and policies for the coordinated proposal review of four federal agencies. The program was the first NSF program with “robotics” in the title in nearly 15 years and garnered nearly 800 proposals requesting an aggregate of over \$ 1 billion, US. As the lone Program Director, I was responsible for over 10% of all the proposals submitted to the CISE Directorate in FY12 that were processed on schedule with only one mishap. I subsequently argued for a second robotics Program Director to help run the program. I received one of three Director’s Awards that year for my work on the NRI.

At NSF, I was a co-founder of the NSF Innovation Corps, with Errol Arkilic. The Innovation Corps was a radically new approach to entrepreneurship education built on the “Lean Launchpad” of Steve Blank and others that was also announced by President Obama. The “I-Corps” approach to entrepreneurship is engineer-friendly in that it takes a hypothesis-based approach to the business plan, as opposed to the traditional business school approach. I received the second of three Director’s Awards for the I-Corps.

For OSTP, I helped develop robotics talking points for the Obama/Abe Summit in 2014 with DARPA Program Manager Gil Pratt (DARPA Robotics Challenge - DRC) and helped orchestrate a meeting between President Obama and the robot “Schaff,” which had won the preliminary challenge of the DRC and had been acquired by Google. These robotics talking points had a significant positive impact on the national robotics programs of both Japan and the United States. My experience in bridging international funding organizations may be beneficial to the RAS community.

For OSTP, I organized a national viewing of the documentary film “Underwater Dreams,” an inspiring film about a team of undocumented immigrants at an Arizona high school that won a NASA-sponsored underwater robotics contest and beat numerous college teams, including one from MIT. I teamed with the Society of Hispanic Professional Engineers (SHPE) to organize simultaneous viewing parties in nearly all fifty states, including the White House. Subsequently, I argued to have Oscar Vasquez, captain of the team, seated in Michele Obama’s box during the State of the Union address.

For IEEE-CIS, I organized a panel on robotics and IoT (internet of things) for the academic Engineering Conference in 2017. I composed a highly balanced and enlightening panel that included men, women, underrepresented minorities, senior faculty, junior faculty, national and international from a variety of institutions.

## **POSITION STATEMENT**

The Robotics and Automation Society continues to be the leading advocate for robotics and automation in the world and I plan to continue to build on that tradition as best I can. As conference costs spiral upward, I plan to offer a voice that strikes a balance between quality and accessibility in an era of increasingly competitive funding. In particular, it is vitally important to maintain affordable student member rates for conferences large and small. I also want to protect the value of the IEEE brand. Is IEEE co-sponsorship overused and should we be more selective to maintain the value of IEEE sponsorship? One way to address this is through increased involvement and visibility of the technical committees.

RAS engagement is another area of concern. How can we attract younger members to the RAS and more cutting-edge technology companies? It may be of particular value to get more junior “movers and shakers” engaged in leadership positions.

Finally, the recent efforts by RAS to counter the “bad press” robotics has gotten in the popular press on the topic of robots taking jobs is laudable. This is an important and positive issue for the society and as an Ad Com member, I hope to amplify our efforts in areas such as these by including members from across the spectrum of academic, government and industrial perspectives to take part. It is an exciting time for robotics and automation because of the technical advances and the positive image we have with the general public, the education sector, international governments, industrials and even the finance sector. It is well and good that we continue to leverage this by adding meaningful, quantifiable information to the discussion in a proactive way.

#### COMMITMENT TO SERVICE

I, Richard M. Voyles, hereby certify that if elected, I will serve in the position to which I am elected for the term of the office.