

2015 HUMAN SYSTEMS CONFERENCE

“HUMAN SYSTEMS: MAINTAINING OUR PHYSICAL EDGE, ENABLING OUR COGNITIVE EDGE”



Systems Interface
and Cognitive Processing

Social Cultural
Behavioral Understanding

Personnel Training and
Leadership Development

Protection Sustainment
and Physical Performance

FEBRUARY 10-11, 2015
HILTON ALEXANDRIA OLD TOWN
ALEXANDRIA, VA
EVENT #5350

WWW.NDIA.ORG/MEETINGS/5350

LOCATION

Hilton Alexandria Old Town
1767 King St.
Alexandria, VA 22314
(703) 837-0440

ATTIRE

Appropriate dress for the Conference is business casual for civilians and Class B uniform or uniform of the day for military personnel.

ID BADGE

During Conference registration and check-in, each Attendee will be issued an identification badge. Please be prepared to present a valid picture ID. Badges must be worn at all Conference functions.

CONTACTS

Christopher Nemeth, PhD

Chair, NDIA Human Systems Division;
Principal Scientist, Applied Research Associates
cnemeth@ara.com

Greg Zacharias, PhD

Deputy Chair, NDIA Human Systems Division; President, Charles River Analytics
gzacharias@cra.com

Dylan Schmorrow, PhD

Conference Chair, NDIA Human Systems Conference; Chief Scientist, Soar Technology, Inc.
dylan.schmorrow@soartech.com

CDR Joseph Cohn, USN, PhD

Principal Human Systems Advisor, NDIA Human Systems Conference; Deputy Director, Human Performance, Training and BioSystems Directorate, Office of the Assistant Secretary of Defense for Research and Engineering
joseph.v.cohn.mil@mail.mil

Ms. Molly Holt

Meeting Planner, NDIA
mholt@ndia.org
(703) 247-2572

TUESDAY, FEBRUARY 10, 2015

7:00 AM – 6:30 PM

Registration

Grand Ballroom Foyer

7:00 AM – 8:00 AM

Continental Breakfast

Grand Ballroom Foyer

8:00 AM – 8:15 AM

Welcome and Introductory Remarks

Grand Ballroom A/B

- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates
- ▶ MG Barry Bates, USA (Ret), Vice President, Operations, NDIA
- ▶ Dylan Schmorrow, PhD, Chief Scientist, Soar Technology, Inc.
- ▶ CDR Joseph Cohn, USN, PhD, Deputy Director, Human Performance, Training and BioSystems Directorate, Office of the Assistant Secretary of Defense for Research and Engineering

8:15 AM – 8:45 AM

HSI in DoD Requirements

Grand Ballroom A/B

- ▶ Mr. Richard Parker, SES, Director, Mission Command Capabilities Development and Integration Directorate (MC-CDIC)

8:45 AM – 9:30 AM

Keynote Address

Grand Ballroom A/B

- ▶ Mr. Al Shaffer, Principal Deputy Assistant Secretary of Defense for Research and Engineering

9:30 AM – 10:00 AM

Networking Break

Grand Ballroom Foyer

10:00 AM – 11:30 AM

Session 1: Systems Interface and Cognitive Processing (SICP)

Grand Ballroom A/B

Session Chairs

- ▶ Todd Nelson, PhD, Chief, Strategic Planning and Transformation Division, U.S. Air Force Research Laboratory
- ▶ Mr. Gary Gomez, Independent Consultant, Taylor Connor Associates, LLC

CEDARS: Combined Exploratory Data Analysis Recommender System

- ▶ Mark Livingston, PhD, Computer Scientist, U.S. Naval Research Laboratory

Using Physiological and Behavioral Information to Contextualize Cognitive State and Event Detection for Human-Autonomy Integration Systems

- ▶ Stephen Gordon, PhD, Electrical Engineer, DCS Corporation

Real-Time Operator Physiological Monitoring to Drive Human-Robot Interaction (HRI) Design

- ▶ Anna Skinner, PhD, Human Factors Program Manager, AnthroTronix, Inc.

11:30 AM – 12:50 PM

Session 2: Protection, Sustainment and Physical Performance (PSPP)

Grand Ballroom A/B

Session Chairs

- ▶ Mike LaFiandra, Sc.D, Chief, Dismounted Warrior Branch, U.S. Army Research Laboratory
- ▶ Mr. Jean Castonguay, President and CEO, CogniSens, Inc.

Integrated Cognitive and Physical Training to Optimize Human Performance and Discourage Post-Traumatic Stress and Suicide

- ▶ Mr. Paul Butler, Senior Modeling and Simulation Engineer, The MITRE Corporation

Smarter, Faster, Safer: Cognitive Enhancement Training to Improve Decision-Making Under Pressure

- ▶ Jocelyn Faubert, PhD, Chief Science Officer, CogniSens, Inc.

Ready for Anything: NeuroTracker, a Cutting-Edge Technology that Accelerates the Acquisition of Tactical Awareness, Attention and Decision-Making Skill Under Pressure

- ▶ Mr. Jean Castonguay, President and CEO, CogniSens, Inc.

Novel Application and Validation of an Optical Scoring System for Small Arms Human Performance, Research and Development

- ▶ Mr. Frank Morelli, Research Psychologist, U.S. Army Research Laboratory

Rapid Assessment of Clothing and Equipment Using Advanced Thermal Simulation to Lighten the Thermal Load

- ▶ Mr. John Elson, Graduate Research Assistant, Institute for Environmental Research, Kansas State University

12:50 PM – 1:45 PM

Networking Lunch

Grand Ballroom C

1:45 PM – 3:15 PM

Session 3: Personnel, Training and Leadership Development (PTLD)

Grand Ballroom A/B

Session Chairs

- ▶ Winston “Wink” Bennett, PhD, Technical Advisor, Continuous Learning and Performance Assessment Research, U.S. Air Force Research Laboratory
- ▶ Scott Grigsby, PhD, Senior Scientist, Ball Aerospace

Co-located vs. Distributed Teams: A Virtual Schoolhouse Experiment at Fleet Anti-Submarine Warfare Training Center

- ▶ Mrs. Helen Wright, Scientist, Naval Undersea Warfare Center

Cognition: Conation Partnership

- ▶ Mr. David Kolbe, Chief Executive Officer, Kolbe Corporation

Intelligent Tutoring for the Conning Officers Virtual Environment (COVE)

- ▶ Ms. Lauren Ogren, Human Systems Engineer, Naval Undersea Warfare Center

Human Phenotype Ontology

- ▶ Mr. Michael D. Matthews, Fellow, Strategic Studies Group, Office of the Chief of Staff of the Army

3:15 PM – 3:30 PM

Networking Break

Grand Ballroom Foyer

SPEAKER DONATION

In lieu of Speaker gifts, a donation will be made to the Fisher House Foundation. For additional information, please visit: <http://www.fisherhouse.org>

ADVERTISING

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PROCEEDINGS

Proceedings will be available on the web through the Defense Technical Information Center (DTIC) two weeks after the Conference. All registered Attendees will receive an email notification once the proceedings are available.

SURVEY

A survey will be e-mailed to you after the Conference. We would appreciate your time in completing the survey to help make our event even more successful in the future.

NDIA EVENTS

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Select:
Meetings & Events
Schedule of Events

3:30 PM – 5:00 PM

Session 4: Social, Cultural, Behavioral Understanding (SCBU)

Grand Ballroom A/B

Session Chairs

- ▶ Elizabeth Bowman, PhD, Operations Research Analyst, U.S. Army Research Laboratory
- ▶ Lisa Costa, PhD, Director, Counter Violent Extremism and Weapons of Mass Destruction, The MITRE Corporation

Social Security Sector Radar Capability

- ▶ Mrs. Asma Abuzaakouk, Social and Behavioral Scientist, The MITRE Corporation

Information and Conflict

- ▶ Rebecca Goolsby, PhD, Program Officer, Office of Naval Research

Applying Modeling and Simulation to Foreign Policy

- ▶ Corey Lofdahl, PhD, Senior Scientist, Charles River Analytics

Challenges in the Operational Use and Validation of Sociocultural Techniques, Tools, and Models

- ▶ Jonathan Pfautz, PhD, Senior Principal Scientist and Chief, Strategic S&T, Charles River Analytics

Cultural Knowledge Encoding

- ▶ Kaley Leetaru, PhD, Adjunct Faculty, Georgetown University
- ▶ Chris Rewerts, PhD, Research Engineer, U.S. Army Engineer Research & Development Center - Champaign

Convey Knowledge - Not Just Information

- ▶ Sae Schatz, PhD, Independent Researcher

5:00 PM – 6:30 PM

Poster Presentations and Networking Reception (CASH BAR)

Grand Ballroom Foyer

WEDNESDAY, FEBRUARY 11, 2015

7:00 AM – 5:00 PM

Registration

Grand Ballroom Foyer

7:00 AM – 8:00 AM

Continental Breakfast

Grand Ballroom Foyer

8:00 AM – 8:05 AM

Welcome and Introductory Remarks

Grand Ballroom A/B

- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates

8:05 AM – 8:35 AM

Plenary Address: Human Readiness Levels: Linking S&T to Acquisition

Grand Ballroom A/B

- ▶ Mica Endsley, PhD, Chief Scientist, U.S. Air Force

8:35 AM – 9:20 AM

Panel: Human Readiness Levels: Linking S&T to Acquisition

Grand Ballroom A/B

- ▶ Co-Moderator: BG Pete Palmer, USA (Ret), Director, EDGE[®] Innovation Network, General Dynamics Mission Systems
- ▶ Co-Moderator: Kelly Hale, PhD, Senior Vice President, Design Interactive, Inc.
- ▶ Mica Endsley, PhD, Chief Scientist, U.S. Air Force
- ▶ Mr. David Kolbe, Chief Executive Officer, Kolbe Corporation
- ▶ Greg Zacharias, PhD, Deputy Chair, NDIA Human Systems Division; President, Charles River Analytics
- ▶ Mr. Richard Parker, SES, Director, Mission Command Capabilities Development and Integration Directorate (MC-CDIC)
- ▶ CDR Joseph Cohn, USN, PhD, Deputy Director, Human Performance, Training and BioSystems Directorate, Office of the Assistant Secretary of Defense for Research and Engineering

9:20 AM – 9:45 AM

Networking Break

Grand Ballroom Foyer

9:45 AM – 11:15 AM

Session 5: Human Systems Integration (HSI) Metrics

Grand Ballroom A/B

Session Chairs

- ▶ Jen Rochlis Zumbado, PhD, Element Manager, Space Human Factors and Habitability, NASA
- ▶ Kay Stanney, PhD, C.H.F.P., President, Design Interactive, Inc.

Surveys in Operational Test & Evaluation

- ▶ Rebecca Grier, PhD, Research Staff Member, Institute for Defense Analyses

Optimizing Warfighter Performance through the Development of HSI Metrics, Requirements and Collaboration

- ▶ Pamela Savage-Knepshield, PhD, Chief, Human Factors Integration Division, U.S. Army Research Laboratory

Operationally Relevant Metrics for Analyst Test-Beds: Evaluating How Analysts Make Use of their Tools to Inform Tool Development, Integration and Adaptation

- ▶ Joshua Poore, PhD, Senior Experimental Psychologist, Draper Laboratory

A Heuristic-Based Framework for Assessing Operator Trust in Autonomous Systems

- ▶ Ms. Kimberly Jackson, Human Systems Engineer, Draper Laboratory

Methods and Metrics for Real-Time Task Performance Assessment in Crewed Spacecraft

- ▶ Kevin Duda, PhD, Senior Aerospace Human Factors Engineer, Draper Laboratory

11:15 AM – 12:30 PM

Networking Lunch

Grand Ballroom C

12:30 PM – 1:15 PM

Panel Discussion: Rising Issues in Human Systems (Government)

Grand Ballroom A/B

- ▶ Moderator: CDR Joseph Cohn, USN, PhD, Deputy Director, Human Performance, Training and BioSystems Directorate, Office of the Assistant Secretary of Defense for Research and Engineering
- ▶ Laurel Allender, PhD, Director, Human Resource and Engineering Directorate, U.S. Army Research Laboratory
- ▶ John Tangney, PhD, Director, Human and Bioengineered Systems Division, Office of Naval Research
- ▶ Jim Overholt, PhD, Acting Chief Scientist, Senior Scientist in Autonomous Systems, 711th Human Performance Wing, U.S. Air Force Research Laboratory
- ▶ Michelle Sams, PhD, Director, U.S. Army Research Institute for the Behavioral and Social Sciences

1:15 PM – 2:00 PM

Panel Discussion: Rising Issues in Human Systems (Industry)

Grand Ballroom A/B

- ▶ Moderator: Greg Zacharias, PhD, Deputy Chair, NDIA Human Systems Division; President, Charles River Analytics
- ▶ Mike Paley, PhD, CEO, Aptima
- ▶ Jonathan Pfautz, PhD, Senior Principal Scientist and Chief, Strategic S&T, Charles River Analytics
- ▶ Chris Miller, PhD, Chief Scientist, Smart Information Flow Technologies (SIFT)
- ▶ Kelly Hale, PhD, Senior Vice President, Design Interactive, Inc.
- ▶ Dylan Schmorow, PhD, Chief Scientist, Soar Technology, Inc.

2:00 PM – 2:30 PM

Roundtable Introductions

Grand Ballroom A/B

Each Roundtable Lead will briefly review their Roundtable's topic; we recommend you use this time to plan which tables you would like to visit ahead of the Session. Attendees will have approximately 35 minutes to visit (3) tables of their choice for a discussion on the subject matters listed below.

2:30 PM – 2:45 PM

Networking Break

Grand Ballroom Foyer

2:45 PM – 4:45 PM

Roundtable Discussions

Grand Ballroom C

- ▶ **Table 1:** "Human System Integration (HSI) Metrics"
- ▶ **Table 2:** "Systems Interface and Cognitive Processing (SICP)"
- ▶ **Table 3:** "Protection, Sustainment and Physical Performance (PSPP)"
- ▶ **Table 4:** "Human Social, Cultural Behavioral Understanding (SCBU)"
- ▶ **Table 5:** "Personnel, Training and Leadership Development (PTLD)"

4:45 PM – 5:00 PM

Conference Closing Remarks

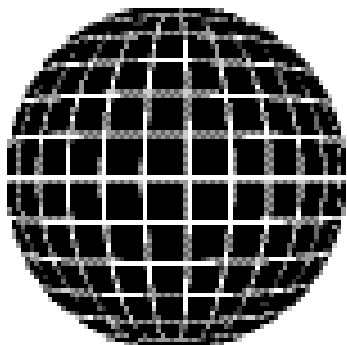
Grand Ballroom C

- ▶ Dylan Schmorow, PhD, Chief Scientist, Soar Technology, Inc.
- ▶ CDR Joseph Cohn, USN, PhD, Deputy Director, Human Performance, Training and BioSystems Directorate, Office of the Assistant Secretary of Defense for Research and Engineering
- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates

5:00 PM

Conference Adjourns

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Digital Reasoning provides an innovative approach to tackling the challenge of big data analytics. Over the past decade its software analytics platform, Synthesys®, has been used in government agencies to uncover security threats and enable intelligence analysts to find and act on critical relationships in big data. Synthesys® is designed to understand how humans communicate by analyzing the context, content and relationships within data while semantically revealing what's most critical to our clients. By reading information from any data source, resolving what's valuable and what's not, and by reasoning using a dynamic knowledge base, Digital Reasoning understands human communications, which enables any organization to answer tomorrow's questions, today.

Synthesys® takes unstructured, semi-structured and structured information as input and uses entity extraction with strong semantic relationship analysis to generate actionable information. This information (people, places, connections and actions) can then be used to understand and analyze what's important and determine what actions need to be taken in order to mitigate the risk or expand an opportunity. The platform does not rely upon predefined models to make sense of the data (i.e. exhaustive extraction or ontology-type models). Instead, it derives patterns and relationships from the data itself, saving considerable time and effort by circumventing the need to create new models for every new type of data or analytical problem.

Use Cases and Suggest Research Areas:

- Intelligence Analysis: Uncover entities, facts and relationships in massive quantities of data to help analysts provide actionable information to senior decision-makers. (ABI/OBP methodology standards used)
- Counterintelligence: Help protect the compromise and proliferation of classified information by analyzing a wide range of data sources in order to identify and prioritize threats. (ABI/OBP methodology standards used)
- Cyber Security: Identify, determine and prevent cyber attacks by analyzing social media and electronic communications to build profiles of suspected cyber terrorists that include biographical information, business and political affiliation, and networks of associates.
- Counter-terrorism: Quickly identify threats and connect the dots by linking important people, places, data and key facts associated with the threats – regardless of the underlying data type or data format.

DRS Point of Contact

Mr. John Kostak
Senior Director of Federal Marketing
john.kostak@digitalreasoning.com
(571) 232-7737

ATTENDEE ROSTER

as of February 3, 2015

Mrs. Asma Abuzaakouk
The MITRE Corporation

Dr. Laurel Allender
U.S. Army Research Laboratory

Ms. Samira Askarova
Vora Strategies Group Inc.

MG Barry Bates, USA (Ret)
NDIA

Dr. Beth Biddle
The Boeing Company

Mr. Christopher Boger
The Charles Stark Draper Laboratory, Inc.

Dr. Cheryl Bolstad
Design Interactive, Inc.

Mr. Jonathan Brown
AnthroTronix, Inc.

Dr. Nancy Browning
Applied Research Associates, Inc.

CDR Dale Burns, USN (Ret)
SAF/AQ

Mr. Tim Bush
U.S. Air Force

Mr. Paul Butler
The MITRE Corporation

Dr. Scott Carlson
711th Human Performance Wing

Col Larry Carr, USAF (Ret)
NTVI, Federal

Mr. Jean-Pierre Castonguay
Cognisens, Inc.

CDR Joseph Cohn, USN, PhD
OASD(R&E)

Dr. Lisa Costa
The MITRE Corporation

Mrs. Rachael D'Angelo
The Washington Language Center, LLC

Mr. Tanimu Deleon-Nwaha
General Dynamics Electric Boat

Dr. Kevin Duda
The Charles Stark Draper Laboratory, Inc.

Mr. Rob Eason
British Embassy

Dr. Steven Eckels
Kansas State University

Mr. John Elson
Kansas State University

Dr. Mica Endsley
U.S. Air Force

Lt Col Troy Faaborg, USAF
SAF/AQ

Ms. Jocelyn Faubert
Cognisens, Inc.

Dr. Dennis Folds
Georgia Tech Research Institute

Ms. Hannah Freeman
Strategic Analysis, Inc.

Dr. Jared Freeman
Aptima, Inc.

Mr. Gary Gomez
Taycon, LLC

Dr. Rebecca Goolsby
Office of Naval Research

Dr. Stephen Gordon
DCS Corporation

Dr. Irene Gregory
National Aeronautics and Space
Administration

Dr. Rebecca Grier
IDA

Mr. Jay Griffith
Janus Research Group, Inc.

Dr. Scott Grigsby
Ball Aerospace & Technologies Corp.

Dr. Kelly Hale
Design Interactive, Inc.

Dr. Holly Handley
Old Dominion University

Maj Dave Hardy, USAF (Ret)
U.S. Air Force Operational Test and
Evaluation Center

Maj Gen George Harrison, USAF (Ret)
Georgia Tech Research Institute

Ms. Cathie Hurley
DASA R&T

Ms. Kimberly Jackson
The Charles Stark Draper Laboratory, Inc.

Mr. Eric Jones
The Charles Stark Draper Laboratory, Inc.

Mr. Karl Kaufmann
Human Solutions, Inc.

Mr. Karl Kazarian
Lockheed Martin Corporation

Col Leo Kilgore, USMC (Ret)
Research and Engineering Development,
Inc.

Col Larry Kimm, USAF (Ret)
Georgia Tech Research Institute

Dr. Paula Kinnunen
Defence Command Finland

Dr. Bev Knapp
HQDA, DCS G-1

Mr. David Kolbe
Kolbe Corp.

Dr. David Kraus
Northrop Grumman Corporation

Dr. Mike LaFiandra
U.S. Army Research Laboratory

Dr. Kalel Leetaru
GDEL T

Ms. Bridget Little
General Dynamics Electric Boat

Dr. Mark Livingston
Naval Research Laboratory

Dr. Corey Lofdahl
Charles River Analytics, Inc.

Dr. Julie Marble
The Johns Hopkins University/Applied
Physics Lab

Dr. Joe McDonnell
Dynamic Animation Systems, Inc.

Ms. Jennifer McKneely
The Johns Hopkins University/Applied
Physics Lab

CAPT Stan Meyers, USN (Ret)
Sonalysts, Inc.

Mr. Frank Morelli
U.S. Army Research Laboratory

Col Bill Mueller, USAF

U.S. Air Force Life Cycle Management Center

Ms. Julie Naga

Booz Allen Hamilton

Dr. Todd Nelson

711th Human Performance Wing

Ms. Diane Nemec

The Johns Hopkins University/Applied Physics Lab

CAPT Chris Nemeth, USN (Ret)

Applied Research Associates, Inc.

Dr. Denise Nicholson

Soar Technology, Inc.

Ms. Lauren Ogren

Naval Undersea Warfare Center-Division Newport

Dr. Jeff Onken

Northrop Grumman Corporation

Dr. Jim Overholt

U.S. Air Force Research Laboratory

Dr. Mike Paley

Aptima, Inc.

BG Pete Palmer, USA (Ret)

General Dynamics C4 Systems

Mr. Richard Parker

MC-CDID

Dr. Sam Pascarella

In-Depth Engineering Corp

Mr. James Peddell

British Defence Staff

Dr. Jonathan Pfautz

Charles River Analytics, Inc.

Mr. Chris Plott

Alion MA & D

Dr. Joshua Poore

The Charles Stark Draper Laboratory, Inc.

Dr. Zahar Prasov

The Charles Stark Draper Laboratory, Inc.

Mr. Howard Reichel

In-Depth Engineering Corp

Dr. Chris Rewerts

U.S. Army Engineer Research & Development Center

Dr. Donna Rhodes

Massachusetts Institute of Technology

Mr. David Rickert

Sonalysts, Inc.

Dr. Bill Rouse

Stevens Institute of Technology

Dr. Bart Russell

Lockheed Martin Corporation

Dr. George Salazar

NASA Lyndon B. Johnson Space Center

Dr. Michelle Sams

U.S. Army Research Institute for the Behavioral and Social Sciences

Dr. Pamela Savage-Kenpshield

U.S. Army Research Laboratory

Dr. Sae Schatz

On Sabbatical

Dr. Dylan Schmorow

Soar Technology, Inc.

Mr. Tony Schwenn

ThermoAnalytics, Inc.

Dr. Ron Scott

Raytheon BBN Technologies

Mr. Al Shaffer

DASD(R&E)

Dr. Anna Skinner

AnthroTronix, Inc.

Dr. Reggie Smith

Janus Research Group, Inc.

Ms. Laura Stuart

Joint Warfare Analysis Center (JWAC)

Dr. John Tangney

Office of Naval Research

Mr. Mingwei Tay

Singapore Embassy, Defense Technology Office,

Ms. Stephanie Taylor

Research and Engineering Development, Inc.

Mr. Dan Traviglia

The Charles Stark Draper Laboratory, Inc.

Dr. Michael Van Lent

Soar Technology, Inc.

Mr. Maris Vikmanis

U.S. Air Force Research Laboratory

Mr. John Watts

Noetic Corporation

Ms. Katherine Weaver

Joint Warfare Analysis Center (JWAC)

Mr. Stephen Whitlow

Honeywell

LTC Nathan Wiedenman, USA (Ret)

The Charles Stark Draper Laboratory, Inc.

Mr. Gerald Woodill

Canadian Embassy

Ms. Helen Wright

Naval Undersea Warfare Center-Division Newport

Dr. Greg Zacharias

Charles River Analytics, Inc.

CAPT Stephen Zavadil, USN (Ret)

Systems Planning & Analysis

Dr. Jen Rochlis Zumbado

NASA Lyndon B. Johnson Space Center



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**NATIONAL DEFENSE INDUSTRIAL
ASSOCIATION**

2111 WILSON BOULEVARD, SUITE 400

ARLINGTON, VA 22201-3061

(703) 522-1820

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