## Monday, November 9

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 a.m.–11:05 a.m.</td>
<td>Welcome to the 2020 CMU SEI Research Review from the SEI Director</td>
<td>Dr. Paul Nielsen</td>
</tr>
<tr>
<td>11:05 a.m.–11:10 a.m.</td>
<td>Welcome to the 2020 CMU SEI Research Review from the CMU Vice-President of Research</td>
<td>Dr. J. Michael McQuade</td>
</tr>
<tr>
<td>11:10 a.m.–11:25 a.m.</td>
<td>Realizing Algorithmic and Computational Advantage Including the Need for an AI Engineering Discipline</td>
<td>Dr. Matt Gaston</td>
</tr>
<tr>
<td>11:25 a.m.–11:35 a.m.</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:35 a.m.–12:20 p.m.</td>
<td>Advancing AI Engineering for Defense and National Security</td>
<td>Moderator: Dr. Matt Gaston Panel: Lieutenant General Michael S. Groen, Dr. Mary “Missy” Cummings, and Dr. John Beieler</td>
</tr>
<tr>
<td>12:20 p.m.–12:35 p.m.</td>
<td>Break</td>
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<tr>
<td>12:35 p.m.–12:40 p.m.</td>
<td>Introduction to Presentations</td>
<td>Dr. Matt Gaston</td>
</tr>
<tr>
<td>12:40 p.m.–1:10 p.m.</td>
<td>Train but Verify: Towards Practical AI Robustness</td>
<td>Dr. Nathan VanHoudnos Q&amp;A: Ms. Tanisha Smith and Mr. Jon Helland</td>
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<tr>
<td>1:10 p.m.–1:40 p.m.</td>
<td>Investigating Techniques for Summarizing and Searching Video</td>
<td>Mr. Edwin Morris and Mr. Adam Harley</td>
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<tr>
<td>1:40 p.m.–1:45 p.m.</td>
<td>Break</td>
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<tr>
<td>1:45 p.m.–2:15 p.m.</td>
<td>Ethics in AI Engineering</td>
<td>Ms. Carol Smith Q&amp;A moderator: Ms. Alex Van Deusen</td>
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<tr>
<td>2:15 p.m.–2:25 p.m.</td>
<td>Knowing When You Don’t Know: Engineering AI Systems in an Uncertain World</td>
<td>Dr. Eric Heim</td>
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<tr>
<td>2:25 p.m.–2:30 p.m.</td>
<td>Break</td>
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<tr>
<td>2:30 p.m.–3:10 p.m.</td>
<td>Topics in Advanced Computing: The Promise and Challenges of Recommendation Systems for the DoD</td>
<td>Dr. John Wohlbier Q&amp;A: Dr. Wohlbier and Dr. Scott McMillan</td>
</tr>
<tr>
<td>3:10 p.m.–3:15 p.m.</td>
<td>Break</td>
<td></td>
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<tr>
<td>3:15 p.m.–3:25 p.m.</td>
<td>Bringing it all Together</td>
<td>Dr. Thomas Longstaff, Chief Technology Officer</td>
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</tbody>
</table>

Topics, speakers, and schedule are subject to change.

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### Topics, speakers, and schedule are subject to change.

**3:25 p.m.–3:30 p.m.**  
**BREAK TO TRANSITION TO POSTER ROOMS**

**3:30 p.m.–4:00 p.m.**  
**Concurrent Sessions: Four Poster Presentations and Discussions**

<table>
<thead>
<tr>
<th>Poster Title</th>
<th>Speaker</th>
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</thead>
<tbody>
<tr>
<td>Poster: Characterizing and Detecting Mismatch in ML-Enabled Systems</td>
<td>Dr. Grace A. Lewis</td>
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<tr>
<td>Poster: Improving Human Decision Making with AI Decision Support Systems</td>
<td>Mr. Rotem Guttman</td>
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<tr>
<td>Poster: Quantum Advantage Evaluation Framework</td>
<td>Dr. Jason Larkin</td>
</tr>
<tr>
<td>Poster: Spiral/AIML: Resource-Constrained Co-Optimization for High-Performance, Data-Intensive Computing</td>
<td>Dr. Scott McMillan</td>
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**TUESDAY, NOVEMBER 10**

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<tr>
<th>Time</th>
<th>Session Description</th>
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<tbody>
<tr>
<td>11:00 a.m.–11:05 a.m.</td>
<td>Welcome</td>
<td>Dr. Thomas Longstaff</td>
</tr>
<tr>
<td>11:05 a.m.–11:15 a.m.</td>
<td>Engagement in all Facets of Cyberspace and Cyber-enabled Systems Essential to Mount an Effective Response</td>
<td>Mr. Roman Danyliw</td>
</tr>
<tr>
<td>11:15 a.m.–12:15 p.m.</td>
<td>Advancing Cyber Operator Tradecraft through Automated Static Binary Analysis: Program Reachability for Vulnerability and Malware Analysis</td>
<td>Dr. Edward Schwartz and Mr. Cory Cohen, Q&amp;A moderator: Mr. Jeffrey Gennari</td>
</tr>
<tr>
<td>12:15 p.m.–12:30 p.m.</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>12:30 p.m.–12:35 p.m.</td>
<td>Framing: Combining Automated Code Repair for Memory Safety and Static Code Analysis Systems</td>
<td>Mr. Robert Schiela</td>
</tr>
<tr>
<td>12:35 p.m.–12:55 p.m.</td>
<td>Automated Code Repair for Memory Safety</td>
<td>Dr. Will Klieber</td>
</tr>
<tr>
<td>12:55 p.m.–1:15 p.m.</td>
<td>Static Code Analysis Classification</td>
<td>Dr. Lori Flynn</td>
</tr>
<tr>
<td>1:15 p.m.–1:20 p.m.</td>
<td>Combining Automated Code Repair for Memory Safety and Static Code Analysis Systems</td>
<td>Dr. Lori Flynn</td>
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<tr>
<td>1:20 p.m.–1:30 p.m.</td>
<td>Q&amp;A: Combining Automated Code Repair for Memory Safety and Static Code Analysis Systems</td>
<td>Dr. Lori Flynn, Dr. Will Klieber, and Mr. Robert Schiela</td>
</tr>
<tr>
<td>1:30 p.m.–1:35 p.m.</td>
<td>Break</td>
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<tr>
<td>1:35 p.m.–1:40 p.m.</td>
<td>Framing: Implementing Cyber Security</td>
<td>Mr. Roman Danyliw</td>
</tr>
<tr>
<td>1:40 p.m.–2:40 p.m.</td>
<td>Implementing Cyber Security in DoD Supply Chains</td>
<td>Moderator: Dr. William Claycomb Panel: Mr. Joe Bradley, Mr. Dan Costa (chat moderator), Mr. Matthew Butkovic, Dr. Mark Sherman, Dr. Carol Woody, and Dr. Kenneth Mai</td>
</tr>
<tr>
<td>2:40 p.m.–2:45 p.m.</td>
<td>Break</td>
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<tr>
<td>2:45 p.m.–3:10 p.m.</td>
<td>Toward the Use of Human-Machine Teaming and Fully Autonomous Operations</td>
<td>Mr. Jeffrey Mattson</td>
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<tr>
<td>3:10 p.m.–3:25 p.m.</td>
<td>AIDE: Artificial Intelligence Defense Evaluation</td>
<td>Dr. Shing-hon Lau and Dr. Grant Deffenbaugh</td>
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<tr>
<td>3:25 p.m.–3:45 p.m.</td>
<td>About the President’s Cup Competition</td>
<td>Mr. Matt Kaar</td>
</tr>
<tr>
<td>3:45 p.m.–3:55 p.m.</td>
<td>Bringing it all Together</td>
<td>Dr. Thomas Longstaff</td>
</tr>
<tr>
<td>3:55 p.m.–4:00 p.m.</td>
<td>Closing</td>
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<td>11:05 a.m.–11:25 a.m.</td>
<td>Enabling DoD to Produce Systems that are Agile and Responsive to its Missions</td>
<td>Dr. Jeff Boleng</td>
</tr>
<tr>
<td>11:25 a.m.–11:30 a.m.</td>
<td>Break</td>
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</table>
| 11:30 a.m.–12:35 p.m. | Software Engineering's Grand Challenges: Voices from Visionaries       | Moderator: Ms. Anita Carleton  
Panel: Mr. Tim Dare, Dr. J. Michael McQuade, Dr. Deborah Fincke,  
Dr. Vint Cerf, Mr. Nand Mulchandani,  
Mr. John Robert (chat moderator), Dr. William Scherlis, Mr. Jeff Dexter, and  
Ms. Sara Manning Dawson |
| 12:35 p.m.–12:50 p.m. | Break                                                                   |                                                                           |
| 12:50 p.m.–12:55 p.m. | Framing                                                                 | Dr. Ipek Ozkaya                                                           |
| 12:55 p.m.–1:15 p.m. | Untangling the Knot: Enabling Rapid Software Evolution                 | Mr. James Ivers                                                           |
| 1:15 p.m.–1:35 p.m. | TwinOps—Digital Twins meet DevOps                                       | Dr. Jerome Hugues                                                         |
| 1:35 p.m.–1:55 p.m. | Q&A: TwinOps and Untangling the Knot                                    | Dr. Ipek Ozkaya, Dr. Jerome Hugues, and Mr. James Ivers                   |
| 1:55 p.m.–2:00 p.m. | Break                                                                   |                                                                           |
| 2:00 p.m.–2:25 p.m. | Model Based Engineering with AADL: Transitioning Research to Practice  | Dr. Sam Procter                                                           |
| 2:25 p.m.–2:40 p.m. | Q&A: Model Based Engineering with AADL: Transitioning Research to Practice | Dr. Ipek Ozkaya, Dr. Sam Procter, and Dr. Jerome Hugues                   |
| 2:40 p.m.–2:55 p.m. | Bringing it all Together                                                | Dr. Thomas Longstaff                                                      |
| 2:55 p.m.–3:00 p.m. | BREAK TO TRANSITION TO POSTER ROOMS                                    |                                                                           |
| 3:00 p.m.–3:30 p.m. | Concurrent Sessions: Four Poster Presentations and Discussions          |                                                                           |
|                  | Poster: High-Assurance Software-Defined IoT Security                   | Mr. Sebastian Echeverria                                                   |
|                  | Poster: Investigating the Feasibility of an Integrated Causal Model for Software Cost Control | Dr. William Nichols and  
Dr. Michael Konrad                                                          |
|                  | Poster: Multicore Confidence                                           | Dr. Bjorn Andersson                                                       |
|                  | Poster: Rapid Certification of Trust                                    | Dr. Dionisio de Niz                                                       |

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### FRIDAY, NOVEMBER 13

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<th>Speaker</th>
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<tr>
<td>11:00 a.m. - 11:05 a.m.</td>
<td>Welcome</td>
<td>Dr. Thomas Longstaff</td>
</tr>
<tr>
<td>11:05 a.m. - 11:25 a.m.</td>
<td>Integrating CI/CD Processes Across the Acquisition Lifecycle</td>
<td>Ms. Eileen Wrubel</td>
</tr>
<tr>
<td>11:25 a.m. - 11:30 a.m.</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:30 a.m. - 12:15 p.m.</td>
<td>Software Research in Action: Multidisciplinary Work Supporting a Paradigm Shift in DoD Acquisition</td>
<td>Moderator: Dr. Forrest Shull, Panel: Ms. Linda Parker Gates, Mr. Sean Brady, Dr. Amy Henninger, and Mr. Shane Ficorilli</td>
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<tr>
<td>12:15 p.m. - 12:30 p.m.</td>
<td>Break</td>
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<td>12:30 p.m. - 12:35 p.m.</td>
<td>Framing</td>
<td>Ms. Eileen Wrubel</td>
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<tr>
<td>12:35 p.m. - 12:55 p.m.</td>
<td>Rapid Adjudication of Static Analysis Alerts During Continuous Integration</td>
<td>Dr. Lori Flynn</td>
</tr>
<tr>
<td>12:55 p.m. - 1:15 p.m.</td>
<td>Automated Design Conformance During Continuous Integration</td>
<td>Dr. Rod Nord</td>
</tr>
<tr>
<td>1:15 p.m. - 1:35 p.m.</td>
<td>Q&amp;A: Discussion with Researchers in Rapid Adjudication of Static Analysis Alerts and Automated Design Conformance</td>
<td>Mr. Hasan Yasar, Dr. Lori Flynn, and Dr. Rod Nord</td>
</tr>
<tr>
<td>1:35 p.m. - 1:40 p.m.</td>
<td>Break</td>
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<tr>
<td>1:40 p.m. - 2:20 p.m.</td>
<td>Modernization for Rapid Delivery of Enhanced Capability/Reduction of Sustainment Costs</td>
<td>Moderator: Ms. Suzanne M. Miller, Panel: Ms. Brigid O’Hearn and Mr. Stephen Falcone</td>
</tr>
<tr>
<td>2:20 p.m. - 2:25 p.m.</td>
<td>Break</td>
<td></td>
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<tr>
<td>2:25 p.m. - 3:05 p.m.</td>
<td>CMU SEI Agile Virtual Schoolhouse</td>
<td>Ms. Suzanne Miller and Mr. Will Hayes</td>
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<td>3:05 p.m. - 3:10 p.m.</td>
<td>Break</td>
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<td>3:10 p.m. - 3:20 p.m.</td>
<td>Bringing it all Together</td>
<td>Dr. Thomas Longstaff</td>
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**How to Get Help**

Send e-mail to research-review@sei.cmu.edu, and one of our team members will be in contact with you as soon as possible.