

# Fall 2019 CAC IAB Meeting

## Directors Report

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**Center Directors:** Salim Hariri, University of Arizona  
Alan Sill, Texas Tech University

**Site Directors:** Ali Akoglu, University of Arizona  
Yong Chen, Texas Tech University  
Jesus Pacheco, Universidad de Sonora

**Affiliate Site Directors:** Ravi Vadapalli, University of North Texas  
Sherif Abdelwahed, Virginia Commonwealth U.



Cloud and Autonomic Computing  
Center  
Semi Annual IAB Meeting, Oct. 22-23,  
2018



# Outline

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- **Introduction and Plans for This Meeting**
  - **Center Status**
    - Goals, motivations, and challenges
    - Center current primary and affiliate sites
    - IAB actions in Spring meeting
  - **Site Management and Research Program**
    - Site status and finances
    - Current research topics
  - **Overall Center-wide Plans**
    - Research future directions
    - Output, conferences and related activities
  - **Use of L.I.F.E. forms for voting**
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# Introduction and Plans For This Meeting

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- **Today (April 5) - Morning**
  - This directors report
  - NSF introduction and program news
  - Keynote: “ADAS Vehicles & the Repair Community” by Michael Quinn (AirPro Diagnostics)
  - Reports on ongoing/closing projects
- **Afternoon:**
  - New project proposals
  - Affiliate site update
- **Evening:**
  - Dinner provided including student poster session

# Plans For This Meeting (cont'd)

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- **Tomorrow (Friday April 5) – Morning:**
  - L.I.F.E. feedback comments review
  - Project review and approval
  - Project adjustment (if needed)
  - Business meeting (IAB members, committed prospective members, NSF and researchers only)
  - Closed session (IAB and NSF)
  - Final session:
    - Wrap-up and final feedback
    - Set dates for next meeting
    - End of meeting with lunch provided

# Goals Of This Meeting

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***Please consult the agenda for details and order.***

- ❑ The policy of the CAC is to plan annual budgets for its projects, approving new proposals mostly during Spring meetings, and to use the Fall meeting primarily to report on and carry out any needed mid-course corrections.
- ❑ This meeting is principally devoted to
  - New 2019 projects
  - Ongoing 2018 projects updates
  - Closeout reports from non-ongoing 2018 projects
- ❑ L.I.F.E. forms will be used for project feedback.

# Goals, Motivations, & Challenges

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## ■ CAC Center Goals

- Create a center of excellence in cloud and autonomic computing research by fostering collaborative partnerships among industry, academia, and government
- Build autonomic and cloud management tools to enable businesses and people to use these systems effectively

## ■ Motivations

- To overcome limitations such as:
  - Manually intensive and reactive ad-hoc management techniques
  - Insufficient or poorly designed or integrated security
  - Improper design of interfaces and standards
  - Insufficient adoption of state-of-the-art techniques
- To facilitate integration of storage, networking, & autonomic computing

## ■ Challenges

- Many times we are discussing things well before market awareness!
- Companies come and go rapidly – need consistent research directions

# Site Management/Research Program

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- **Center Co-Directors (Alan Sill and Salim Hariri)**
  - Manage overall industry and NSF relations
  - Set tone and communicate between sites
- **Site Directors**
  - Allow site research programs to be managed locally
  - Facilitate reporting to NSF and communication with researchers
  - See title page for current site directors and institutions
- **Research Program**
  - Projects controlled and led by project team leaders (faculty)
  - Report to site and center directors and liaison with industry contacts
  - Direct management of student efforts
  - Principally responsible for carrying out the research programs
  - Most of the money for the center goes directly to these projects

# CAC Research Topics

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- **Basic themes are**
  - Cloud and data center automation testing, analytics, and control
  - Artificial intelligence and machine learning for cybersecurity
  - Population health analytics, including related applications of clouds
  - Security in various settings, including Big Data, distributed devices, AI-assisted methods, modeling, and social media user communities
  - Distributed control for cyber-physical systems management
- **Project reports to be provided at this meeting**
- **We continue to orient projects where possible to benefit from cross-site stimulation and information exchange**
- **Future topic areas emerging from the existing program will also be presented**
- **Please see program for details**



# Center Finances – 2018

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- In 2018 Spring IAB: goal set as at least \$350K for CY 2018 from the two main Center sites. This will help the center to move to Phase II.
- Most recent year income: \$244,771k (U of A); \$130,000 (TTU) = \$374,771 total.
  - Note UoA's grant year runs Aug-July and TTU's is April-March
  - TTU preparing Phase II which will require \$200K/year (achieved for 2019) and 4 distinct memberships (in progress)
- Projects within delivering planned results.
- Also have expressions of interest and membership recruitment activities from several affiliate sites.

# Center Finances – 2018

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- **IAB approved budgets for eight total projects totaling \$182,744 at Spring 2018 meeting**
  - Allocated newly received amounts to that date for U of A and TTU
  - Allocated amounts left over from closed project commitments and previously unexpended member funds
  - Approved continuation of some previously unfinished projects
- **Center totals on track overall**
  - U of A Phase II to date (Phase II)
  - TTU Phase I to date (phase I)
- **Nothing new yet from affiliate sites**
  - But work is in progress

# Center Finances – 2018 (cont'd)

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- NSF grant amounts for CY 2018: \$160K (\$100K at U. Arizona and \$60K at Texas Tech) for admin. expenses
- TTU is in final year of Phase I
  - No-cost extension for use of main grant funds approved by NSF
  - Site is healthy and such an extension should not be a problem
- VCU submitted a proposal for a planning grant (\$15K) to NSF, w/ members lined up to pursue a full site.
- Overall, CAC program is quite healthy & well funded
- Focus on making progress with available funds

# IAB Actions in Fall 2018

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Adopted by votes at IAB business meeting 2018-04-22 (Tucson) and email communication shortly thereafter:

- ❑ Election of Chair and Vice Chair for 2019
- ❑ Selection of location and dates for Spring IAB meeting (this meeting)
- ❑ Discussion of rules for affiliate sites

# Primary and Affiliate Site Status

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- **U of Arizona and Texas Tech are full NSF-funded sites**
  - TTU: Phase I site in 5<sup>th</sup> of 5 years; Phase II proposal planned
  - UoA: Phase II site just completing 2<sup>nd</sup> of 5 years
  - Universidad de Sonora (recent addition, official as of January 2019)
- **Affiliate sites:**
  - University of North Texas – (approved by IAB Fall 2018): planning to submit a full site proposal June 2019
  - Virginia Commonwealth University (approved by IAB Fall 2018)
  - University of Colorado Denver – on hold
- **Progress on draft MoU to govern affiliate sites**
  - Projects controlled by project team leaders just as in full sites
  - Affiliate sites are each affiliated with a full center site
  - Affiliate sites each have a site local director for coordination
  - Subcontract used to conform to NSF and university rules
  - Explicit MoU agreement to minimize F&A overhead duplication

# Outputs and Dissemination Plans

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- **The CAC has always led, participated in, and sponsored many outside conferences and events**
  - International Conference on Cloud and Autonomic Computing
  - Utility and Cloud Computing (UCC) and co-located Big Data Computing and Technology co-located with UCC
  - Other conferences and workshops as appropriate
  
- **2018 Events:**
  - ICAC 2018, September 3-7, 2018, Trento, Italy:  
*<http://autonomic-conference.org>*
  - UCC/BDCAT 2018, December 17-20, 2018, Zurich, Switzerland:  
*<http://ucc-conference.org> and <http://bdcat-conference.org>*
  - DAAC 2018, Nov. 18, 2018, Dallas, Texas: (Approved for SC19 also!)  
*<http://daac-workshop.org>*
  - *Opportunities for member visibility/sponsorship at these events!*

# Conclusions

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We have planned an active, full meeting that we hope will provide extensive information on CAC activities to current and prospective members.

Past progress, current project results, and future options and directions will be presented in a way that we hope will stimulate further discussion on additional projects and progress.