NASCIO

Representing Chief Information
Officers of the States

State IT Workforce:
Facing Reality with Innovation

2015 President's Initiative

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Officers of the States

About the National Association of State Chief Information Officers

Founded in 1969, the National Association of State Chief Information Officers (NASCIO) represents state chief information officers (CIOs) and information technology (IT) executives and managers from the states, territories and District of Columbia. NASCIO's mission is to foster government excellence through quality business practices, information management and technology policy. NASCIO provides state CIOs and state members with products and services designed to support the challenging role of the state CIO, stimulate the exchange of information and promote the adoption of IT best practices and innovations. From national conferences to peer networking, research and publications, briefings and government affairs, NASCIO is the premier network and resource for state CIOs. For more information, visit www.NASCIO.org.

Executive Summary

The predicted shortage in the state information technology (IT) workforce has been discussed and debated for over a decade and states have been confronted with numerous challenges when it comes to the changing dynamics in the IT workforce. Additionally, balancing tight state budgets and finding strategies for savings remains paramount to state CIOs. Examining the current and future IT workforce is essential to this strategy.

According to the National Association of State Budget Officers (@NASBO), "state budgets continue to improve at a moderate pace after several years of slow recovery in the national economy." However, although states have recovered from the recession of 2008, tight budgets have also created obstacles for recruiting and retaining the most talented IT personnel.

A major concern for state CIOs continues to be the significant number of state IT employees who are eligible for retirement or have been eligible, but postponed retirement due to the economic downturn. In spite of this, there is evidence that the economy is recovering and some states are experiencing record numbers of retirement. For example, late summer/early fall 2014, California saw a sharp uptick in state-pension applications, rising as much as 64 percent in August 2014.[i] One possible explanation for this could be that, after several years of pay freezes, state workers are now seeing percentage increases and taking advantage of the high three policy. Even still, many states continue to experience hiring freezes and lack of salary increases—all of which have exacerbated the situation.

Whether or not states are experiencing retirement postponement or record retirement, it is clear that CIOs are concerned about the state of their workforce. In fact, for the first time in several years, "human resources/talent management" made NASCIO's "*Top Ten*"[ii] list for 2015—a compilation of top priorities for state CIOs.

As more baby boomers reach retirement status, knowledge management and succession planning have become critical for state CIOs to consider. At the same time, recruiting and retaining younger employees pose unique challenges and opportunities for states to align new priorities.

The National Association of State Personnel Executives (@NASPEStateHR) identified "workforce of the future" as their top issue in 2015, asking the following questions:

> *What are the future workforce trends and how will jobs change? Which occupational areas will change most and how do you prepare for that? As an example, in Information Technology, will states be looking for more contract managers than application developers?*

If states move to more cloud-based or compute-on-demand structures, what will the new workforce look like? What skill sets will be most important to employers, particularly in the public sector, over the next 10 years?

Likewise, as cybersecurity continues to be the most pressing issue for CIOs, there is a real challenge to recruit and retain cyber professionals with the skill sets needed for effective cybersecurity protection. Growth in cyber managed services, for example, is also skyrocketing as outsourcing has become more accepted. [iii]

Further solidifying this trend, in the NASCIO 2014 state CIO survey, *Charting the Course*, [iv] when asked how state CIO organizations plan to deliver or obtain IT services over the next three years, "expand outsourcing," "outsource business applications through a SaaS model," and "expand existing IT shared services model" were all ranked highly.

How does your state CIO organization plan to deliver or obtain IT services over the next three years?

| Service model	Percentage
Maintain the status quo	~18%
Build new data centers	~4%
Downsize state-owned-and-operated data center(s)	~41%
Introduce outsourcing as a new service model	~11%
Expand outsourcing	~45%
Introduce a managed services model	~17%
Expand existing managed services model	~46%
Introduce an IT shared services model	~17%
Expand existing IT shared services model	~56%
Outsource business applications through a SaaS model	~47%
Increase state IT staff	~8%

from the NASCIO 2014 CIO Survey

Simply put, times, they are a changing.

NASCIO has studied the issue of IT workforce for several years and released reports in 2007 and 2011 on the topic. Building upon these previous surveys and reports, the goal of this study is to gain insight into the current landscape and survey innovative techniques that states use to recruit both entry level and highly skilled personnel.

Detailed survey responses and information are contained within this report and the key highlights are:

- Nearly 92% of states say salary rates and pay grade structures present a challenge in attracting and retaining IT talent.

- 86% of states are having difficulty recruiting new employees to fill vacant IT positions.

- 46% of states report that it is taking 3-5 months to fill senior level IT positions.

- A shortage of qualified candidates for state IT positions is hindering 66% of states from achieving strategic IT initiatives.

- Security is the skill that presents the greatest challenge in attracting and retaining IT employees.
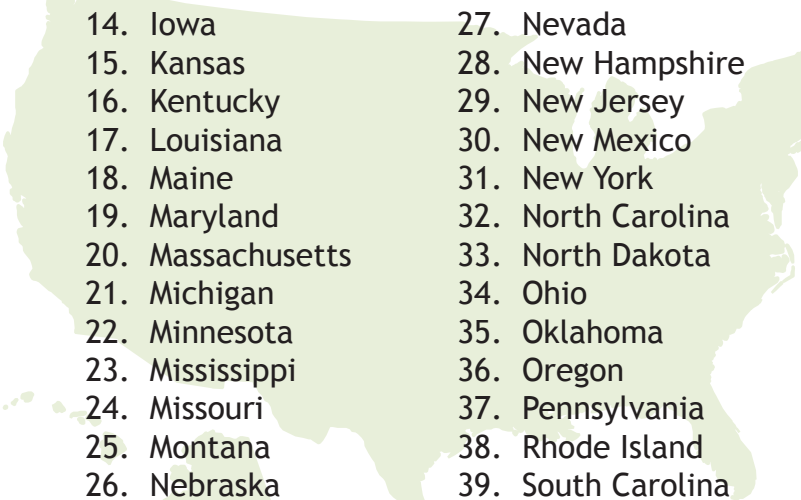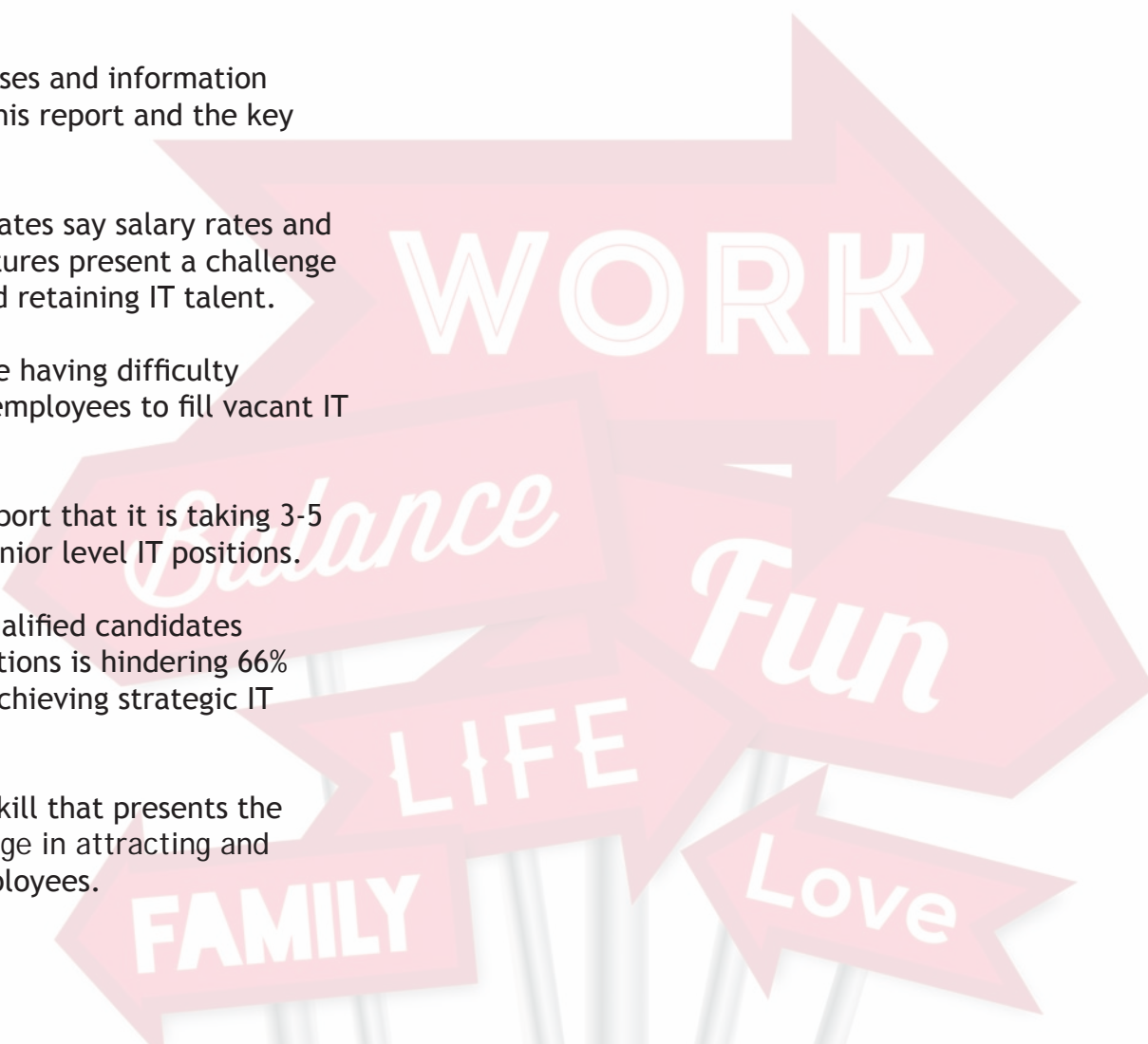
Survey Participants

Forty-nine states and territories responded to the survey that was in the field in January and February 2015. Because of the extraordinary response rate, participation included a wide distribution in geography, population, and budget.

The survey respondents are listed below in alphabetical order:

1. Alabama
2. Alaska
3. Arizona
4. California
5. Colorado
6. Connecticut
7. Delaware
8. Florida
9. Georgia
10. Hawaii
11. Idaho
12. Illinois
13. Indiana
14. Iowa
15. Kansas
16. Kentucky
17. Louisiana
18. Maine
19. Maryland
20. Massachusetts
21. Michigan
22. Minnesota
23. Mississippi
24. Missouri
25. Montana
26. Nebraska
27. Nevada
28. New Hampshire
29. New Jersey
30. New Mexico
31. New York
32. North Carolina
33. North Dakota
34. Ohio
35. Oklahoma
36. Oregon
37. Pennsylvania
38. Rhode Island
39. South Carolina
40. South Dakota
41. Tennessee
42. Texas
43. USVI
44. Utah
45. Virginia
46. Washington
47. West Virginia
48. Wisconsin
49. Wyoming

Assessment of Current State IT Workforce

Baseline demographic data on employee size and other characteristics of respondents can be found in Appendix I, so let's start by looking at the current landscape in the IT workforce. When asked about an increase or decrease in the number of IT staff in the next year, respondents were virtually equally divided: 35.3% said increase, 33.3% said decrease and 31.4% said no change. For those who responded "increase," most (84.2%) cited an increase of 1-3%. The same low differential holds true for those who responded "decrease:" 61% said the decrease would be by 1-3% (fig. 1). What is interesting is the reasoning given for those who cited that they would see a decrease. While "attrition with no backfill" and "service optimization" were popular choices, "all of the above" also got one third of respondent votes.

What these responses make clear is that states are facing myriad challenges and the spread of answers to the next question solidifies the argument. Participants were asked what state personnel action has created the greatest challenge to their ability to develop, support and maintain IT services for state government (fig. 2). While elimination of vacant positions (17.6%), lack of funds for training (15.7%) and hiring freezes (13.7%) were the top 3 answers given among the choices provided, respondents also chose "other" overwhelmingly. Many reasons were given in this open ended manner, with the most frequent being the inability to offer competitive salaries and civil service regulatory rules. When asked about the state's civil service system affecting the ability to acquire skilled IT personnel, 52% answered yes and 48%, no. (For additional background and comments, see Appendix II).

Figure 1: If a decrease, is the reduction because of one of the following?
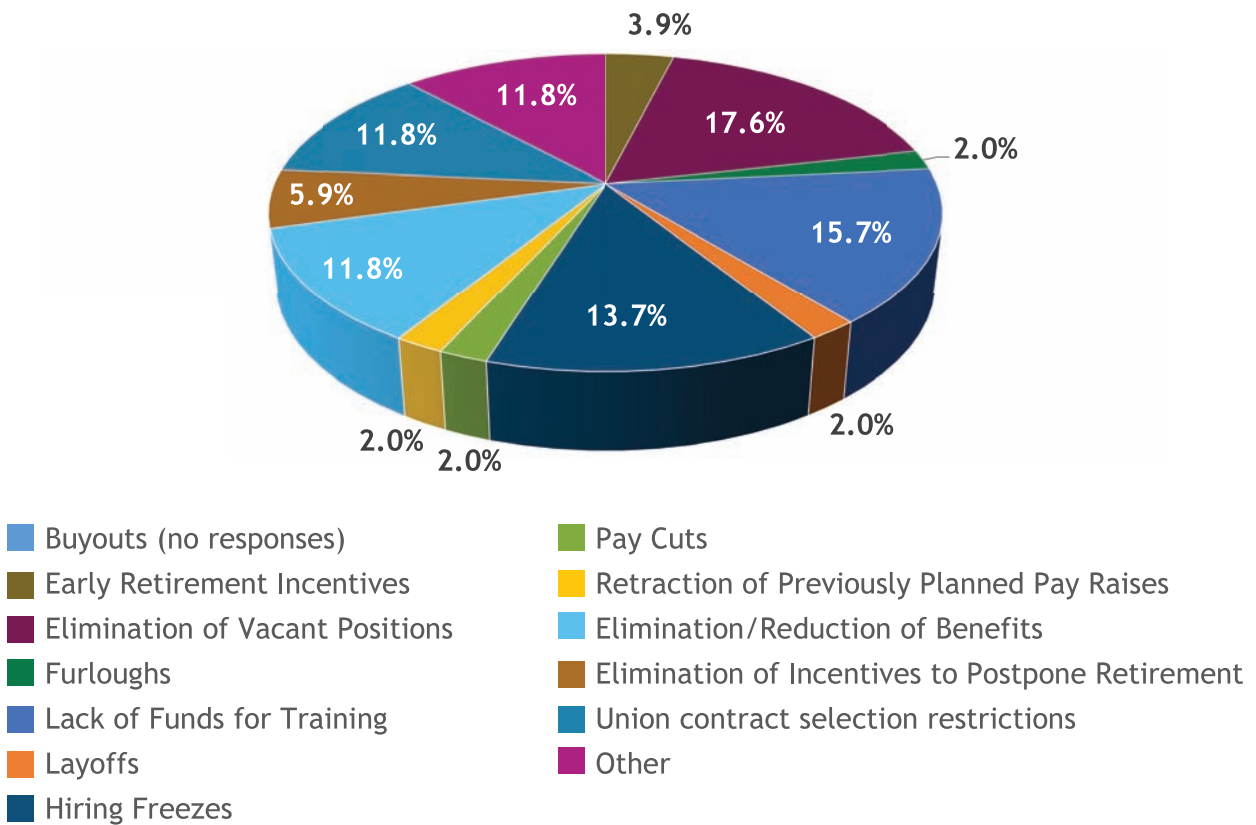
Answer Options	Response Percent
Attrition with no backfill	31.3%
All of the above	31.3%
Service optimization	18.8%
Consolidation	12.5%
Unknown	6.3%
Layoffs	0.0%

Figure 2
What state personnel action has created the greatest challenge to your ability to develop, support and maintain IT services for state government?

Legend:
- Buyouts (no responses)
- Early Retirement Incentives
- Elimination of Vacant Positions
- Furloughs
- Lack of Funds for Training
- Layoffs
- Hiring Freezes
- Pay Cuts
- Retraction of Previously Planned Pay Raises
- Elimination/Reduction of Benefits
- Elimination of Incentives to Postpone Retirement
- Union contract selection restrictions
- Other

The same question was asked in NASCIO's 2011 workforce survey, *State IT Workforce: Under Pressure,*[v] and, interestingly, the predominant answer was also elimination of vacant positions and second in line was hiring freezes in the states. In the 2011 report each of those choices received a response rate of 23.8 percent.

The State of Public Employment in 2014 report[vi] from Governing (@Governing) sums it up this way: "while the private sector has been gaining, the public sector continues to drag down U.S. job creation. It's unsurprising that job growth has been slower in government since it began shedding jobs at a quick pace at the same time the private sector was beginning to improve." The reasons for this vary, but

one hypothesis is that the private sector can typically offer higher salaries and other benefits. (We talk how to combat this later on).

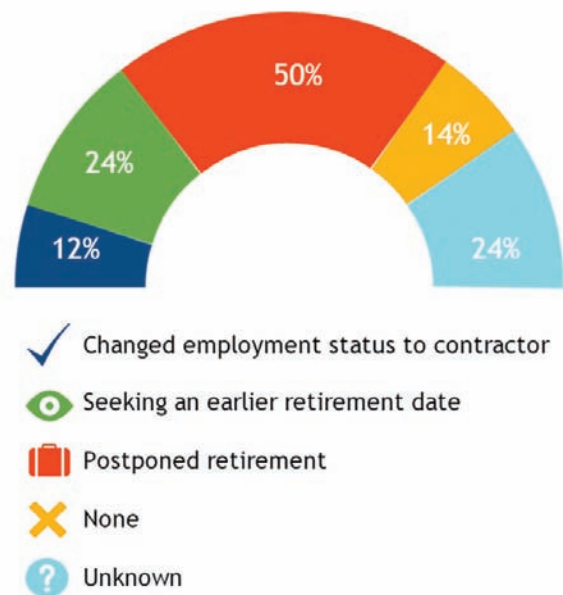## Assessment on the Impact of Retirement in the State IT Workforce

The Society for Human Resource Management (@SHRM) 2014 report,[vii] *Preparing for an Aging Workforce*, surveyed more than 2,000 human resources professionals from all sectors and discusses retirement and an aging workforce in depth. The report states, "...a majority of respondents reported that their organizations are prepping for the skills gap that may lie ahead when older workers do retire by implementing training and cross-training programs to transfer knowledge to younger workers."

Certainly states must also implement similar strategies as the number of employees eligible for retirement in the coming years is staggering. Forty percent (40%) of our survey respondents noted that 11-20% of their state IT employees will be eligible for retirement in the next year. Twenty-two percent (22%) of respondents noted that 21-30% of their state IT employees will be eligible for retirement in the next year. This is in line with the 2011 NASCIO workforce report: the majority of respondents anticipated that between 21-30% of the state IT

workforce would retire or be eligible to retire in the next five years.

Also in our 2011 workforce report, overwhelmingly, the majority of respondents witnessed retirement-eligible IT employees choosing to postpone retirement – with half of the states saying that postponement had become a major strategy for IT employees. The data holds true in this updated survey with 50% of participants choosing postponed retirement (fig. 3).

Figure 3
In the past few years, some state workers have begun to rethink their retirement strategy. What change, if any, have your retirement-eligible IT employees made regarding their retirement?

✓ Changed employment status to contractor

◉ Seeking an earlier retirement date

▮ Postponed retirement

✗ None

? Unknown

Sixty-four percent (64%) of respondents indicated that the number of retirements or expected retirements is not substantially altering the way in which states deliver IT services and support. However, 32% of respondents have been affected and altered the way they deliver IT services and support. The most common ways states are being affected are through outsourcing, consolidation, staff reorganization and increased use of cloud services. Respondents also noted that they continue to experience a growing skills gap between more experienced, closer-to-retirement, legacy-system-knowledged staff and entry level staff members.

State IT Workforce Recruitment and Retention

When states were asked if they were having difficulty recruiting new employees to fill vacant IT positions, 86% said yes while 14% said no. This is a dramatic increase from the 2011 report where 54.8% responded yes and 45.2% said no. The majority of states also reported that it is taking 60-90 days to fill entry level IT positions and 3-5 months for senior level IT positions. Most alarmingly, 66% of respondents said the shortage of qualified candidates for state IT positions is hindering their state's ability to achieve its strategic initiatives. So, how are states combatting this challenge?
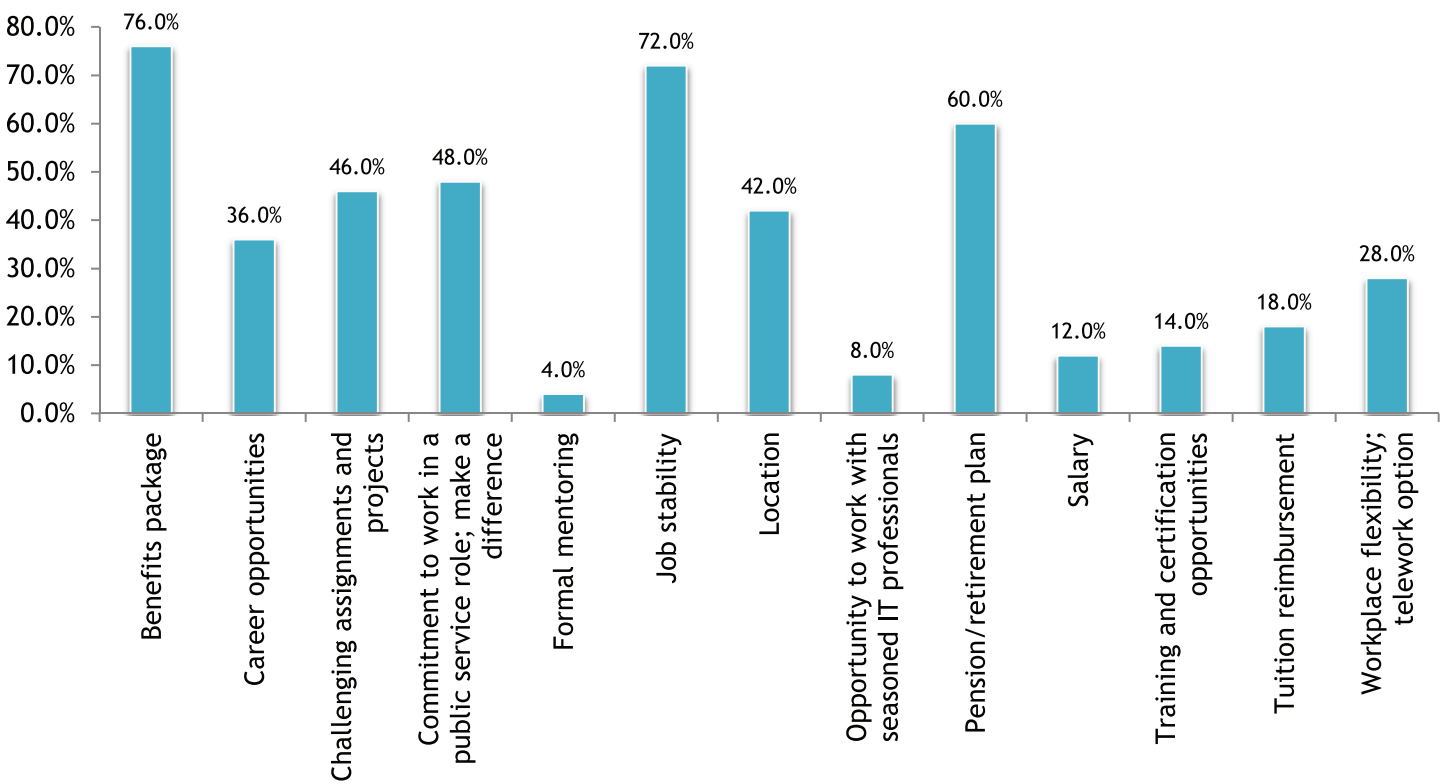
In the Computer World (@ComputerWorld) article[viii] *IT hiring: 4 things you're doing wrong (and how to fix them)*, Suma Nallapati, Secretary of Technology and CIO for Colorado said, "We used to just post a position on the government website, and whoever applied, applied, but we weren't getting as broad an audience as we'd like," Nallapati explains. "We are also looking at more sourcing of passive candidates. We want to start building up the talent pipeline so we can fill jobs on a much more proactive and fast-paced basis."

When asked what attracts new IT employees to work for the state, benefits package (76%), job stability (72%) and pension/retirement plan (60%) were the top answers. It should be noted that these responses mirror those of the NASCIO 2011 workforce survey (fig. 4).

STATES ARE INNOVATING
"We hired an IT focused recruiter. Open certain positions permanently to seek applicants year-round."

Figure 4
What attracts new IT employees to work for your state?

Figure 4: Bar chart showing what attracts new IT employees to work for your state:
- Benefits package: 76.0%
- Career opportunities: 36.0%
- Challenging assignments and projects: 46.0%
- Commitment to work in a public service role; make a difference: 48.0%
- Formal mentoring: 4.0%
- Job stability: 72.0%
- Location: 42.0%
- Opportunity to work with seasoned IT professionals: 8.0%
- Pension/retirement plan: 60.0%
- Salary: 12.0%
- Training and certification opportunities: 14.0%
- Tuition reimbursement: 18.0%
- Workplace flexibility; telework option: 28.0%

Perhaps the most eye opening observation in the entire set of responses is the following: when asked if the state's salary rates and pay grade structures present a challenge in attracting and retaining IT talent, an overwhelming 91.8% answered yes. What intensifies the severity of this response is that, in the 2011 NASCIO workforce report, 78.6% answered yes.

When asked how this challenge is being overcome, there was a mixed bag of responses.
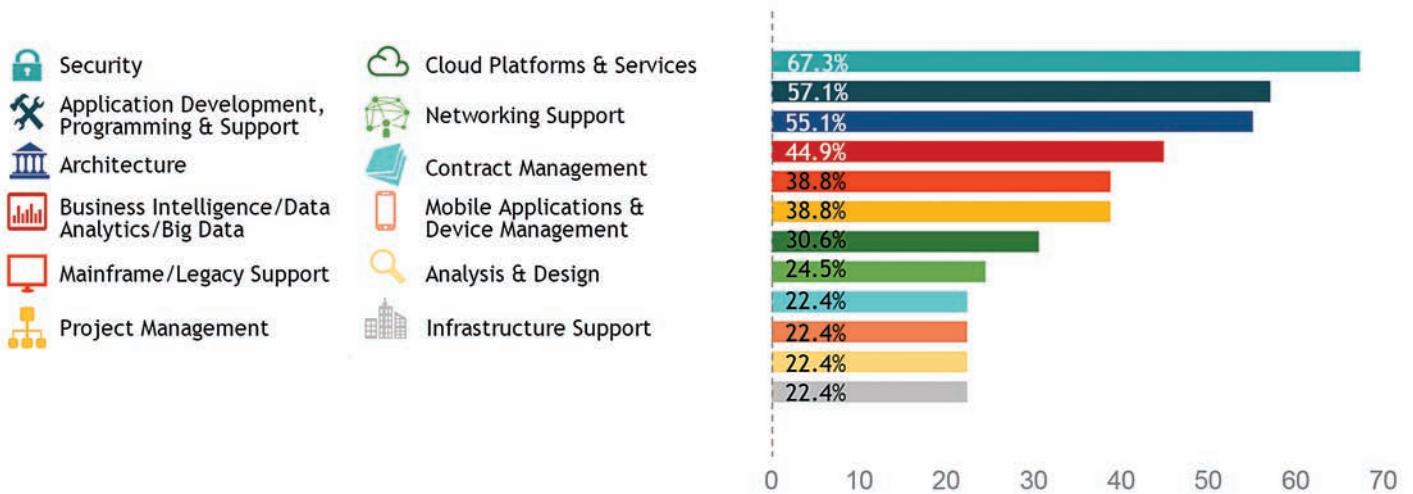
Many answered that they are reviewing job titles and classifications and restructuring job families and pay bands. Some also noted they are emphasizing the other benefits of the job, like tuition reimbursement and internships, with one CIO answering, "money isn't everything. We try to establish a culture that is appealing to employees so that the decision to leave for more money becomes difficult for people." One state has also introduced "skill-based pay" legislation.

"We have the largest IT intern class in the state's history and we convert a high percentage of interns into entry level hires. We also launched an inaugural class of innovation fellows which we recruited into our IT organization."

When states were asked which skills and disciplines present the greatest challenges in attracting and retaining IT employees, application development, programming and support received 57.1%; architecture received 55.1%; while security was the top answer with 67.3% (fig. 5).

Figure 5
What skills and disciplines present the greatest challenges in attracting and retaining IT employees?

Security	Cloud Platforms & Services	67.3%
Application Development, Programming & Support	Networking Support	57.1%
Architecture	Contract Management	55.1%
Business Intelligence/Data Analytics/Big Data	Mobile Applications & Device Management	44.9%
Mainframe/Legacy Support	Analysis & Design	38.8%
Project Management	Infrastructure Support	38.8%

Percentages shown: 67.3%, 57.1%, 55.1%, 44.9%, 38.8%, 38.8%, 30.6%, 24.5%, 22.4%, 22.4%, 22.4%, 22.4%

The fact that security was the top response is not surprising. In the 2014 Deloitte-NASCIO Cybersecurity Study *State Governments at Risk: Time to move forward,*[ix] nine in ten respondents reported that the biggest challenge in attracting talent to state cybersecurity positions comes down to salary.

The January, 2015 Wall Street Journal (@WSJ) article, *Pay for Mid-Level Cybersecurity Talent Is Soaring,*[x] reads, "today's security talent crunch has its own trickle-down effect with salaries increasing for 'mid-tier' hires. The demand is making it harder for chief information security officers to attract and retain seasoned engineers who can detect and neutralize threats. CISOs capped by salary constraints must offer the opportunity to cross-train employees using cutting-edge security technologies, experts say."

In addition, the Enterprise Strategy Group's (@esg_global) annual *IT Spending Intentions Survey*[xi] lists information

security as the top "problematic shortage of existing IT skills" category for 4 years in a row!

The Deloitte-NASCIO report sums up the problem this way, "the skill sets needed for effective cybersecurity protection and monitoring are in heavy demand across all sectors. Private sector opportunities and salaries are traditionally better than those offered by government. Not surprisingly, state CISOs are struggling to recruit and retain people with the right skills, and they will need to establish career growth paths and find creative ways to build their cybersecurity teams. Furthermore, as states turn to outsourcing and specialist staff augmentation as a means to bridge their cybersecurity talent gaps, it's imperative for CISOs to manage third-party risks effectively."

Finally, in this section we asked two additional questions about recruiting and retaining a highly qualified IT workforce (fig. 6, 7).

STATES ARE INNOVATING
"We are engaging classes or groups of students to work on real projects and provide them the freedom to think outside the box and come up with a solution. This attracts qualified IT staff to the culture we are building."

Figure 6
As a result of the ever-changing workforce, current labor conditions and constantly increasing expectations, what strategies and tactics has your state used in *attracting* a highly qualified IT workforce?
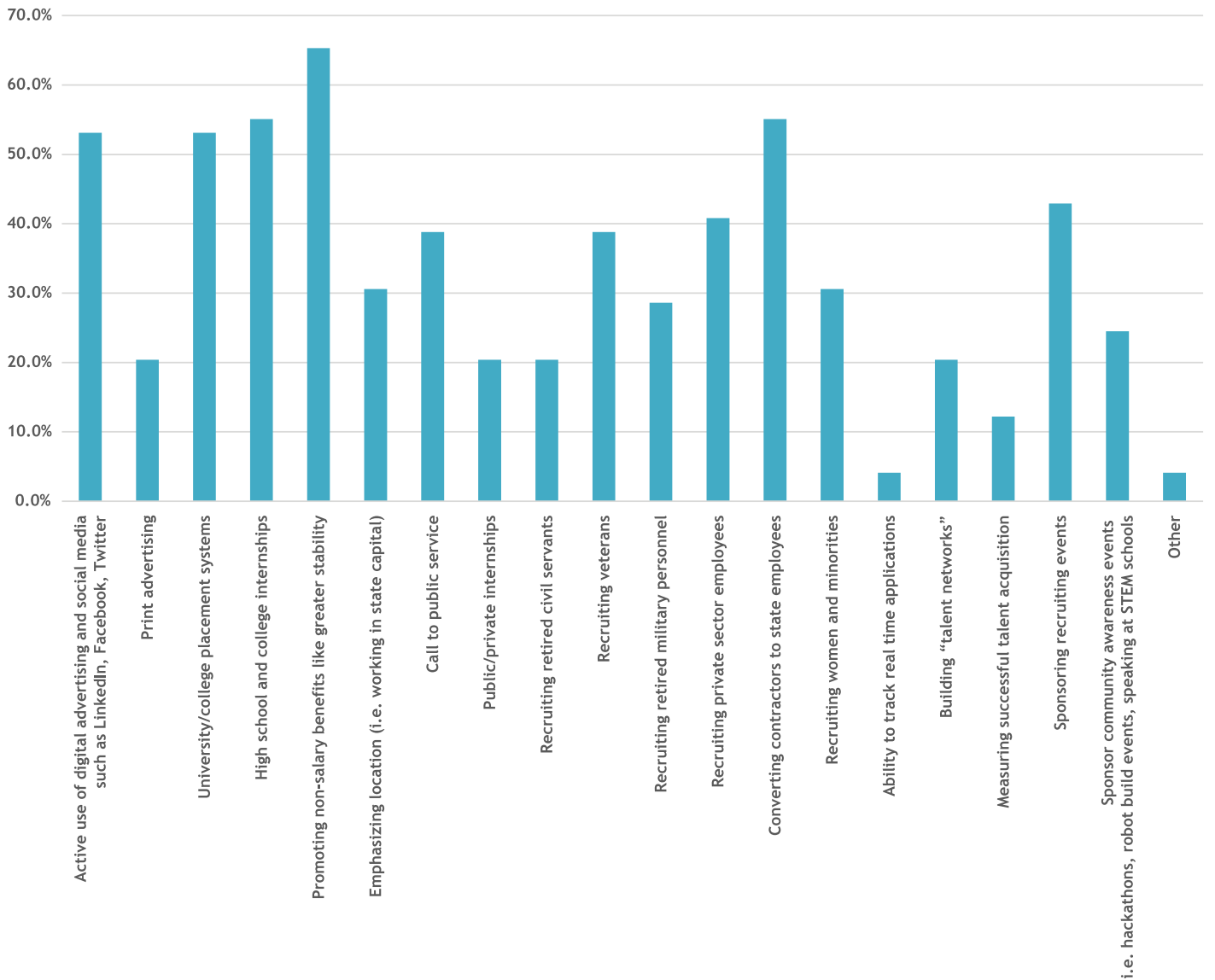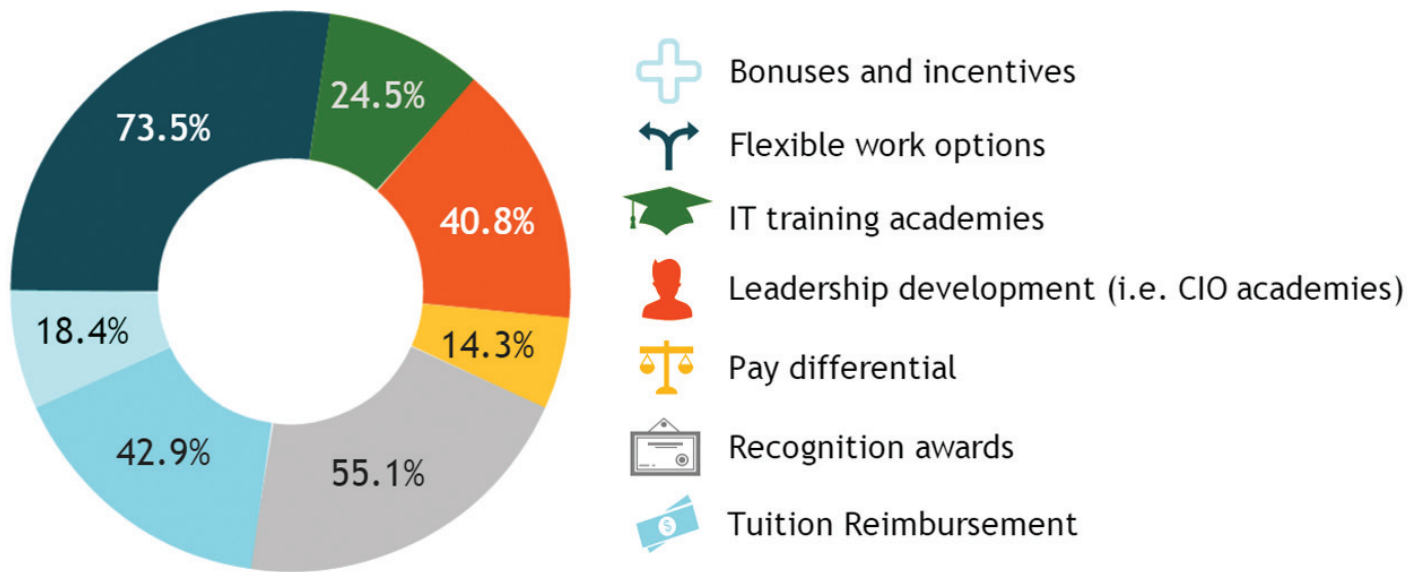
What does this data tell us? It seems that states have and will employ a wide range of tactics, for example, going more digital and embracing new technology. This has led to partnering with colleges and universities to get to qualified candidates and it seems that tactic has gotten more aggressive and common.

Figure 7
What strategies and tactics has your state used in *retaining* your IT workforce?

Bonuses and incentives

Flexible work options

IT training academies

Leadership development (i.e. CIO academies)

Pay differential

Recognition awards

Tuition Reimbursement

STATES ARE INNOVATING
"We have used incentives and signing bonuses as allowed per the state's pay practice guidelines for state agencies."

Innovations and Best Practices

Finally, we wanted to gather additional information from respondents in an open-ended format. Included below are the four questions and a sampling of responses.

When we asked respondents to describe any innovative techniques they have used to attract qualified IT talent, we received some valuable information. We had a few comments that dealt with formal relationships with high schools, community colleges and universities and one state who partnered with computer science departments on specific projects (like mobile app development) and events to raise visibility to their students. Many states offer internships to high school and college students as well.

States are also rebranding their organizations to better attract veterans and a younger workforce and using platforms like social media to recruit. States are also networking with other government entities including local government. Finally, states are using current employees to recruit new talent.

STATES ARE INNOVATING
"We created a master engineer title for highly technical staff who do not want to manage other staff. This job pays more than a manager title and it is used to recruit and keep workers with excellent technical skills."

Second, we asked survey participants to describe any innovative techniques they have used to retain qualified IT talent. Many agencies are modernizing the work environment by implementing flexible work schedules including working from home. Agencies are also providing continuing education opportunities for their staff including online courseware, training by third party solution providers and the use of learning management systems.

STATES ARE INNOVATING
"We have implemented two eleven month training programs for IT employees - the Certified Government CIO Program and the Government IT Manager Program. Both programs are focused on growing future leaders in the IT arena by training strategic, people and communication skills."

States are also recognizing their employees with awards and pay for performance and working on projects with new, exciting technology. Finally, states are working towards changing the workspace and culture to make it more attractive to employees.

"We have proposed an IT Restructure plan that will unify our IT efforts statewide by breaking down silos across state government. This plan would give a clear career path for IT professionals regardless of current agency. The restructure would also give more IT support for employees across agency lines and would allow IT leaders to set IT compensation closer to market value."

STATES ARE INNOVATING
"We are creating transparency within the organization to foster improved communication like having all hands meetings with an open mic, etc. We also have a rewards, recognition and incentive programs for rewarding innovative ideas that result in cost savings."

Next we asked if there had been a change in the respondent's organization culture that has improved or impeded their ability to recruit and retain qualified IT talent. Participants discussed difficulties they have with outside influences like public perception, union constraints, hiring delays and pay raise freezes and also discussed what has aided their ability to recruit and retain a qualified workforce.

STATES ARE INNOVATING
"We have started putting an emphasis on training, professional development and career ladder, whether or not that career is with our department. We encourage people to grow because we want the best for them and because we care about their future."

STATES ARE INNOVATING
"Our past recruiting and retention efforts were unfocused and lackluster. Two years ago we began to focus on recruiting. We're using career bands classification and pay for performance to motivate retention. We now praise longevity and provide more opportunities for performing employees."

States also told us that consolidation and restructuring the IT organization has created tremendous opportunities to retain top talent. IT organizations are focusing on digital engagement, innovation/transformation of government, smaller/faster project development and implementation. These goals have all improved project portfolios.

States are also embracing new high tech innovations that can help retain the interest of employees and leverage new platforms

for recruiting. Finally, states are doing what may seem obvious but has been successful: simply making an increased effort to focus on recruitment and retention and measuring their results.

Lastly, we asked if there were any other recommendations or information participants would like to provide. This section garnered some excellent feedback and recommendations, from one CIO to another.

STATES ARE INNOVATING
"Government still has a lot to do to attract the best IT resources. The federal government could provide grants for skills development for government employees and students."

The Road Ahead

At times, reading and digesting some of these results may seem daunting at best. As Jamie Gutfreund, chief strategy officer for the Intelligence Group, (@Cassandrareport) says, "No organization can afford not to recruit the best talent." So, what can be done?

In the January 2014 Forbes (@Forbes) article, *What Millennials Want in the Workplace (And Why You Should Start Giving It to Them)*,[xii] the Intelligence Group lists these stats:

- 64% of them say it's a priority for them to make the world a better place
- 72% would like to be their own boss. But if they do have to work for a boss, 79% of them would want that boss to serve more as a coach or mentor
- 88% prefer a collaborative work-culture rather than a competitive one
- 74% want flexible work schedules
- And 88% want "work-life integration," which isn't the same as work-life balance, since work and life now blend together inextricably

It is estimated that a full 86 million millennials will be in the workplace by 2020—representing a full 40% of the total working population. State governments must adapt to this new generation and make state jobs more desirable to this population set.

It's true that states have faced many challenges and restraints—perhaps most of all with budgets (or lack thereof). However, it should also be inspiring that states have gone well beyond making lemonade out of lemons and implemented some truly innovative practices to overcome these challenges.

As was mentioned earlier, each year, NASCIO conducts a survey of the state CIOs to identify and prioritize the top policy and technology issues facing state government. The "CIO Top Ten" is used to guide NASCIO's programs, planning and publications for the year ahead. For the first time in several years, "human resources/talent management" was ranked six on the list:

> **Human Resources/Talent Management:** human capital/IT workforce; workforce reduction; attracting, developing and retaining IT personnel; retirement wave planning; succession planning; support/ training, portal for workforce data and trends

Given the results presented in this survey, the ranking certainly makes sense—state CIOs are facing complex challenges managing people, talent, skills, knowledge and experience.

A Call to Action for State CIOs

In order to overcome these obstacles, state CIOs must work with all sectors and age groups of the workforce by:

Refocus

- Collaborating with state human resources on best practices and needed reforms
- Continuing to experiment to find what really works in recruitment and retention and being open to new and innovative approaches and solutions
- Measuring the effectiveness of programs and determining why target recruits and current employees want to join and/or stay in government service
- Not focusing so much on making new friends that you don't keep the old—attract new and robust workers but don't forget about retaining existing employees

Recruitment

- Continuing to enrich partnerships with colleges and universities and providing tuition subsidies, forgiveness and benefits to prospective and current employees
- Investigating Scholarship for Service opportunities available from the federal government
- Developing a formal marketing strategy to attract and retain talent

Retention

- Creating work environments that are stimulating, fun and attractive to all sectors of the workforce
- Providing flexible options for continuing education and skills development
- Creating work environments that promote quick decisions, prompt responsiveness and minimizes bureaucracy
- Evaluating organizational dynamics and culture and be willing to stay the course or change as necessary
- Adopting flexible work programs (e.g. work at home, collaboration suites, flextime)
- Initiating employee career path development programs that mentor, train, and promotes from within
- Developing effective on-boarding/mentoring programs for new employees
- Meshing with cloud services adoption to reduce overall workforce requirements
- Embracing the age diversity of workforce—old folks and young guns and those in-between all have much to offer—and tailoring benefits and offerings that appeal to cross sections of the workplace

Retirement

- Enhancing succession planning
- Advocating for phased retirement options
- Accepting that workers are working longer and preparing by adjusting pension/retirement plans accordingly

Appendix I: State Demographic Data

Approximately how many total full-time IT employees does your state have in the executive branch of government?

Answer Options	Response Percent
5,000 or more employees	13.7%
4,000 to 4,999 employees	3.9%
3,000 to 3,999 employees	3.9%
2,000 to 2,999 employees	11.8%
1,000 to 1,999 employees	25.5%
500 to 999 employees	27.5%
Less than 500 employees	13.7%

Approximately how many total full-time state IT employees are in your CIO organization?

Answer Options	Response Percent
1000 or more employees	7.8%
900 to 999 employees	3.9%
700 to 899 employees	15.7%
500 to 699 employees	3.9%
300 to 499 employees	17.6%
101 to 299 employees	37.3%
Less than 100 employees	13.7%

Appendix I:
State Demographic Data (cont'd)

Does your state perform a regular IT workforce assessment?

Yes	35.3%
No	62.7%
Unknown	2.0%

Has there been a change in the number of contracted IT positions within your state **government over the past five years?**

Increase	66.7%
Decrease	9.8%
No change	11.8%
Unknown/do not know	11.8%

On average, how many IT positions are open in your state during the year?

Answer Options	Response Percent
1-10% of our entire IT workforce	52.0%
11-20% of our entire IT workforce	46.0%
21-30% of our entire IT workforce	2.0%
Over 31%	0.0%

Does the presence of state employee unions affect your ability to recruit and retain **qualified IT employees?**

Answer Options	Response Percent
Yes	28.6%
No	38.8%
We don't have employee unions for IT	32.7%

Appendix II:
The Civil Service System

Does your state's civil service system affect your ability to acquire the skilled IT personnel that you need?

Answer Options	Response Percent
Yes	52.0%
No	48.0%

If so, please explain why (a sample of answers is below):

"Limited ability to select on basis of qualifications."

"It takes way too long to classify positions prior to advertising – especially at the senior level. There is a ceiling on pay for senior level positions and a limit to the number that we are allowed to have."

"Recruited candidates MUST be on an approved examination list before being eligible for employment."

"Our state's IT positions are dated and aren't commensurate with today's technology stack."

"Civil Service rules are outdated and do not address the needs of the IT workforce. The creation of the union rules were defined for a manufacturing or clerical workforce to reward longevity. Not to attract a highly innovative and fast paced changing workforce necessary in IT with a focus on performance measures."

"The modern millennial workforce is much more agile and transient compared to Gen X and Baby Boomers. The typical civil service setup does not attract this new workforce resource and, in my opinion, pushes them to see State service as a stop gap measure, at best."

Acknowledgments

We thank state CIOs for participating in this survey – the response rate was extraordinary. We also acknowledge the support and contributions of the individuals listed below.

The President's Initiative on State IT Workforce advisory panel provided invaluable time and expertise. Mark Bengal, CIO, State of Tennessee and Jim Smith, CIO, State of Maine, served as co-chairs. Other members are:

- Jason Allison, CIO, State of Florida
- Brenda Decker, Acting CIO, State of Nebraska
- Tauna Lockhart, Chief Communications Officer, Governor's Office of Technology, State of Colorado
- Cheri Martin, Deputy CIO, State of Alabama
- Suma Nallapati, Secretary of Technology and CIO, State of Colorado
- Kelly Samson Rickert, Director of Workforce Development, Office of Information Technology, State of Maine
- Tim Robyn, CIO, State of Missouri
- Karen Wilcox, Director of Human Resources, Governor's Office of Technology, State of Colorado

Special partner advisor: Leslie Scott, Executive Director, National Association of State Personnel Executives (NASPE)

NASCIO President Stu Davis, CIO, State of Ohio

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