NCI Supervisory and Leadership Development Programs:
A Workforce Analytics Evaluation
Final Report: 14-5715 NCI
NCI Supervisory and Leadership Development Programs: A Workforce Analytics Evaluation

Prepared for:
Office of Workforce Planning and Development
National Cancer Institute
About Human Capital Management Institute

• HCMI Background:
  ▪ Specialized in HR analysis and measurement
  ▪ Deep expertise in Workforce Analytics and Planning
  ▪ Board made up of CFOs and HR heads

• What We Do:
  ▪ Measure the immeasurable in human capital
  ▪ Transform workforce data into business intelligence
  ▪ Provide support, tools and training so HR can partner with Finance

• The Human Capital Management Institute (HCMI) was founded on the belief that organizations can and must, find better ways of measuring their investments in human capital. Our vision of the future is one in which human capital measurement and data is as integral to business decision making as financial information is today.
Presentation Summary

1. Executive Summary

2. NCI Data Model

3. OWPD Training Academy Overview
   • Executive Coaching (Coaching)
   • Senior Executive Enrichment and Development (SEED)
   • Leadership Education and Action Program (LEAP)
   • The Empowered Supervisor (TES)
   • Knowledge Management (KM) Mentoring Program

4. Key Findings
   a) Turnover and Retention
   b) Performance Ratings
   c) Awards
   d) Promotions
   e) Training Participation
   f) Retirement Projections
   g) Financial Impact and ROI

5. Recommendations and Next Steps
Executive Summary
Executive Summary

• **Project Background:**
  – HCMI was engaged by NCI to complete a detailed training analysis on employee outcomes, and answer the questions: Does training matter, if so how much, and what is the impact or ROI of training?
    • This project primarily focused on evaluating the impact of longer-term OWPD training programs including: TES, KM, Coaching, LEAP, and SEED and will be referred to in this report as “Academy Training.”

• **Workforce Analytics Methodology:**
  – HCMI integrated Academy training data with overall NCI workforce data from 2009 through 2014 to build a comprehensive data model for analysis. Comparing Academy Alumni to Non-Alumni, as well as the overall NCI population, *post-training impact* was evaluated primarily on the following workforce measures:
    – Turnover and Retention, Promotions, Performance Ratings, Awards

• **Project Deliverables:**
  – Key project deliverables include a comprehensive data model and documentation, financial linkage and ROI modeling, final onsite presentation to NCI stakeholders, HCMI recommendations and project opportunities and an onsite workforce analytics training for NCI staff.
Executive Summary

Key Findings:

• OWPD Academy training has a significant positive impact across all workforce measures evaluated.

• Academy Alumni have lower turnover, higher performance, more frequent monetary and non-monetary awards, and higher promotion rates than Non-Alumni.

• Most of these trends are not limited to Academy Alumni, but also extend to employees they manage.

• Projected ROI of Academy training is between $2.1 and 2.4 Million annually over the next 5 years.
Executive Summary

Analysis Highlights

• Academy Alumni are more than twice as likely to be retained as Non-Alumni, and Alumni high performers are almost half as likely to turnover.

• Academy Alumni are more successful at developing and retaining talent. The employees they manage are more than twice as likely to be promoted, and approximately 35% less likely to turnover.

• Academy Alumni are 35% more likely to be high performers than Non-Alumni, and also receive almost 40% more value in monetary awards than Non-Alumni.

• TES Alumni have the lowest turnover rate of any Academy course, and KM Alumni have the highest promotion rate of any Academy course.
NCI Data Model
NCI Data Model Overview

Legend:
✓ Provided / Complete  ❑ Not Applicable / Next Steps

Training Effectiveness Study Data Model

Core Workforce

EDIE
Preliminary Data Extracts
✓ Annual headcount snapshots
✓ Initial reports

nVison
Final Data Extracts
✓ Quarterly headcount snapshots
✓ Employee transactions
✓ Supervisor department mapping

Training

LMS
✓ All-inclusive training extract

Databases
✓ OWPD Alumni study population
  - supervisors
  - all attendees

Surveys
✓ Training evaluations
✓ Exit surveys
✓ Supporting docs

Financial

Budget and Expenses
✓ Training costs
✓ Replacement and turnover costs

Supplemental Workforce

Engagement Survey
• Insufficient response rate

Performance (Confidential)
✓ Performance ratings
✓ QSI and monetary awards

Business and Other

Grant Data
❑ Next Steps (TBD)

Strategic Planning and Other
❑ Next Steps (TBD)

Recruiting
❑ Applicant data (Next Steps, TBD)
❑ Hiring source (Next Steps, TBD)
Data Integration and Positioning

Data Integrated:
✓ OWPD Training Academy Alumni Data
✓ Workforce Headcount Snapshots
✓ Workforce Transactions
✓ Performance Ratings
✓ Monetary Awards and QSI
✓ LMS Training Data
✓ Supervisor Data
✓ Training Academy Expenses
✓ Replacement and Turnover Costs
✓ NCI and NIH Director Awards

Data Positioning Completed:
✓ Workforce Categories and Critical Job Groups
✓ Workforce Transaction Categories
✓ Tenure, Age and Retirement Categories
✓ Monetary Awards and QSI Categories
✓ OWPD Training Academy Courses and Dates
✓ Training Academy Cohorts and Classes
✓ Managed Alumni Department Categories
✓ LMS Training Data Categories
✓ Part-Time Salary Reconciliation
Data Limitations

- Employee Supervisor Data  *(Proxy, Linked by Department)*
- Engagement Data  *(Insufficient Response Rate, Potential Next Steps)*
- Applicant and Hiring Source Data  *(Not Available, Potential Next Steps)*
- Grant and Strategic Planning Data  *(Not Available, Potential Next Steps)*
OWPD Training Academy Overview
Academy Alumni Job Distribution

Alumni make up a higher percentage of Professional Staff, and a lower percentage of Scientific and Technical Staff Alumni, than the Overall NCI population.
Among Academy Alumni, the largest percent of Alumni have completed Coaching (25.0%), followed by TES (23.9%) and KM (19.8%).
Key Findings:
Turnover and Retention
Overall Turnover Rate

Academy Alumni are more than twice as likely to be retained than Non-Alumni.
High Performer Turnover Rate

Academy Alumni with a performance rating of 5 are approximately half as likely to turnover than Non-Academy Alumni.
HNC’s with Alumni Supervisors are responsible for approximately 35% less employee turnover than HNC’s without Alumni Supervisors, on average.

That amounts to approximately 400 fewer terminations across the analysis period.
Key Findings:
Performance Ratings
Overall High Performer Rate

Academy Alumni are 35% more likely to receive a performance rating of 5 than Non-Academy Alumni.

Percent of High Performers

<table>
<thead>
<tr>
<th>Year</th>
<th>Alumni High Performer</th>
<th>Non-Alumni High Performer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>53.2%</td>
<td>40.3%</td>
</tr>
<tr>
<td>2010</td>
<td>53.8%</td>
<td>30.9%</td>
</tr>
<tr>
<td>2011</td>
<td>47.5%</td>
<td>32.2%</td>
</tr>
<tr>
<td>2012</td>
<td>44.6%</td>
<td>25.0%</td>
</tr>
<tr>
<td>2013</td>
<td>47.7%</td>
<td>30.4%</td>
</tr>
<tr>
<td>2014</td>
<td>51.6%</td>
<td>37.4%</td>
</tr>
</tbody>
</table>

Additional Detail: Statistical Confirmatory Analysis
Key Findings: Awards
Monetary Awards

Academy Alumni received almost 40% more monetary awards than non-participants.

Additional Detail: Statistical Confirmatory Analysis
Directors Awards

Academy Alumni received more director awards than non-participants.

Additional Detail:  Statistical Confirmatory Analysis
Key Findings: Promotions
Managed Promotion Rate

Alumni Supervisors are more successful at creating opportunities for career growth than Non-Alumni Supervisors, having more than double the rate of managed promotions.

Additional Detail:  
- Statistical Confirmatory Analysis  
- Promotion Rates by Training Course  
- KM Promotion Rate vs. Comparison Group
Key Findings:
Training Participation
Managed Training Participation

All employees have steadily increased training participation, but employees with Alumni supervisors completed almost twice the courses as employees with Non Alumni supervisors.

Cumulative Average Courses Completed

<table>
<thead>
<tr>
<th>Year</th>
<th>Alumni Supervisors</th>
<th>Non-Alumni Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>2010</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>2011</td>
<td>2.2</td>
<td>1.4</td>
</tr>
<tr>
<td>2012</td>
<td>3.2</td>
<td>2.3</td>
</tr>
<tr>
<td>2013</td>
<td>4.9</td>
<td>2.5</td>
</tr>
<tr>
<td>2014</td>
<td>5.6</td>
<td>3.1</td>
</tr>
</tbody>
</table>
Key Findings: Retirement Projections
Retirement Eligible Projections

NCI’s retirement eligible population is projected to significantly increase over the next five years.

NCI’s average retirement age is 65. By 2019, 40% of supervisors will be 65 or over. As retirements increase, OWPD Academy training is critical to build skills, mitigate knowledge loss and grow NCI’s future leaders.
Actual Retirement Rate and Projections

NCI’s Retirement Rate is projected to significantly increase over the next five years.

NCI’s average retirement age is 65, and the projected increase in retirements is a result of growth in the retirement eligible population, and an increasing percentage of eligible employees taking retirement.
Key Findings:
Financial Impact and ROI
NCI Projected Replacement Costs

Replacement costs peaked in 2012, but are projected to increase over the next 5 years.
Academy Program Projected ROI

Academy Program ROI is estimated between $2.1 and 2.4 Million annually over the next 5 years.
Projected ROI of Internal Hires

Projected ROI of doubling the number of positions filled with internal hires over the next five years is approximately $5.7 Million, between $0.7 and $1.3 Million per year.

Between 2009 and 2014, roughly 10% of positions were filled with internal hires, costing $3,700 less per position than their external hire counterparts.
Recommendations and Next Steps
Project Recommendations

Opportunities and Recommendations

• Expand the OWPD Training Academy, with an emphasis on high potentials, NCI mission critical roles and Scientific and Technical Staff.

• Focus on building career paths to grow talent internally and develop future leaders as part of a comprehensive workforce planning strategy.

• Dedicate internal or external resources for ongoing workforce analytics and planning projects, and expand scope to include operational metrics and organization-wide opportunities.

• Leverage workforce standards, such as a framework to classify and group jobs and standard definitions for workforce transactions, to improve data quality, and focus on expanding the scope of data currently tracked in nVision, EDIE and other workforce systems. See appendix for specific examples.
Project Recommendations

Interventions

• Increase training availability for job groups and departments with the highest retirement risk.

• Provide more opportunities for academy training for high potential employees to build management bench strength. Target entry level management roles and senior professional roles for increased internal promotions, with a goal of 20% of open positions filled by internal hires by the year 2020.

• Identify best practices of Academy Alumni in Supervisory roles to increase retention, particularly for groups that historically have had fewer opportunities to participate in Academy training.

• Implement a training effectiveness dashboard or internal scorecard to monitor performance and track the effectiveness of interventions.
Next Steps: How HCMI Can Assist

1) Learning Effectiveness Dashboard
   ▪ Included as an addition to project scope (6 months at no cost to NCI)
   ▪ Advanced forecasting and modeling capabilities
   ▪ Data refresh available as part of the implementation process

2) Workforce Planning Support
   ▪ Actionable workforce plan for NCI, with critical job group and HNC level forecasting
   ▪ Address critical headcount, skills, costs, talent and productivity gaps
   ▪ Forecast retirements and implement strategies to develop talent internally

3) Workforce Data Blueprint
   ▪ Drive transaction, metric, reporting and job standards
   ▪ Rapid data cleansing and identification of critical data gaps
   ▪ Optimize value, integration and power of existing workforce systems

4) SOLVE Workforce Intelligence Software
   ▪ Out of the Box Workforce Analytics and Planning
   ▪ Rapid Data Integration, Workforce Standards and Metrics
   ▪ Advanced Reports and Dashboards Across the Talent Management Lifecycle
   ▪ Real-Time Scenario Modeling, Workforce Financial Linkage and ROI
Questions
Appendix
Academy Alumni Tenure Distribution

More than 85% of Academy Alumni have 6 or more years of tenure, a higher tenure profile than that of NCI overall.

### 2014 Year End Headcount

<table>
<thead>
<tr>
<th>2014 Year End Headcount</th>
<th>&lt;1 Yr</th>
<th>1-2 Yrs</th>
<th>3-5 Yrs</th>
<th>6-10 Yrs</th>
<th>11-20 Yrs</th>
<th>21-35 Yrs</th>
<th>&gt;35 Yrs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy Alumni</td>
<td>3</td>
<td>13</td>
<td>37</td>
<td>86</td>
<td>153</td>
<td>71</td>
<td>6</td>
<td>369</td>
</tr>
<tr>
<td>Overall NCI</td>
<td>186</td>
<td>287</td>
<td>467</td>
<td>564</td>
<td>946</td>
<td>466</td>
<td>83</td>
<td>2,999</td>
</tr>
</tbody>
</table>
Academy Alumni Job Distribution

On average, there are more than twice as many Academy Alumni in Supervisory or Management roles than the overall NCI population.

- Workforce Categories are based on HCMI job classification.
- Supervisory groups based on NCI Supervisor/Non-Supervisor Description codes and population identified by NCI.
Alumni Promotion Rate Profile

Promotion rate spikes in the years before and year during Academy training, indicating that some future Alumni receive training as a result of recent promotions.

Lower post-training promotion rates are likely due to fewer opportunities for promotion as Alumni move up through the organization.

- Promotions classified based on NOAC action type.
- “Future Alumni” are included as part of the Non-Alumni analysis group until they have completed training.
Alumni Retention
Retention Rate by Training Course

While retention for all courses has been high, TES Alumni have had the highest retention, with Coaching Alumni experiencing the lowest retention.

<table>
<thead>
<tr>
<th>End of Year Headcount</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC</td>
<td>109</td>
<td>87</td>
<td>64</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td>KM</td>
<td>69</td>
<td>62</td>
<td>48</td>
<td>32</td>
<td>15</td>
</tr>
<tr>
<td>KM Mentor</td>
<td>42</td>
<td>36</td>
<td>24</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>LEAP</td>
<td>29</td>
<td>14</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SEED</td>
<td>41</td>
<td>41</td>
<td>27</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>TES</td>
<td>90</td>
<td>61</td>
<td>51</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

- Turnover excludes retirements and IC transfers.
Retention Rate by Training Class

Retention over the first five years has been very high, and there has been little differentiation across training classes in different years.

Retention Rate

<table>
<thead>
<tr>
<th>End of Year Headcount</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>2010</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>73</td>
<td>73</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>79</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- Turnover excludes retirements and IC transfers.
Managed Turnover Rate v Benchmark

Alumni Supervisors appear to be the primary driver for lower employee turnover.

Turnover was below benchmark in HNC’s with Alumni Supervisors in all years but 2010 and 2012, but above benchmark in all years but 2012 for HNC’s with no Alumni Supervisors.

- Managed turnover based on department level (HNC) turnover, segmented by departments with and without Alumni Supervisors.
- Turnover benchmarks are based on NCI internal position-adjusted average turnover rates by workforce category, and are specific to each department.
- Turnover excludes retirements and IC transfers.
IC Transfers

Alumni are more likely to transfer into other opportunities across NIH.

- Transfers includes all moves to other IC’s, primarily promotions, realignments, conversions and reassignments.

<table>
<thead>
<tr>
<th>Average Headcount</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumni</td>
<td>137</td>
<td>174</td>
<td>237</td>
<td>289</td>
<td>324</td>
<td>348</td>
</tr>
<tr>
<td>Non-Alumni</td>
<td>2,917</td>
<td>2,944</td>
<td>2,932</td>
<td>2,826</td>
<td>2,788</td>
<td>2,706</td>
</tr>
</tbody>
</table>
Performance and Monetary Awards
High Performer Rate Detail

- High performers classified as employees with a performance rating of “5”. Excludes employees that did not receive a performance rating.

### Supervisor High Performer Rate

![Graph showing Supervisor High Performer Rate from 2009 to 2014 for Alumni and Non-Alumni.](image)

### Non-Supervisor High Performer Rate

![Graph showing Non-Supervisor High Performer Rate from 2009 to 2014 for Alumni and Non-Alumni.](image)

### End of Year Headcount

<table>
<thead>
<tr>
<th>End of Year Headcount</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumni High Performers</td>
<td>66</td>
<td>93</td>
<td>115</td>
<td>124</td>
<td>153</td>
<td>191</td>
</tr>
<tr>
<td>Non-Alumni High Performers</td>
<td>1,039</td>
<td>821</td>
<td>848</td>
<td>660</td>
<td>791</td>
<td>996</td>
</tr>
</tbody>
</table>

### Additional Detail:

- Overall High Performer Rate
- Statistical Confirmatory Analysis
### Managed High Performer Rate

#### Percent of High Performers

<table>
<thead>
<tr>
<th>Year</th>
<th>Alumni Supervisors</th>
<th>Non-Alumni Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>318</td>
<td>787</td>
</tr>
<tr>
<td>2010</td>
<td>306</td>
<td>608</td>
</tr>
<tr>
<td>2011</td>
<td>416</td>
<td>547</td>
</tr>
<tr>
<td>2012</td>
<td>322</td>
<td>462</td>
</tr>
<tr>
<td>2013</td>
<td>341</td>
<td>603</td>
</tr>
<tr>
<td>2014</td>
<td>508</td>
<td>679</td>
</tr>
</tbody>
</table>

#### Additional Detail:

- High performers classified as employees with a performance rating of “5”. Excludes employees that did not receive a performance rating.
- Managed high performers based on department level (HNC) turnover, segmented by departments with and without Alumni Supervisors.
- Supervisory and Non-Supervisory groups based on NCI Supervisor/Non-Supervisor Description codes and population identified by NCI.
Monetary Awards – Supervisory Employees

Academy Alumni supervisors received more monetary awards than Non-Alumni supervisors.

- Includes cash value for monetary awards and QSI awards, and cash equivalent for time-off awards.
- In addition to larger monetary awards, alumni received more frequent total awards as well across all years.
- Average Headcount displayed for sample size data (transactional data over time).
Training Participation
Turnover by Tenure and Training Participation

Employees taking training had significantly lower turnover rates, particularly for employees with 5 or less years of tenure.

- Turnover excludes retirements and IC transfers.

Average Headcount (Courses per Year)

<table>
<thead>
<tr>
<th></th>
<th>&lt; 1 Yr</th>
<th>1-2 Yrs</th>
<th>3-5 Yrs</th>
<th>6-10 Yrs</th>
<th>11-20 Yrs</th>
<th>21-35 Yrs</th>
<th>&gt;35 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>631</td>
<td>1,055</td>
<td>974</td>
<td>1,560</td>
<td>1,504</td>
<td>735</td>
<td>179</td>
</tr>
<tr>
<td>&lt;= 1</td>
<td>480</td>
<td>1,012</td>
<td>1,159</td>
<td>1,917</td>
<td>2,618</td>
<td>1,424</td>
<td>261</td>
</tr>
<tr>
<td>1-2</td>
<td>141</td>
<td>307</td>
<td>389</td>
<td>404</td>
<td>418</td>
<td>252</td>
<td>53</td>
</tr>
<tr>
<td>2+</td>
<td>80</td>
<td>162</td>
<td>246</td>
<td>208</td>
<td>266</td>
<td>142</td>
<td>20</td>
</tr>
</tbody>
</table>

Average Courses per Year

- 0
- <=1
- 1-2
- 2+
Performance and Training Participation

Employees with no training were the least likely to be rated as high performers.

Average Courses per Year

<table>
<thead>
<tr>
<th>End of Period Headcount</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1,274</td>
<td>1,182</td>
<td>1,081</td>
<td>990</td>
<td>907</td>
<td>861</td>
</tr>
<tr>
<td>&lt;= 1</td>
<td>1,411</td>
<td>1,497</td>
<td>1,543</td>
<td>1,515</td>
<td>1,529</td>
<td>1,494</td>
</tr>
<tr>
<td>1-2</td>
<td>268</td>
<td>311</td>
<td>342</td>
<td>374</td>
<td>393</td>
<td>393</td>
</tr>
<tr>
<td>2+</td>
<td>147</td>
<td>167</td>
<td>177</td>
<td>236</td>
<td>259</td>
<td>284</td>
</tr>
</tbody>
</table>

- Turnover excludes retirements and IC transfers.
Turnover and Training Participation

Employees that complete any LMS training having significantly lower turnover than those not taking courses.

<table>
<thead>
<tr>
<th>Average Headcount (Courses per Year)</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1,341</td>
<td>1,242</td>
<td>1,166</td>
<td>1,051</td>
<td>954</td>
<td>884</td>
</tr>
<tr>
<td>&lt;= 1</td>
<td>1,313</td>
<td>1,432</td>
<td>1,534</td>
<td>1,541</td>
<td>1,544</td>
<td>1,507</td>
</tr>
<tr>
<td>1-2</td>
<td>244</td>
<td>275</td>
<td>328</td>
<td>347</td>
<td>377</td>
<td>393</td>
</tr>
<tr>
<td>2+</td>
<td>120</td>
<td>151</td>
<td>169</td>
<td>177</td>
<td>240</td>
<td>267</td>
</tr>
</tbody>
</table>

- Turnover excludes retirements and IC transfers.  

Return to LMS Training
Managed Training Participation

Employees with Alumni supervisors completed almost twice the courses as employees with Non Alumni supervisors.

<table>
<thead>
<tr>
<th>End of Year Headcount</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNCs with Alumni Supervisors</td>
<td>842</td>
<td>959</td>
<td>1,205</td>
<td>1,221</td>
<td>1,132</td>
<td>1,313</td>
</tr>
<tr>
<td>HNCs without Alumni Supervisors</td>
<td>2,258</td>
<td>2,198</td>
<td>1,938</td>
<td>1,930</td>
<td>1,956</td>
<td>1,719</td>
</tr>
</tbody>
</table>
Alumni Comparison Groups
Promotion Rates by Training Course

While the overall differential between Alumni and Non-Alumni is less clear, Knowledge Management Alumni are promoted at more than twice the rate of the other Alumni and the overall NCI average.

<table>
<thead>
<tr>
<th>Course</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM</td>
<td>52</td>
<td>61</td>
<td>72</td>
<td>78</td>
<td>80</td>
<td>81</td>
</tr>
<tr>
<td>Executive Coaching</td>
<td>57</td>
<td>67</td>
<td>83</td>
<td>100</td>
<td>112</td>
<td>119</td>
</tr>
<tr>
<td>KM Mentor</td>
<td>21</td>
<td>26</td>
<td>32</td>
<td>39</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>LEAP</td>
<td></td>
<td>14</td>
<td>14</td>
<td>17</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>SEED</td>
<td>38</td>
<td>47</td>
<td>52</td>
<td>52</td>
<td>62</td>
<td>61</td>
</tr>
<tr>
<td>TES</td>
<td>1</td>
<td>5</td>
<td>30</td>
<td>58</td>
<td>74</td>
<td>99</td>
</tr>
</tbody>
</table>

- Promotions classified based on NOAC action type.
- All Other Courses include: Coaching, LEAP, SEED, KM Mentor and TES.
Knowledge Management Alumni are promoted at almost twice the rate of Non Alumni in the same grades.

### Promotion Rate

- KM Alumni
- KM Comparison Group

### Average Headcount

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM Alumni</td>
<td>52</td>
<td>61</td>
<td>72</td>
<td>78</td>
<td>80</td>
<td>81</td>
</tr>
<tr>
<td>KM Comparison Group</td>
<td>2,846</td>
<td>2,883</td>
<td>2,879</td>
<td>2,774</td>
<td>2,722</td>
<td>2,645</td>
</tr>
</tbody>
</table>

- Promotions classified based on NOAC action type.
- Non-Alumni comparison group only includes non-supervisors in the same grade levels as the KM Alumni population.
No TES Alumni have terminated from 2009 through 2012. Non-Alumni in the same grades average above 6% turnover rate annually.

<table>
<thead>
<tr>
<th>Average Headcount</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>TES Alumni</td>
<td>1</td>
<td>5</td>
<td>30</td>
<td>58</td>
<td>74</td>
<td>99</td>
</tr>
<tr>
<td>TES Comparison Group</td>
<td>2,489</td>
<td>2,526</td>
<td>2,538</td>
<td>2,464</td>
<td>2,393</td>
<td>2,339</td>
</tr>
</tbody>
</table>

- Non-Alumni comparison group only includes employees in the same grade levels as the TES Alumni population.
KM Turnover Rate v Comparison Group

Average Headcount

<table>
<thead>
<tr>
<th>Year</th>
<th>KM Alumni</th>
<th>KM Comparison Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>52</td>
<td>2,846</td>
</tr>
<tr>
<td>2010</td>
<td>61</td>
<td>2,883</td>
</tr>
<tr>
<td>2011</td>
<td>72</td>
<td>2,879</td>
</tr>
<tr>
<td>2012</td>
<td>78</td>
<td>2,774</td>
</tr>
<tr>
<td>2013</td>
<td>80</td>
<td>2,722</td>
</tr>
<tr>
<td>2014</td>
<td>81</td>
<td>2,645</td>
</tr>
</tbody>
</table>

- Turnover excludes retirements and IC transfers.
SEED alumni have had significantly lower turnover than their comparison group.

Turnover Rate

- Turnover excludes retirements and IC transfers.
Coaching Turnover Rate v Comparison Group

- Turnover excludes retirements and IC transfers.
Although a small group, LEAP alumni have experienced no turnover until recently in 2014.

- Turnover excludes retirements and IC transfers.
Alumni Multiple Courses
Turnover Rate Comparison

Alumni taking multiple courses have experienced lower turnover than their comparison group.

- Turnover excludes retirements and IC transfers.
Statistical Analyses
Statistical Confirmatory Analysis

• Tests
  – Chi-Square Test of Independence
    • Few data assumptions to meet
    • Useful for categorical data
  – Independent Samples T-Test
    • Useful for continuous data

• Methods
  – Analyses performed for each year increased precision and to avoided double counting individuals
  – Computational software SPSS utilized for analyses

• Limitations
  – Some sample sizes were too small or unbalanced to perform statistical analysis
Primary findings were statistically confirmed, with analyses detecting effects for turnover, performance rates, monetary awards, and promotion rates.

The p-value is the probability of the observed effects resulting by mere chance. If this probability is .05 or lower, we reject chance as an explanation and can determine there is a real effect.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi Square</td>
<td>15</td>
<td>Turnover Rate</td>
<td>.037**</td>
<td>.093*</td>
<td>.085*</td>
<td>.008***</td>
<td>.066*</td>
<td>.093*</td>
</tr>
<tr>
<td>Chi Square</td>
<td>19</td>
<td>Overall High Performer Rate</td>
<td>.004***</td>
<td>&lt;.001***</td>
<td>&lt;.001**</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Chi Square</td>
<td>50</td>
<td>Non-Supervisor High Performer Rate</td>
<td>.366</td>
<td>.001***</td>
<td>.038**</td>
<td>&lt;.001***</td>
<td>.006***</td>
<td>.156</td>
</tr>
<tr>
<td>Chi Square</td>
<td>50</td>
<td>Supervisor High Performer Rate</td>
<td>.005***</td>
<td>&lt;.001***</td>
<td>&lt;.001**</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Chi Square</td>
<td>51</td>
<td>Managed High Performer Rate</td>
<td>.007***</td>
<td>.001***</td>
<td>&lt;.001**</td>
<td>.064*</td>
<td>.579</td>
<td>.654</td>
</tr>
<tr>
<td>T-Test</td>
<td>52</td>
<td>Supervisory Employees Monetary Awards</td>
<td>.059*</td>
<td>.009***</td>
<td>&lt;.001**</td>
<td>&lt;.001***</td>
<td>.006***</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>T-Test</td>
<td>21</td>
<td>All Employees Monetary Awards</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
<td>&lt;.001**</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Chi Square</td>
<td>22</td>
<td>Director Awards</td>
<td>N/A</td>
<td>.069*</td>
<td>&lt;.001**</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>T-Test</td>
<td>24</td>
<td>Managed Promotion Rate</td>
<td>.0015***</td>
<td>.025**</td>
<td>.0035***</td>
<td>.0095***</td>
<td>.009***</td>
<td>&lt;.001***</td>
</tr>
</tbody>
</table>

- Statistically significant, $p<.05**$ or $p<.01***$
- Approaching significance, $p<.10*$
HCMI Workforce Analytics Methodology
**Keys to Success:**

• Formalize Workforce Strategy
• Find the Right Key Metric Indicators
  – Link to Critical Workforce Questions
• Create Data and Reporting Standards
• Build Analytics Skills and Create Focus
• Integrate Disparate Datasets
  – (BI or HRIS systems)
• Strong Processes and Tools
  – Governance and Oversight
  – Build or buy analysis tools; Automation
• Insights and Answers to Key Questions
• Quantify Financial Impact and ROI
• Interventions and Change Management
Workforce Analytics Journey

Stage In Evolutionary Model

- **Start**
  - Awareness
- **Action**
- **Competence**
- **Effectiveness**
- **Excellence**

Roadmap Steps Toward Excellence

1. Select Measures that Align HR and Business Strategy
2. Launch Analytic Center of Excellence
3. Metrics and Benchmark Standards
3+. Conduct Root Cause Analysis
4. Advanced Metrics use + ROI Analysis
5. Workforce Analytics that Quantify Impact

Capability Milestones

- Metrics Framework and Scorecards
- KPIs and Automated Reporting
- Standards + Integrated Data Analysis
- Hot Spot Identification and Trending
- Performance and Retention Modelling
- Key Driver of Business Strategy

Review and Optimize Along the Way
Workforce Standards and Metrics
Workforce Data Integration Blueprint

• **Data Integration:**
  ✓ Comprehensive systems, data flow and structure
  ✓ Data quality, gap identification, cleansing and proxies

• **Workforce Standards:**
  ✓ Metrics standards, definitions, formulas and predictive linkage to business results
  ✓ HCMI job framework, transaction and timing standards

• **Analytics and Planning Model:**
  ✓ Data integration, positioning, segmentation, trending and predictive modeling
  ✓ Structured analysis, insights and ROI across the talent management lifecycle
Importance of Defining Job Roles

• **Accurate** workforce segmentation drives **on demand workforce analysis** and helps identify key areas of opportunity. Quantify the value and impact of interventions specific to each Job Role.

• Categorizing skills into Job roles enables quantitative forecasting. Additional Job Roles that emerge need to be added to the demand forecasting process. Job roles should have **significant** mass and **meaningful** skill sets.

• The ultimate goal is **not to understand the number of people** you need, but to understand the skill gaps. The problem which most organizations have is not so much the number of staff, but rather the correct mix of staff.
Workforce Standards Overview

Prerequisites and Basics

Process Documentation
1. Documented process flow diagrams + Documented data flow diagrams
2. Documentation of all data transfers between systems, key fields, relationships, trigger points and timing
3. Workforce data element inventory across systems, by system, field, source and use

Systems and Data Knowledge/Access
1. Knowledge of all systems housing workforce data and understanding regarding sources and uses for such systems and data
2. System and data access to relevant workforce/human capital data
3. Knowledge and understanding (ideally thru detailed assessment of data audit of overall system data accuracy and efficacy

Core Standards

Report Timing and Cutoff Standards
• Eliminate transaction backdating, enforce specific, cutoff dates/times for workforce data transaction entry/processing. Activity beyond cutoff dates becomes a transaction for next period
• Standardize, document and control all workforce system data transfers. Monitor data transfer trigger points and cutoffs
• Standardize routine system updates/maintenance

Transaction Processing Guidelines
• Issue standards/guidelines for manual or semi-manual data entry of workforce data. Ensure that every similar transaction is coded and entered
• Frequently conduct system and data tests/reviews to ensure data accuracy
• Periodic audit of workforce data to ensure accuracy & adherence to standards
• Roll based security for system and data access to relevant human capital data

Note: See HCMI’s Human Capital Metrics Handbook for Workforce Metrics Standards.
Human Capital Management Institute

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