Evaluating Leadership Development in an R&D Context: Assessing Alpha, Beta, & Gamma Change

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Background

• There’s a widely accepted assumption that effective leadership is a key to CRC success but…

• Center Directors face a unique leadership challenge in that they must
  – Span boundaries across diverse constituencies (e.g., private and public sectors)
  – Coordinate the work of experts outside their own fields
  – Motivate others over whom they have little formal authority
  – Build and maintain climates to support creativity and innovation
  – Remain accountable to externally imposed operating guidelines
  – Achieve objectives within time-limited organizational lifespans

• As a result, previous leadership research is only partially applicable to this population.

• Research is needed that specifically addresses leadership of CRCs.
  – Coberly (2004): leadership predicts satisfaction and indirectly organizational commitment among faculty
**Project Objectives**

- Develop, implement, and evaluate an R&D-specific leader development intervention
- Donate standardized 360° feedback tool to the field to support future research and development efforts
Method

• Structured interviews of directors + constituents, content analyzed for performance dimensions
• Develop a tailored 360° feedback tool
• Use new tool in a feedback-based intervention
• Evaluate leaders’ change over a 3-6 month period
• Refine instrument and release
Sample Interview Response: Technical Expertise

“You’ve really got to have a lot of talent. You’ve got to understand the technology, for one thing. Even though some of the technology is pretty far away from your original training. You have to teach yourself some of these things because you’ve got to know what's going on in the center. That's tough.”
Sample Interview Response: Abrasiveness

“...all it takes is locking horns one time with a stubborn uninformed dean and you're in deep trouble. And you know it doesn't matter then—you can be worth, you know, 20 million dollars to the university and if you just tell the dean off, because of your impatience with their stupidity or with their failure to understand what you're doing, then you're toast because they will block you at every turn and they have that power and they exercise it and it’s naive to think they don't, because they do.”
Director
Performance Dimensions

- Interpersonal Skill
- Networking
- Embracing Ambiguity
- Broad Thinking
- Team Building & Maintenance
- Ambition & Productivity
- Ethics & Fairness

- Technical Expertise
- Obtaining Resources
- Navigating Bureaucracy
- Task Adaptability
- Balancing Competing Stakeholders
- Fostering Creativity

- Abrasiveness
- Disorganization
- Conflict Avoidance
Sample 360° Items

R&D Leadership Assessment

Instructions
The following items refer to aspects of your Center Director’s leadership. For each item, please indicate where your Director stands with regard to the behavior or characteristic described in the item.

<table>
<thead>
<tr>
<th>Items</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Personally writes proposals to obtain funding for the Center</td>
<td></td>
</tr>
<tr>
<td>Seeks funding from public sector sources</td>
<td></td>
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<tr>
<td>Seeks funding from private sector sources</td>
<td></td>
</tr>
<tr>
<td>Networking</td>
<td></td>
</tr>
<tr>
<td>Is well-networked in the industries relevant to the Center’s work</td>
<td></td>
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<tr>
<td>Seeks opportunities to build new relationships with industry members</td>
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<tr>
<td>Leverages professional relationships to benefit the Center’s work</td>
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<tr>
<td>Ambition &amp; Personal Productivity</td>
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<tr>
<td>Sets high goals—attempts to get a lot accomplished</td>
<td></td>
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<tr>
<td>Encourages others to get a lot accomplished</td>
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Networking

36. Is well-networked in the industries relevant to the Center’s work

37. Seeks opportunities to build new relationships with industry members

38. Leverages professional relationships to benefit the Center’s work

Ambition & Personal Productivity

7. Sets high goals—attempts to get a lot accomplished

8. Encourages others to get a lot accomplished
Leader Development

• Multisource performance assessment
  – Relevant perspectives in R&D
    ✓ PIs ✓ External advisors
    ✓ RAs ✓ Co-directors
    ✓ Funding agencies ✓ Admin staff
    ✓ Industry partners ✓ Self

• Feedback with guided interpretation and development planning

• Ongoing coaching over 3-6 months
Evaluation of Gamma, Beta, & Alpha Change

- 360° assessment re-administered
- Gamma change assessed via SMGCFA
- Beta change assessed via IRT
- Alpha change assessed in context of gamma and beta change, if occurred
Key Features & Contributions

• Tailored assessment of R&D-specific performance dimensions

• Beta and gamma change as both a measurement problem AND legitimate impact

• IRT-based analyses permit “corrections” for beta/gamma change allowing alpha change measurement

• Specific change type X dimension effects can be linked to traditional center-level outcomes—getting inside the Black Box

• Web-based director-initiated system permits frequent re-assessments to support continuous self-development
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How to Get the Handout

• Request via e-mail from bart_craig@ncsu.edu

• Leave your contact info after the session