Developing Scientific and Technological Leadership and Human Capital: Impact of IUCRC Directorship on Career Paths and Achievement

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Goal & Framework

- NSF is interested in the career implications of the IUCRC director role

- Project goal:
  
  To determine the professional trajectories and achievements of IUCRC directors and the extent to which these outcomes can be attributed to their IUCRC experience and training.

- Scientific & Technical Human Capital perspective
  - Social capital: Networks and professional linkages
  - Human capital: KSA’s, leadership roles
Project Method

- Population: IUCRC center directors
  - Current & former
  - Founding & succeeding
  - Center & site

- Sample frame
  - Tenured or tenure track faculty when role was assumed
  - Assumed role prior to ~2004
  - Estimated sample: 150-200

- Exploratory, qualitative
  - Focus group, interview

- Quantitative
  - CV Analysis: pre/post bibliographic
  - Short web-based survey

- Case study interviews
  - Selection criteria TBD, but something like...
    » Primarily an admin/managerial path
    » Primarily a technical/scientific path
• Focus group with 5 directors; interview with 1 director

• Some early insights
  – Risk v Rewards
    » Reduced scholarly productivity, Role strain
    » Leverage resources to contribute to a field
  – Changing social networks
    » Reduced interaction with colleagues
    » Increased interaction with industry and university admin
  – Dual ladders
    » Administrative OR technical ladder
    » Science-saturated administrative ladder
  – Centers, Directors, and Administrators
    » Center research is not always considered ‘real’ research by administrators
    » Many directors have received job offers… and turned them down
An Emerging Model

Context: NSF-IUCRC program

Predictors
- Recognition / Visibility
- Industry interaction
- Bureaucracy experience
- Business experience
- Leadership experience
- Working w/ diverse teams
- Role strain

Covariates & Moderators
- Center characteristics
- Director Type
- Prior experiences
- University climate
- Mentoring/formal or OJT
- Goals/Motivations
- Other demos

Outcomes
- Non-university roles
- University role changes
- Consulting opportunities
- Invitations to boards/panels
- Research productivity
- Changes in networks
Quantitative

• CV Analysis
  – Pros
    » Lots of rich data
    » Generally standardized format
    » Biographical
  – Cons
    » Time-intensive to input data
    » Relatively novel approach
    » Biographical

• Survey to complement CV data
  – Job offers or panel invitations turned down
  – Role satisfaction
  – Perceived impact of role on various career-related variables
One survey question might be:

- What impact did being a center director have on your:
  - Interactions w/ department colleagues
  - Interactions with industry
  - Opportunities for consulting with industry
  - Scholarly productivity
  - Availability to serve on PhD committees

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Survey challenges
- Retrospective
- Branching and skipping to account for different director experiences (e.g., site v founding), timeframes (when and how long in the role), and current status (still director, another role, or retired).
- Responses
Interviews

- Further explore CV & survey results

- Segment directors into groups—e.g., technical vs. managerial

- 20-40 semi-structured interviews to examine:
  - the respondent’s current position and achievements in more detail
  - factors that the respondent believes affected their career path and achievements

- Goal: construct a series of illustrative case studies of prominent directors.
Timeline & Endgame

- Report w/ case studies
- Causal model/ framework
- Publications

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