HSR&D
Health Services Research & Development Service

Ci2i
CENTER FOR INNOVATION TO IMPLEMENTATION

VA PAHCS
Veterans Affairs Palo Alto Health Care System

Evaluation of HSR&D Career Development Award Program: Phase I

John Finney, PhD

July 8, 2014

Poll Question

- What is your role in the CDA program?
  - Current CDA recipient
  - Former CDA recipient
  - Current Mentor
  - Former Mentor
  - Multiple Roles (both CDA recipient and Mentor)
  - Other

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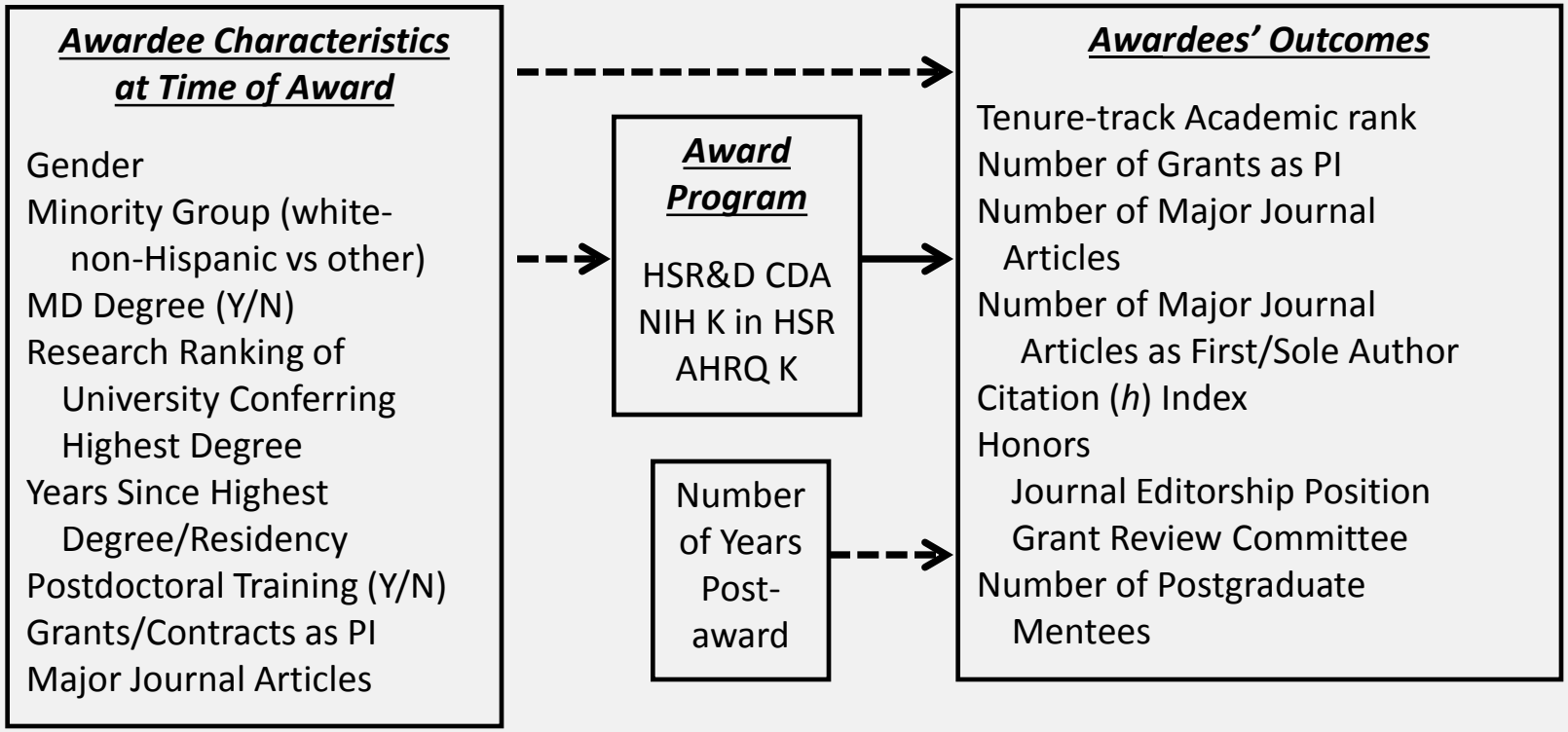
How does one gauge the quality of a research career development program?

- Compare funded and unfunded applicants?
- Compare award recipients with those from other highly-regarded programs?

Primary Aim 1

Compare the academic advancement and research productivity of HSR&D Career Development Awardees (CDAs), National Institutes of Health (NIH) K awardees in health services research and Agency for Healthcare Research and Quality (AHRQ) K awardees.

Figure 1. Conceptual Model for ANCOVA Analyses Comparing HSR&D, NIH and AHRQ Awardees



Note: Dashed arrows indicate the control of covariates via ANCOVA. "Major" journal articles are reports of empirical research, reviews, guideline reports, extended commentaries, etc. (i.e., not editorials, letters to the editor, brief commentaries or book reviews).

Participants

- 244 HSR&D CDAs
  219 (90%) responded (124 primary mentors)
- 226 NIH K (K01, K08 or K23) awardees (71% of 318 eligible) - 154 (68%) responded
- 91 eligible (of 120 total) AHRQ K (K01, K08) awardees 69 (76%) responded (FY2000 first yr)

Methods

- Data sources: (1) Curriculum vitae solicited by evaluation team via email, telephone, and/or (faxed) letter in calendar year 2011 and (2) Thomson Reuters WOK Citation Index.

- Positions and productivity for the HSR&D awardees are from year of their only award or their “relevant award.”

Methods

- “Relevant award” = RCD, MREP or CDA-2 (comparable to individual-mentored K awards).

- For Aim 1, compared (a) all HSR&D CDAs with all NIH K awardees from 1991 to 2010, and (b) HSR&D, NIH and AHRQ K awardees from 2000 to 2010.

Number of HSR&D Career Development Awards Received

Type of HSR&D Award (not mutually exclusive)	N	% (of 219)
Entry-level Awards		
AI	11	5%
CDA-1	5	2%
Mid-level Awards		
RCD	114	52%
MREP	33	15%
CDA-2	44	20%
Advanced or Transition Awards		
ARCD	68	31%
CDTA	13	6%
Unspecified	1	<1%
Multiple awards	67	31%
Mean number of awards	1.32	

Figure 2. Number of HSR&D Awardees by Year

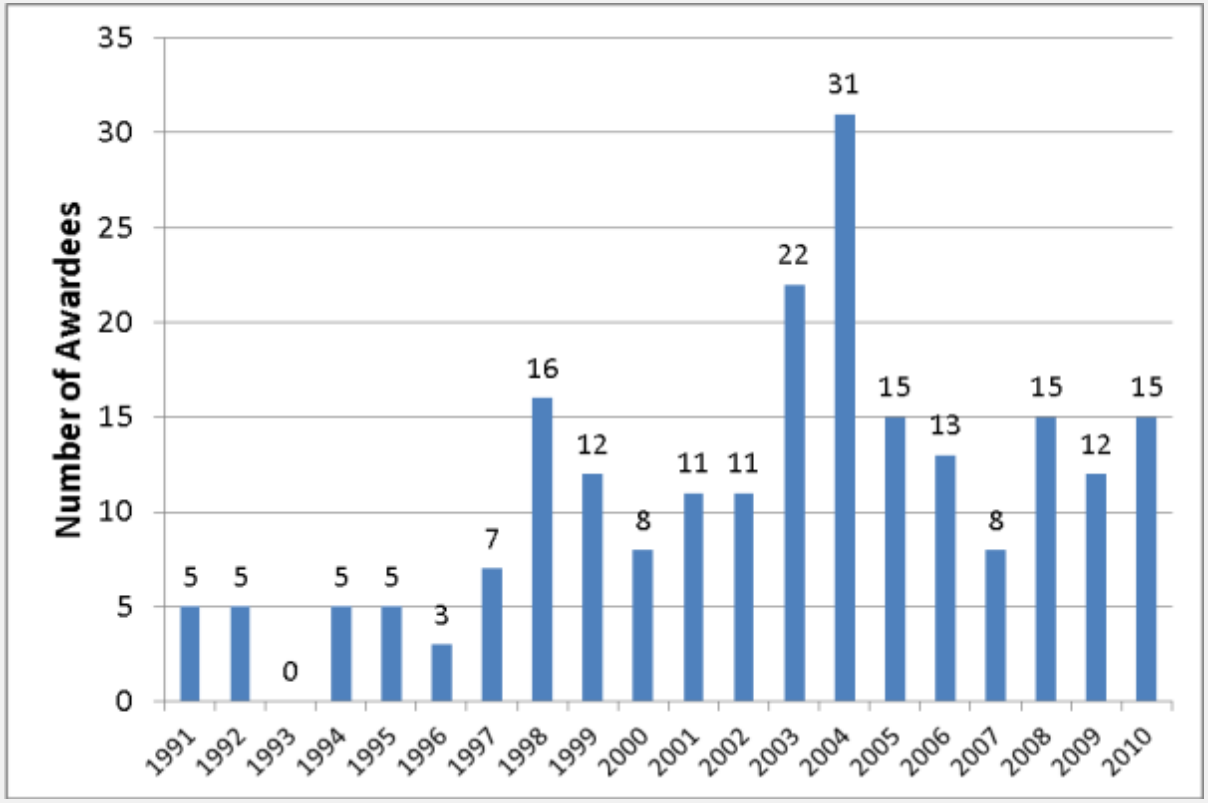


Figure 3. Number of NIH K Awardees by Year

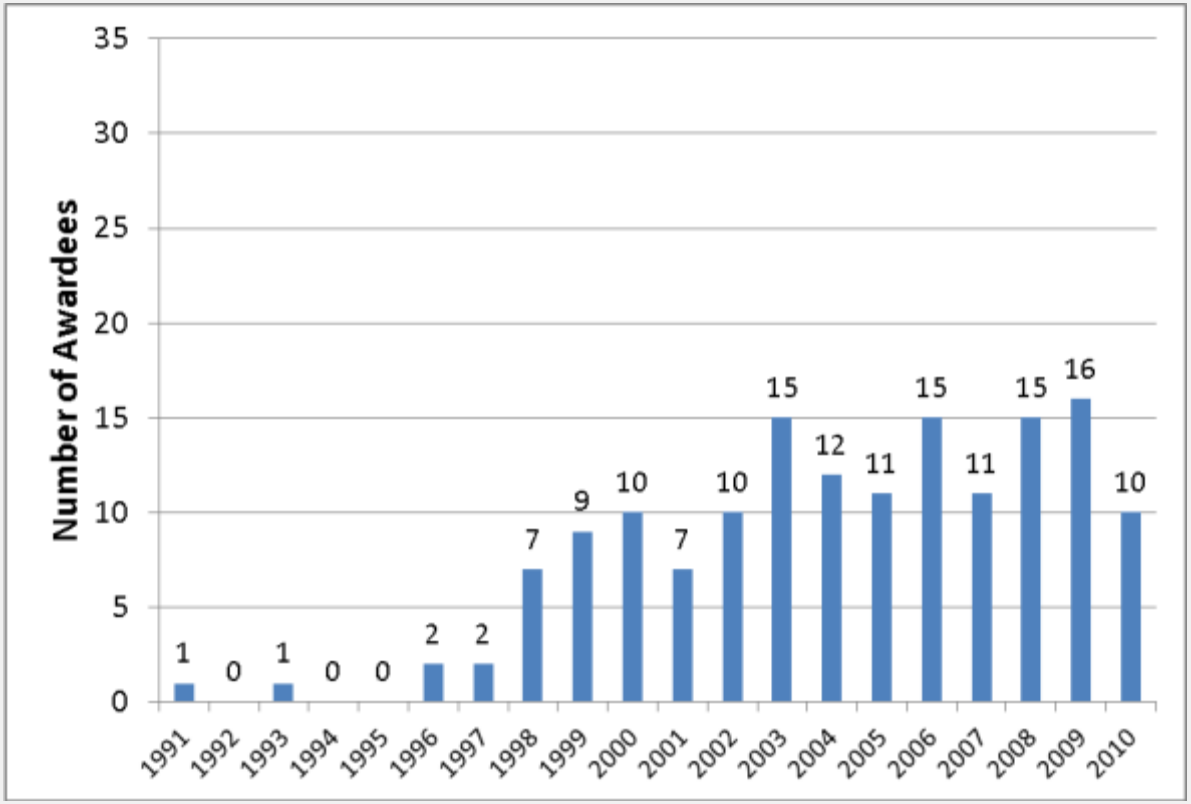
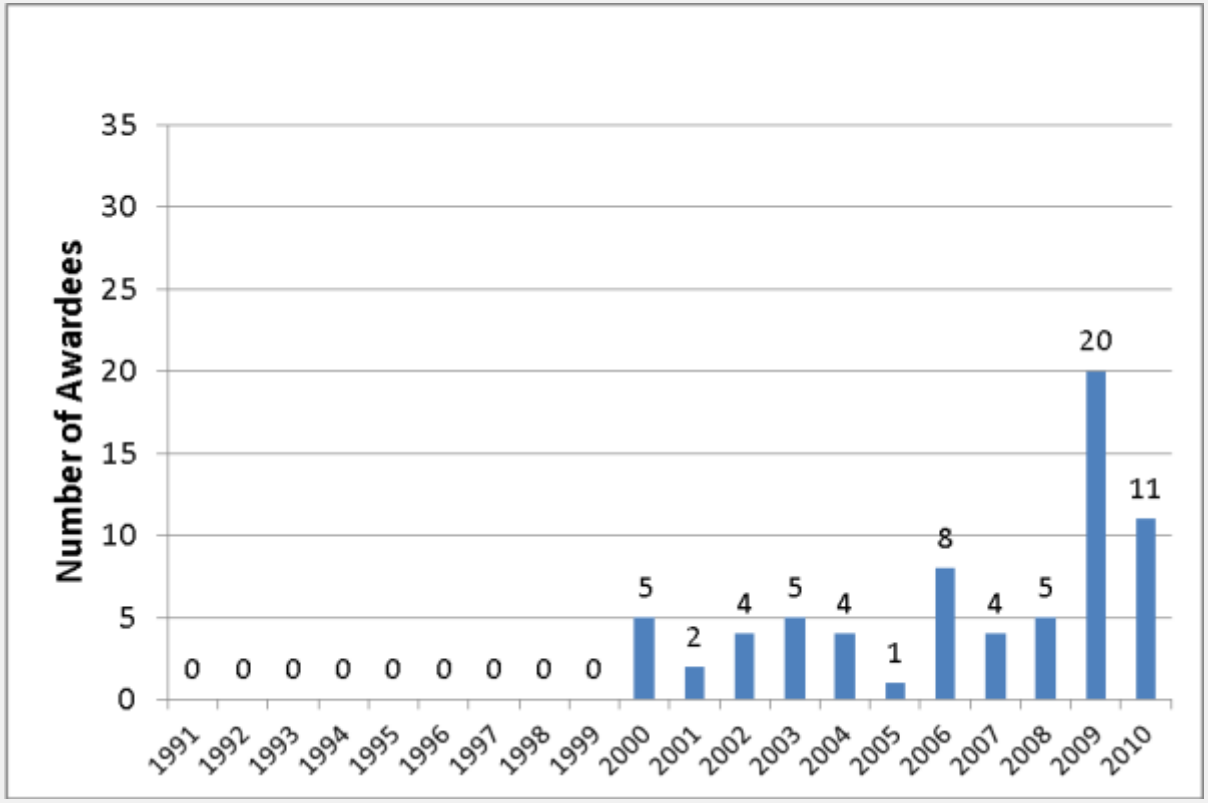


Figure 4. Number of AHRQ K Awardees by Year



Participants' Characteristics

	All Awardees		Awardees 2000-2010		
Characteristic	**HSR&D (n=219) Mean**	**NIH K (n=154) Mean**	**HSR&D (n=161) Mean**	**NIH K (n=132) Mean**	**AHRQ K (n=69) Mean**
Age at (relevant) award	37.3	37.9	37.1	38.3	38.4
Years since highest degree or residency at time of (relevant) award	5.9	6.7	5.4	6.9	6.5
Years since (relevant) award	8.3	6.9	6.0	5.8	4.5

Gender and Racial/Ethnic Background of HSR&D, NIH and AHRQ Awardees

	All Awardees		Awardees 2000-2010		
Demographic Characteristic	**HSR&D (n=219) %**	**NIH K (n=154) %**	**HSR&D (n=161) %**	**NIH K (n=132) %**	**AHRQ K (n=69) %**
Female	43%	54%	47%	58%	48%
Race/Ethnicity					
White Non-Hispanic	82%	72%	81%	68%	77%
Asian	7%	14%	8%	15%	15%
Hispanic/Latino/Latina	3%	4%	3%	5%	0%
African American/Black	2%	5%	2%	5%	3%
Mixed Race	2%	1%	3%	2%	4%
American Indian/Alaskan Native	0%	1%	0%	1%	0%
Unknown/Missing	4%	4%	4%	5%	1%
Minority Group	14%	24%	15%	27%	22%

Highest Degrees for HSR&D, NIH and AHRQ Awardees

	All Awardees		Awardees 2000-2010		
Highest Degree	**HSR&D (n=219) %**	**NIH K (n=154) %**	**HSR&D (n=161) %**	**NIH K (n=132) %**	**AHRQ K (n=69) %**
MD Degree	66%	66%	56%	64%	71%
PhD Degree	32%	30%	42%	33%	20%
Other Doctoral Degree	2%	4%	2%	4%	9%

Outcome:
Tenure-track Academic Positions of HSR&D, NIH and AHRQ Awardees

	All Awardees		Awardees 2000-2010		
Outcome	**HSR&D (n=219) Mean or %**	**NIH K (n=154) Mean or %**	**HSR&D (n=161) Mean or %**	**NIH K (n=132) Mean or %**	**AHRQ K (n=69) Mean or %**
Adjusted Mean Academic Rank	1.2	1.3	.9	1.0	1.0

Grants as PI for HSR&D, NIH and AHRQ Awardees

	All Awardees		Awardees 2000-2010		
Outcome	**HSR&D (n=219)**	**NIH K (n=154)**	**HSR&D (n=161)**	**NIH K (n=132)**	**AHRQ K (n=69)**
Total grants (PI)	1,147	564	547	401	146
Total grants (PI) over $100,000	585	226	234	157	57

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Total grants (PI)	1,147	564	547	401	146
Total grants (PI) over $100,000	585	226	234	157	57
Adjusted mean number of grants (PI)	4.8	4.3	3.2	2.9	2.7
Adjusted mean number of grants (PI) over $100,000	2.4* (n=154)	1.8 (n=91)	1.3 (n=107)	1.2 (n=76)	1.2 (n=58)

*p <.05 difference between all HSR&D and NIH K awardees.

Number of Major Journal Articles

	All Awardees		Awardees 2000-2010		
Outcome	**HSR&D (n=219)**	**NIH K (n=154)**	**HSR&D (n=161)**	**NIH K (n=132)**	**AHRQ K (n=69)**
Major journal articles	9,350	4,234	4,346	2,949	1,271
Major journal articles as first or sole author	2,480	1,497	1,449	1,053	527

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Major journal articles	9,350	4,234	4,346	2,949	1,271
Major journal articles as first or sole author	2,480	1,497	1,449	1,053	527
Adjusted mean number of major journal articles	39.0*	32.8	25.3	22.8	21.6
Adjusted mean number of major journal articles as first or sole author	10.4	11.0	8.4	8.1	8.8
Adjusted citation (*h*) index	15.8	15.6	12.2	12.9	12.0

*p <.05 difference between all HSR&D and NIH K awardees.

Adjusted Predicted Probabilities of Honors for HSR&D, NIH and AHRQ Awardees

	All Awardees		Awardees 2000-2010		
Outcome	**HSR&D (n=219)**	**NIH K (n=154)**	**HSR&D (n=161)**	**NIH K (n=122)**	**AHRQ K (n=69)**
Journal editorship/ editorial board (Y/N)	33%	40%	23%	27%	32%
Grant review committee (Y/N)	15%	11%	10%	8%	6%

Adjusted Mean Number of Post-graduate Mentees for HSR&D, NIH and AHRQ Awardees

	All Awardees		Awardees 2000-2010		
Outcome	**HSR&D (n=183) Mean**	**NIH K (n=110) Mean**	**HSR&D (n=133) Mean**	**NIH K (n=95) Mean**	**AHRQ K (n=53) Mean**
Adjusted Number of Mentees	8.5	7.3	6.7	5.5	7.2

VA-Related Outcomes for HSR&D CDAs

Outcome	HSR&D CDAs (n=219) % or Mean
VA-related Outcomes	
Retention in VA	80%
Retention in VA Research	74%
QUERI Involvement Mean	0.8
Any QUERI Involvement	41%
Workgroup Member or PI on Local QUERI Project = 1	9%
Executive Committee Member or PI on Either RRP or SDP = 2	27%
Research Director, or Clinical, or Implementation Research Coordinator = 3	5%

Conclusion: Aim 1

- The HSR&D CDA program has been selecting promising applicants for CDAs and mentoring them very effectively, as indicated by their advancing in academic positions, securing grants, publishing, garnering honors and mentoring young investigators at levels that are at least equal to those of K awardees from the highly regarded NIH and AHRQ programs.

- The HSR&D CDA program also has been quite successful in retaining outstanding health services researchers in VA where they can make substantial research contributions to help improve VHA care for Veterans.

Publishing Trajectories of Health Services Research Career Development Awardees

Max Halvorson, MA

July 8, 2014

Research Career Development Awardees

- How can we measure “success?”
  - Publications; Grants; Positions; Honors; Mentorship; Health Care Impact; Professional Networks; Satisfaction…

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- What factors are associated with high publishing rates?

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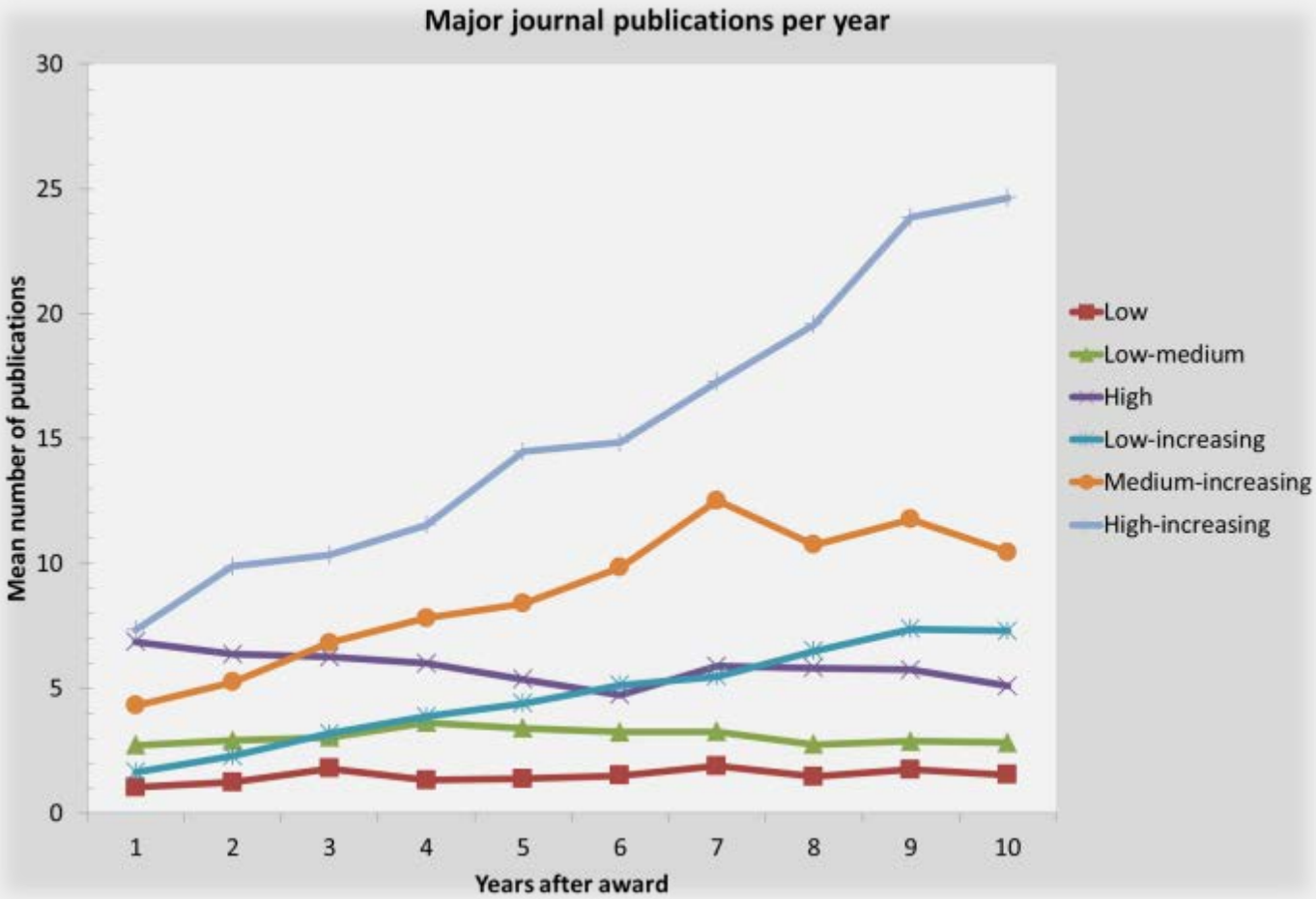
Research Career Development Awardees

- How can we measure "success?"
  - Publications; Grants; Positions; Honors; Mentorship; Health Care Impact; Professional Networks; Satisfaction…
- Do some awardees publish more than others?
- What factors are associated with high publishing rates?
- How do publishing rates unfold over time?
- What is the role of collaboration in publishing in health services research?

Analyses

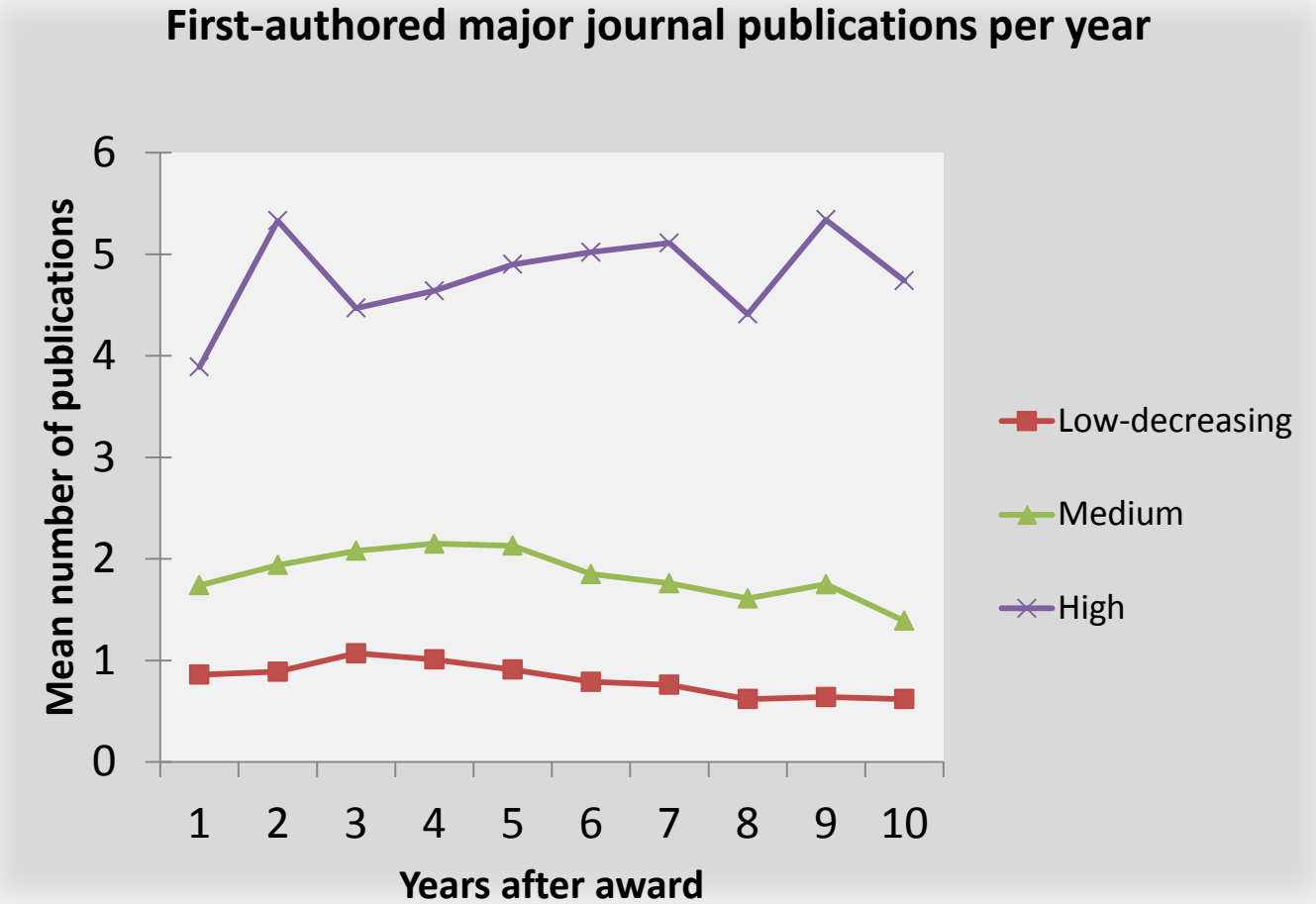
- Used semi-parametric group-based modeling, a technique for identifying latent trajectory groupings
- Explored differences between trajectory groups

Results – Publishing Trajectories for all Publications



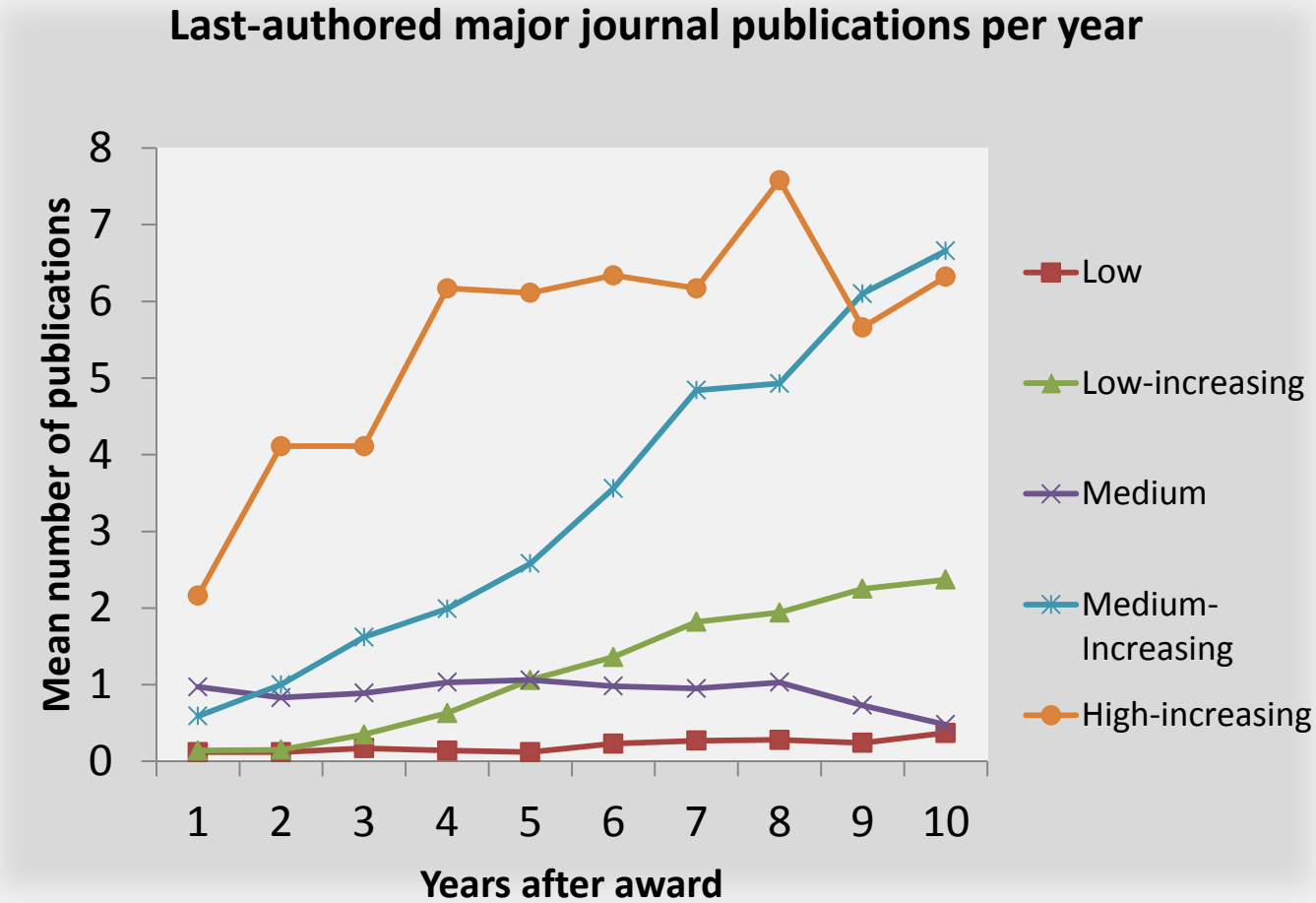
L (n=69); L-M (n=101); H (n=49); L-I(n=140); M-I (n=56); H-I (n=27)

Results – Publishing Trajectories for First/Sole Author Publications



L-D (n=239); M (n=174); H (n=29)

Results – Publishing Trajectories for Last/Senior Author Publications



L (n=69); L-M (n=101); H (n=49); L-I(n=140); M-I (n=56); H-I (n=27)

Results - Collaboration

	Low (N=69)	Low-medium (N=101)	High (N=49)	Low-increasing (N=140)	Medium-increasing (N=56)	High-increasing (N=27)	F or X^2	η^2 or V
Number of authors per publication	3.8	4.2	4.9	4.4	4.9	4.7	6.67***	.07

Results – Awardee Characteristics

	Low (N=69)	Low-medium (N=101)	High (N=49)	Low-increasing (N=140)	Medium-increasing (N=56)	High-increasing (N=27)	F or X^2	η^2 or V
Gender (% Female)	59%	52%	49%	50%	29%	26%	18.05**	.20
Race (% Minority)	27%	12%	22%	20%	21%	15%	6.16	.12
Age at award (years)	39.2	37.6	38.1	37.3	37.8	35.0	3.46**	.04
Highest Degree							11.68	.11
MD (%)	64%	58%	76%	71%	71%	70%		
PhD (%)	30%	38%	20%	26%	29%	29%		
Other (%)	6%	4%	4%	3%	0%	1%		

Results – Productivity Correlates

	Low (N=69)	Low-medium (N=101)	High (N=49)	Low-increasing (N=140)	Medium-increasing (N=56)	High-increasing (N=27)	F or X^2	η^2 or V
Grants as PI in 10 years since award	2.6	3.3	3.5	3.7	4.1	6.2	3.41**	.04
h-index (based on paper citations)	6.9	13.0	20.9	14.3	21.4	26.0	67.22***	.44

Findings – Publishing Rates and Collaboration

- Overall publication rates remained constant or increased
  - Awardees seem to generally succeed in publishing

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- Publishing rates as last author increased or stayed constant
- Awardees in higher trajectories had more authors per paper
  - Collaboration seems to be an element of publishing at a high rate
- Awardees who published at high rates had higher h-indices, more grants

Findings – Awardee Characteristics

- Women and older awardees tended to be in lower trajectories
  - More research needed to address root causes
- No effect of university ranking, MD vs. PhD, award type

Next Steps

- Phase I has focused on productivity and outcomes
- Phase II focuses on mechanisms; specifically on mentorship
- The second phase of the evaluation should provide more information on indicators of CDA applicants' potential (such as their research commitment), as well as characteristics of successful mentoring that can be used to improve an already successful program.

Phase II Evaluation of VA HSR&D Career Development Award Program: Mentoring Processes and Relationships

Ruth Cronkite, PhD

July 8, 2014

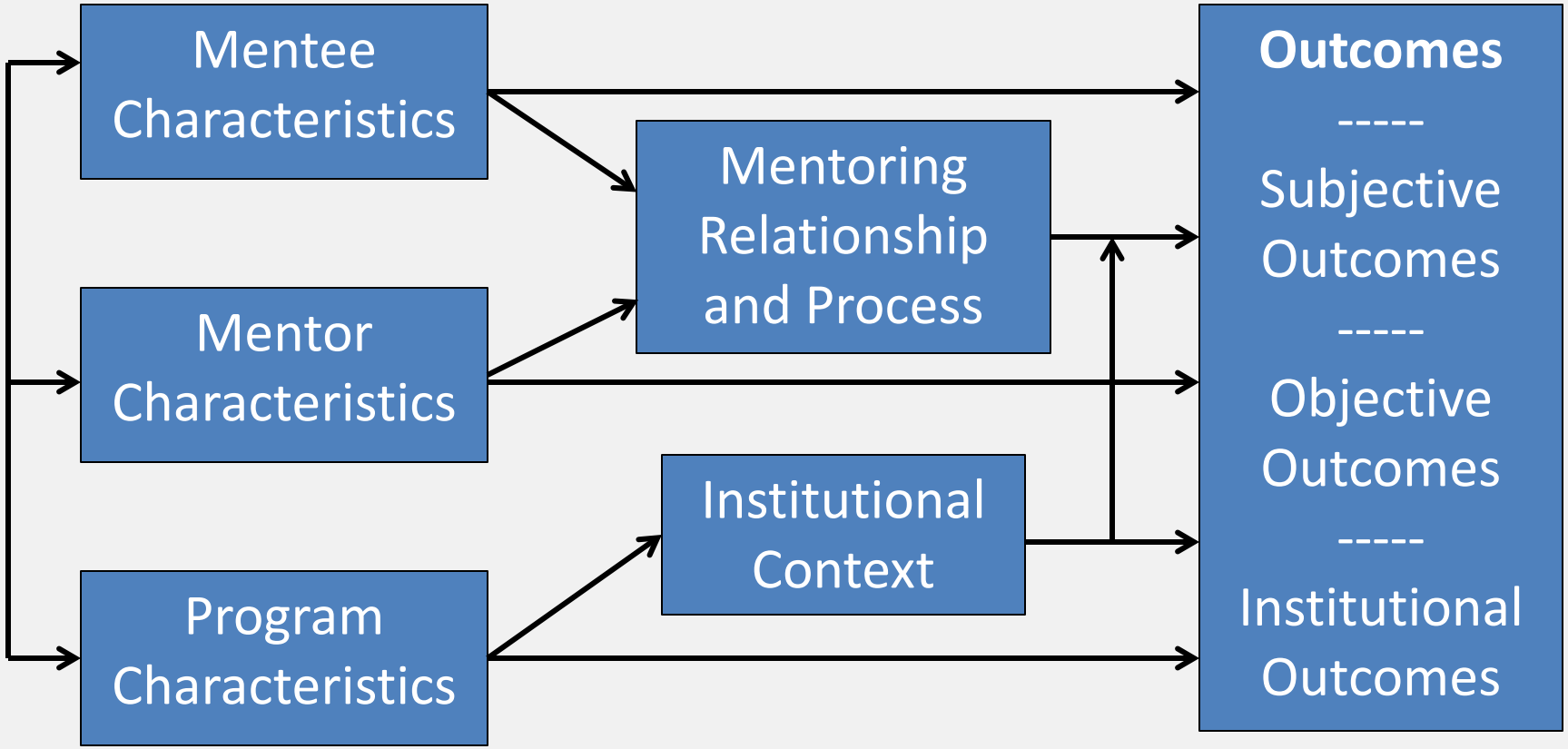
Phase II Evaluation

A critical feature of the VA HSR&D CDA Program for accomplishing its aims - an effective mentoring relationship and mentoring process - is a “black box” in Phase I. In Phase II , we propose two primary goals.

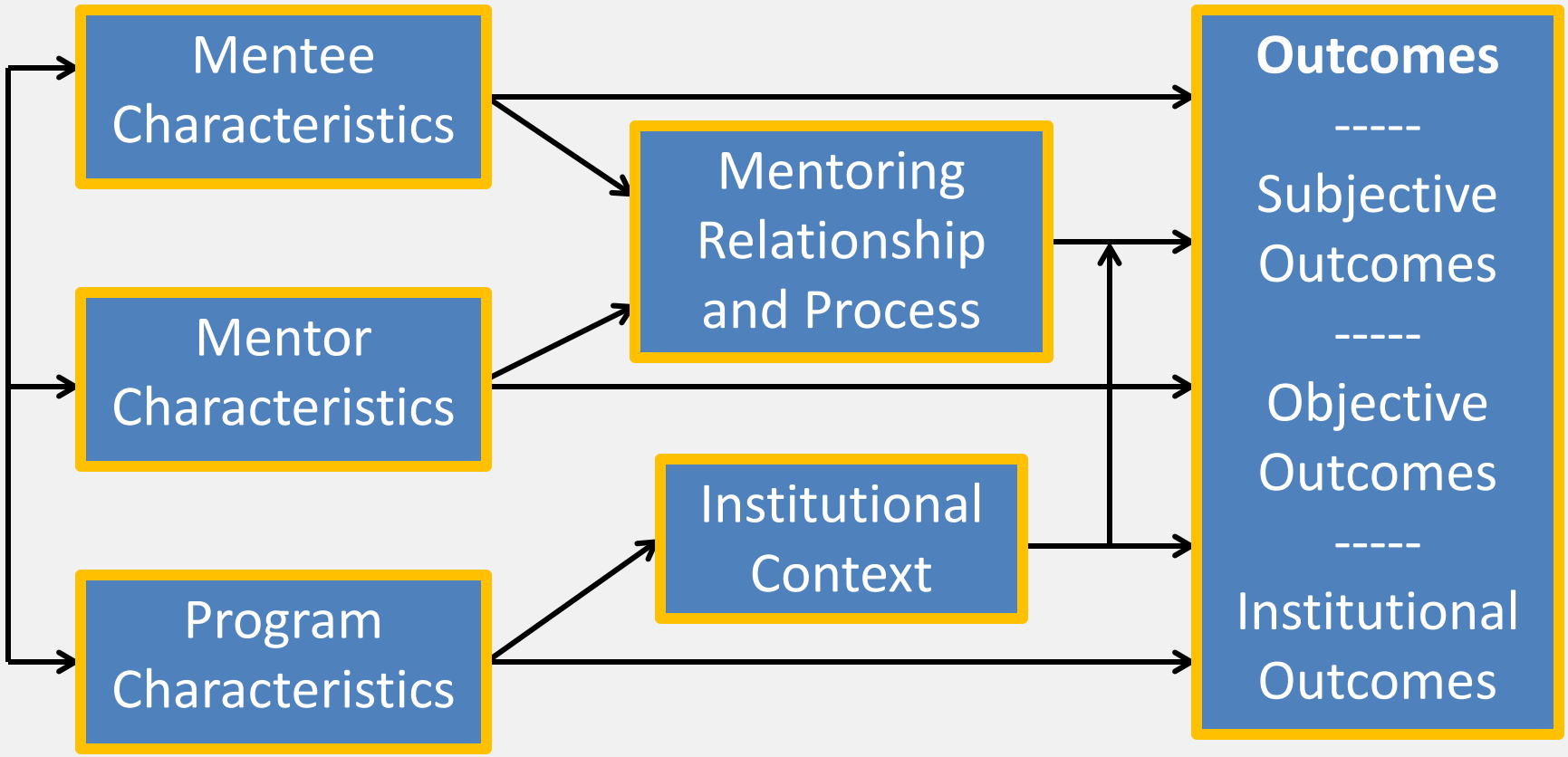
Goal 1: Examine aspects of the mentorship and their associations with subjective and objective mentee and mentor outcomes.

Goal 2: Obtain input from VA stakeholders (CDA mentees and mentors) on how to enhance the HSR&D CDA Program mentorship and on innovations in mentorship models.

Goal 1: Conceptual Model

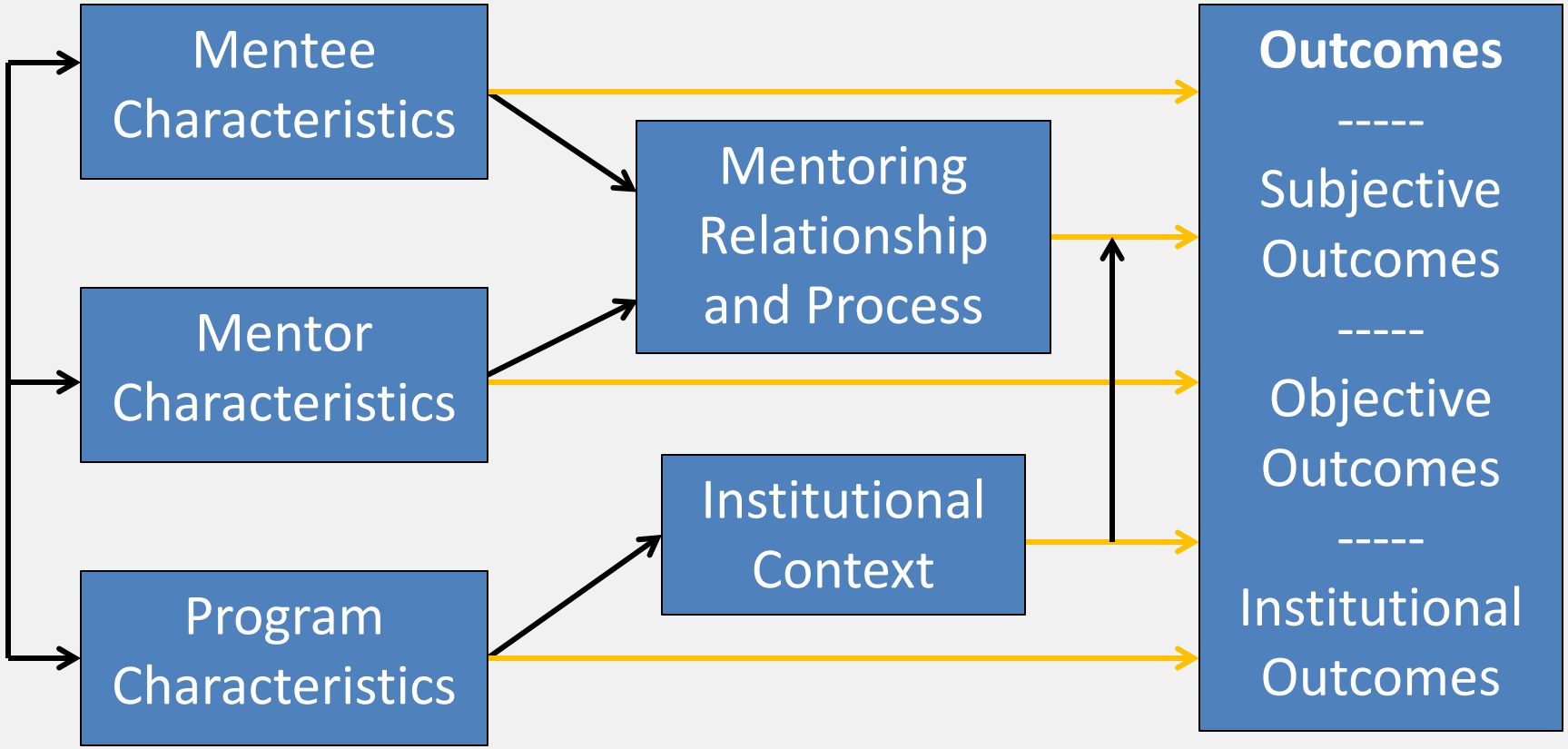


Aim 1



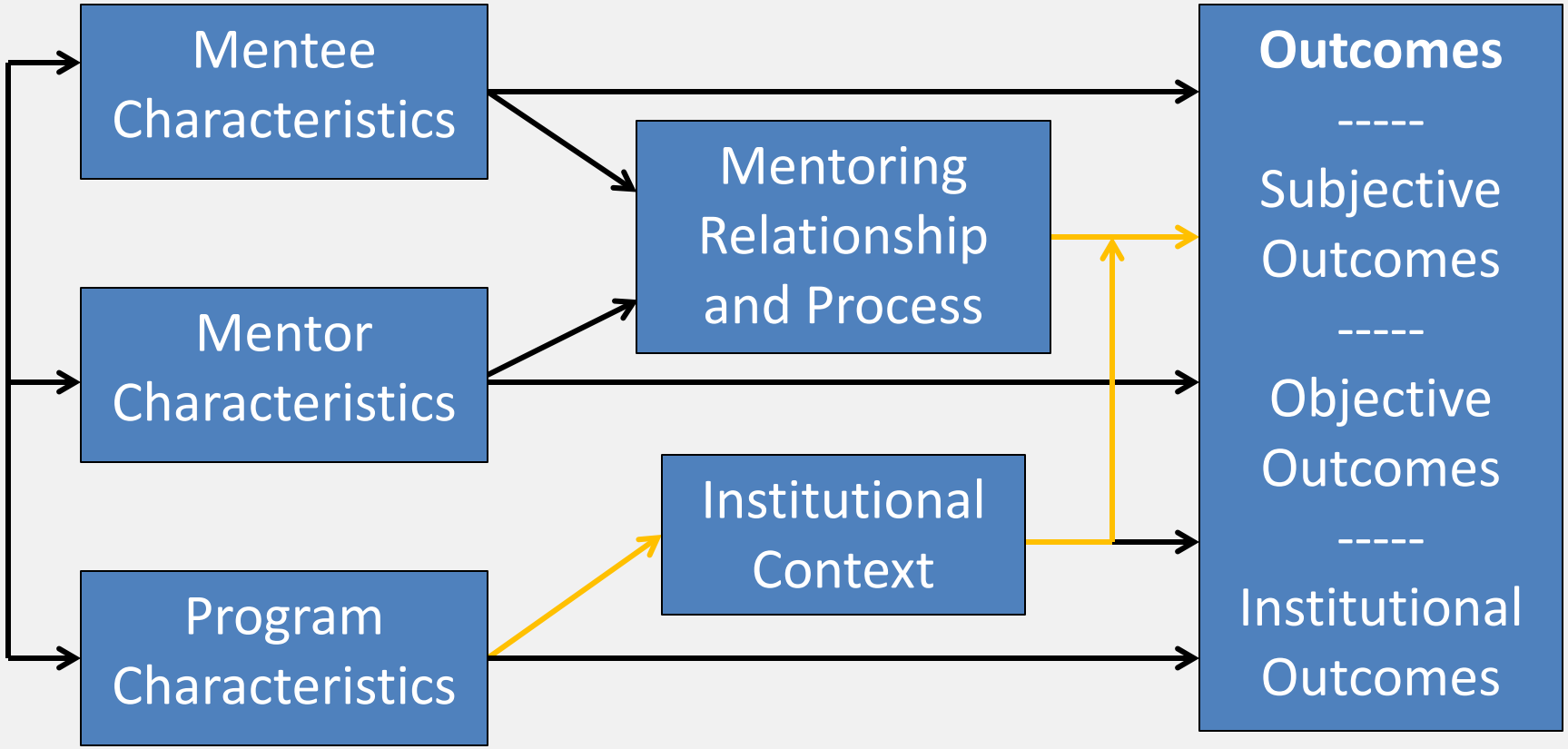
Aim 1: Characterize relevant aspects of mentoring relationships among CDAs and their mentor networks, as well as subjective outcomes of the mentorship.

Aim 2



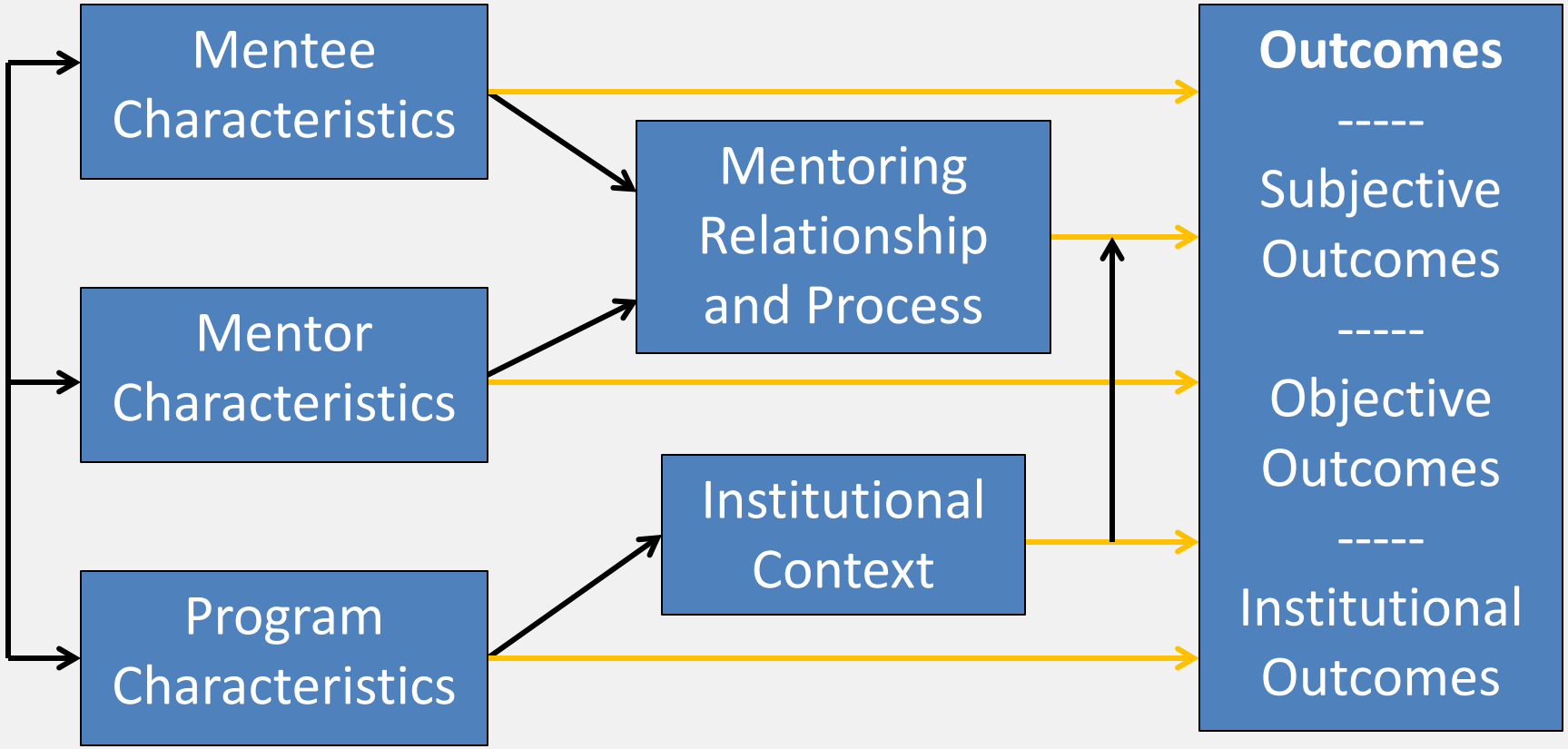
Aim 2: Identify characteristics of the mentoring relationship that are associated with mentee outcomes.

Aim 3



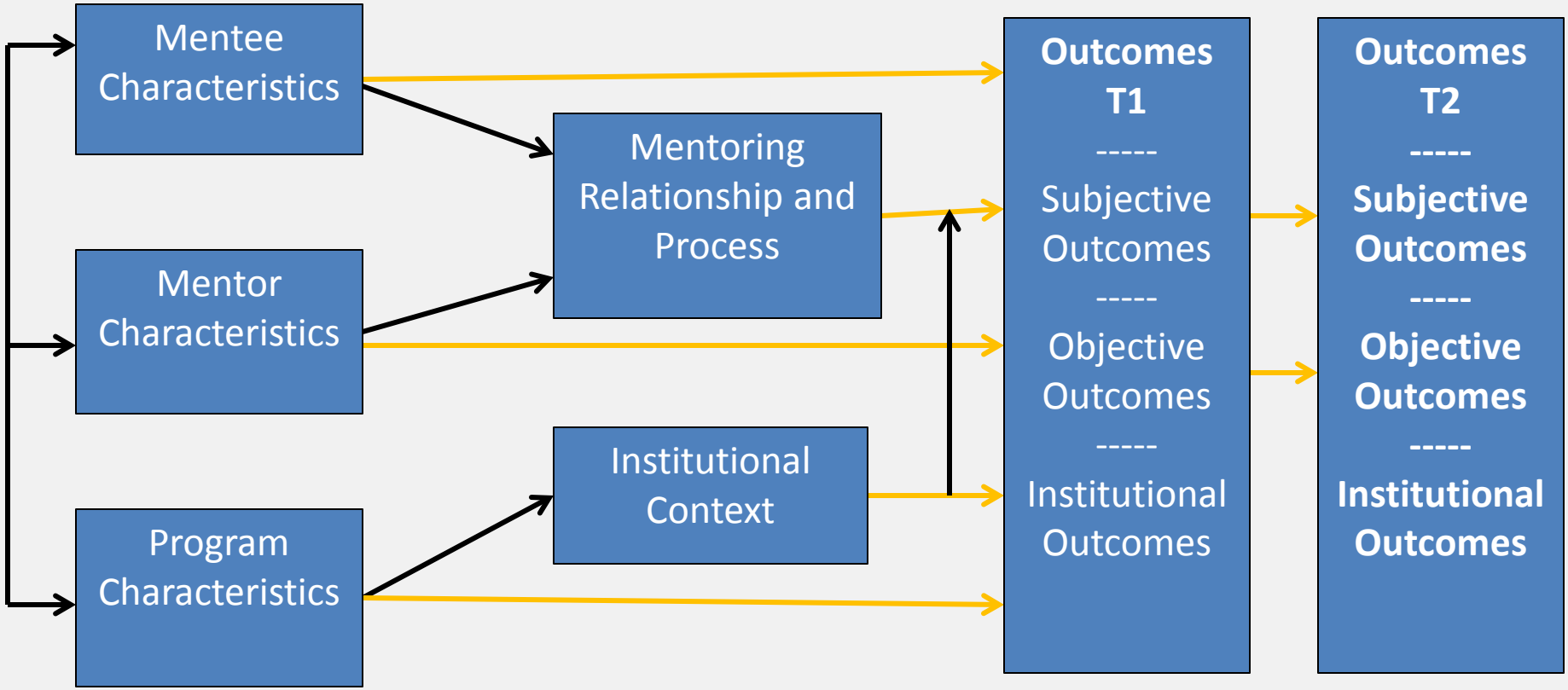
Aim 3: Examine potential moderators of the association between aspects of the mentoring relationship and mentee outcomes.

Aim 4



Aim 4: Identify characteristics of the mentoring relationship that are associated with **mentor** outcomes.

Aim 5



Aim 5: Conduct a prospective longitudinal pilot study of the effects of mentorship on outcomes for current CDAs.

Study Design

- CV data from Phase I (updated through 2012)
- 30-minute web survey on…
  - Awardee and Mentor characteristics
  - CDA mentorship
  - Program and Facility Infrastructure
- Survey responses will be analyzed individually and as Awardee-Mentor dyads

Response Rates so far…

- Updated CVs
  - 180/182 CDAs and 189/214 Mentors
- Surveys
  - Paired into 145 dyads
  - 83% of CDAs and 81% of Mentors completed
  - 100/145 dyads (69%)
  - 42 currently active CDA-Mentor dyads

Goal 2: Input on Program Enhancements

Obtain input from VA stakeholders (CDA mentees and mentors) on how to enhance the HSR&D CDA Program mentorship and on innovations in mentorship models.

- CDA Application and Review Process
- Incentives and Barriers to Mentoring
- Evaluating/Monitoring Progress During the CDA
- Ideas for Innovative Mentorship Models
- Ideas for Enhancing Networking/Collegiality among CDAs
- Support for Mentoring Processes
- Career Advocacy
- Ideas for Program Enhancement
- Ideas for Attracting Minority Applicants

Interviews so far…

In-depth interviews conducted with 46 interviewees

- 2 former HSR&D Directors
- 14 CDAs and Mentors (current and past)
- 12 Center of Excellence (now COIN) Directors
- 9 CDA Review Committee Members
- 9 Directors of other Career Development Programs

HSR&D CDA Program Enhancement Initiative

Overall Objective: Promote and facilitate a community of scholarship among members of the HSR&D CDA Program nationwide.

- Aim 1: Establish a national cadre of senior advisors; facilitate opportunities for CDAs to interact with them.
- Aim 2: Facilitate in-person and virtual interaction among CDA community members nationwide.
- Aim 3: Develop a cyber-seminar series, alternating between mentoring topics & CDAs research-in-progress.
- Aim 4: Create an HSR&D CDA Toolkit for sharing resources relevant to mentoring.

Acknowledgements: Phase I

Project Team

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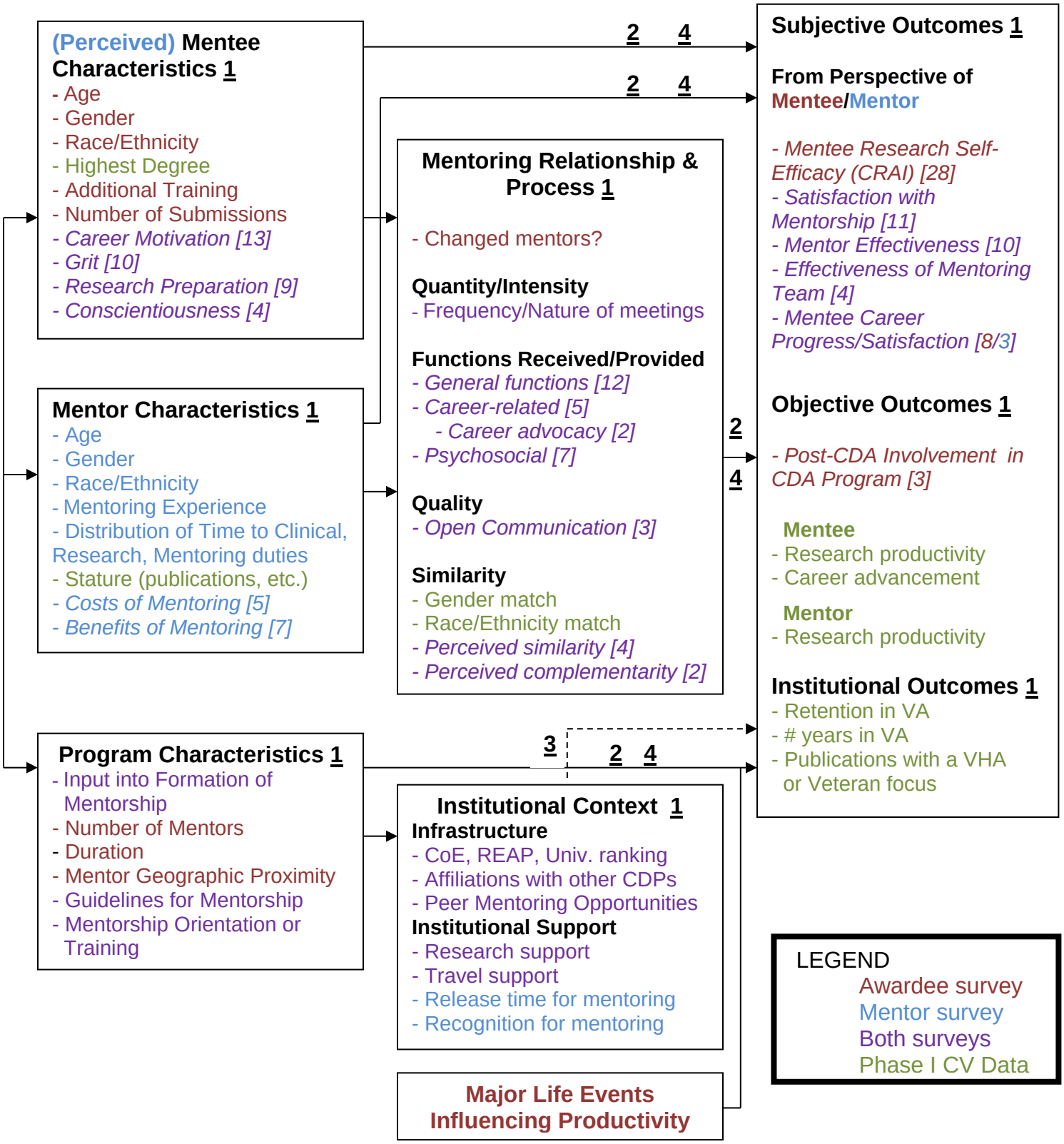
Phase II: HSR&D SDR 11-439

Conceptual Model Based on Surveys

Figure 1: Conceptual Model for Phase II Evaluation of the Mentoring Relationship & Process
The underlined numbers in heading and next to each arrow correspond to the aims addressed.



Aims

Aim1: Characterize relevant aspects of mentoring relationships among CDA mentees and their mentor networks, as well as subjective outcomes of the mentorship.

We first plan to describe all aspects of the mentoring relationships, which will include characteristics of the mentees and mentors, mentoring program characteristics, aspects of the mentoring relationship and mentoring processes, and the institutional context of the mentorship. We also propose to characterize the subjective outcomes of the mentorship from the perspective of the mentee and the perspective of the mentor, along with objective outcomes for mentees and outcomes and institutional outcomes regarding intention to mentor, retention in VA, and VA relevant research.

Aim 2: Identify characteristics of the mentoring relationship that are associated with mentee outcomes.

We propose to examine the association of the mentee and mentor characteristics, program characteristics, and aspects of the mentoring relationship and mentoring process to subjective and objective mentee outcomes. In particular, we will focus on the extent to which conceptual domains of the mentoring relationship, such as intensity, the nature and amount of career-related and psychosocial functions provided, perceived quality, and similarity, are related to the mentee's perceived academic self-efficacy, evaluation of the mentorship, and intention to mentor.

Aim 3: Examine potential moderators of the association between aspects of the mentoring relationship and mentee outcomes.

For this aim, we will examine whether having a CoE or REAP at the mentee's facility interacts with the association between aspects of the mentoring relationship and outcomes. For example, a significant interaction may suggest that the hypothesized positive association of career-related functions to academic self-efficacy is stronger for those mentees located at facilities with a CoE.

Aim 4: Identify characteristics of the mentoring relationship that are associated with mentor outcomes.

Taking a similar approach to that described for Aim 2, we propose to examine the relationship of mentee and mentor characteristics, program characteristics, and aspects of the mentoring relationship and mentoring process to subjective and objective mentor outcomes (instead of mentee outcomes). The focus will be on the extent to which conceptual domains of the mentoring relationship, such as intensity, the nature and amount of career-related and psychosocial functions provided, perceived quality, and similarity, are related to the mentor's self-reported efficacy as a mentor, satisfaction with the mentee's performance, and overall evaluation of the mentoring relationship.

Comments? Questions?

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