



# A Career Success Model

## Studying the Factors that Predict Success



Doris M Rubio, PhD  
2016 CGS/NSF Workshop:  
Evaluating International Research  
Experiences for Graduate Students

# Institute for Clinical Research Education

- ▣ **Mission:** Increase pool of clinician (especially physician) investigators locally and nationally
- ▣ **Goals:**
  - Expand the spectrum opportunities: from exposure (courses) to certificate, MS, PhD
  - Extend the pipeline of training: for all levels, from high school students to faculty
  - Enhance mentoring, provide research resources and remove barriers to clinical and translational research careers



# ICRE History

- ▣ Established in 2005 to bring together all of the clinical research training programs
- ▣ 2006 CTSI funding → Research Education and Career Development Core of the CTSI
  - Roadmap K12 became KL2 under CTSI
  - CTSI T32 (TL1)
  - MS, PhD in Clinical Research
- ▣ AHRQ T32 in Health Services Research
- ▣ AHRQ T32 in CER
- ▣ AHRQ K12 in CER; Collaboration with K12 Emergency Med
- ▣ Doris Duke Clinical Research Fellowship for medical students; Doris Duke Academy for Clinical Research
- ▣ Clinical Scientist Training Program (CSTP)
- ▣ ICRE training programs are used by T32s and K23 awardees





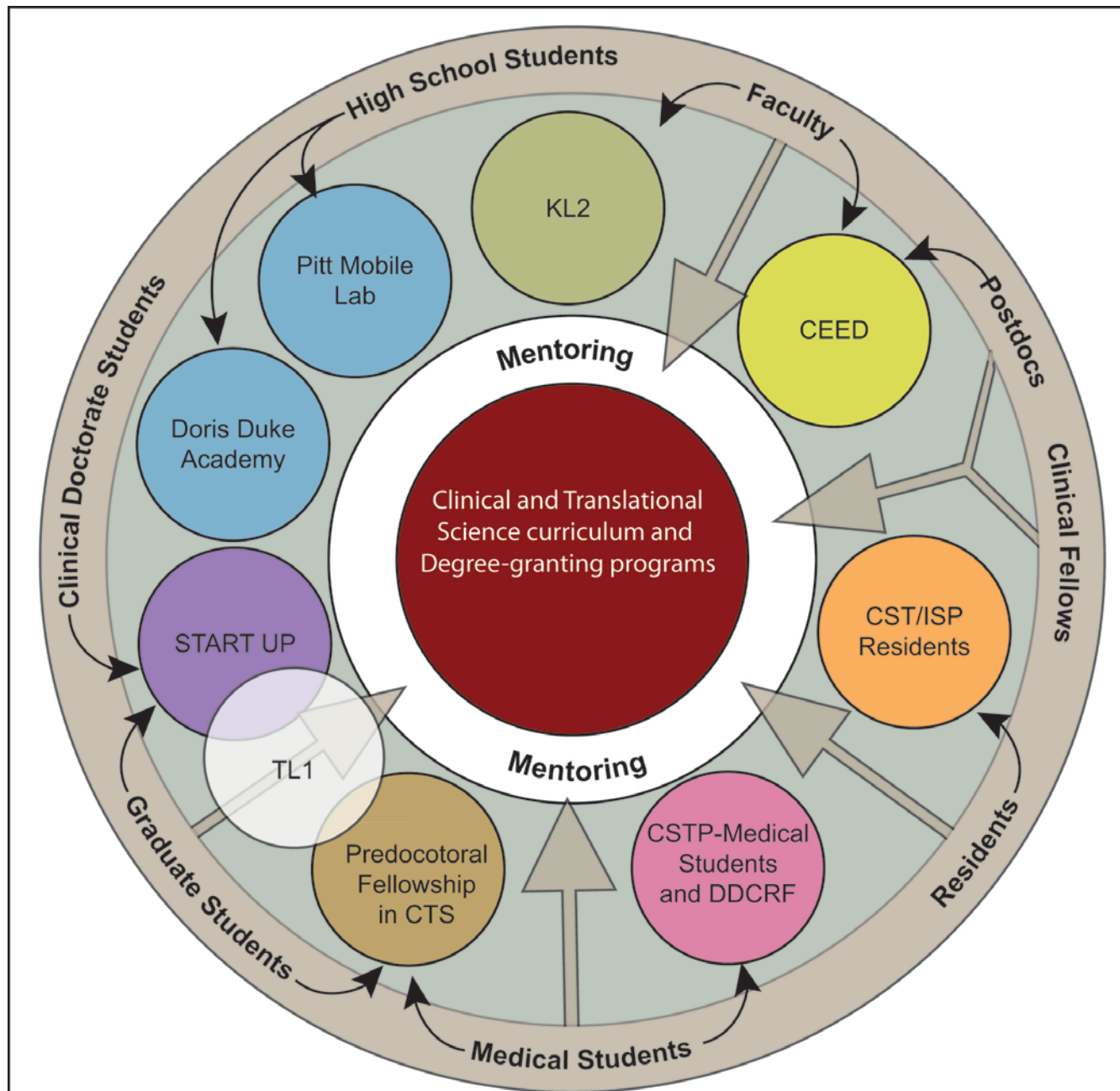


Figure 1. Conceptual model for the CTS curriculum and degree-granting prgoram

# Office of Evaluation

- Research on Careers Committee
- Track and evaluate all trainees
- Provide evaluation expertise to other training programs
- A few example publications:
  1. Rubio DM, Primack BA, Switzer GE, Bryce CL, Seltzer DL, Kapoor, WN. **A comprehensive career-success model for physician scientists.** Acad Med. 2011; 86(12):1571-6
  2. Dilmore TC, Rubio DM, Cohen E, et al. **Psychometric properties of the mentor role instrument when used in an academic medicine setting.** Clin Transl Sci. 2010;3(3):104-8.
  3. Primack BA, Dilmore TC, Switzer GE, et al. **Burnout among early career clinical investigators.** Clin Transl Sci. 2010;3(4):186-8.



I HAVE  
FINISHED  
MY PROJ-  
ECTS.  
WHAT'S  
NEXT?



MAKE A  
SPREAD-  
SHEET AND  
TRACK  
SOMETHING.



www.dilbert.com acottadams@aol.com

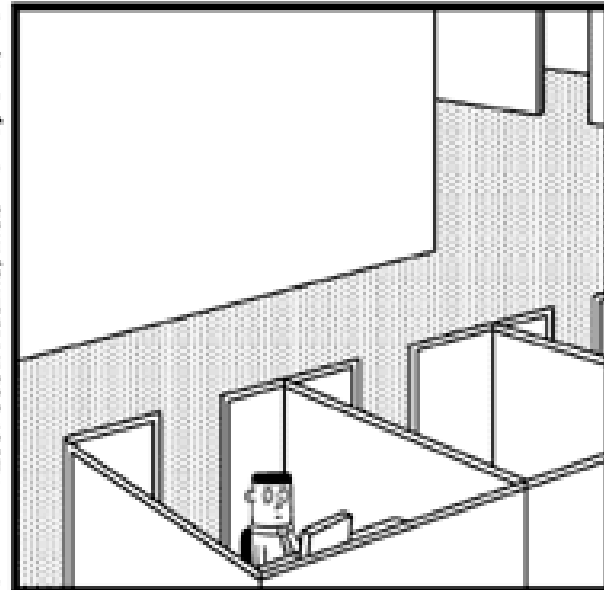
TRACK  
WHAT?



I THINK  
YOU'LL FIND  
THAT IT  
DOESN'T  
MATTER.



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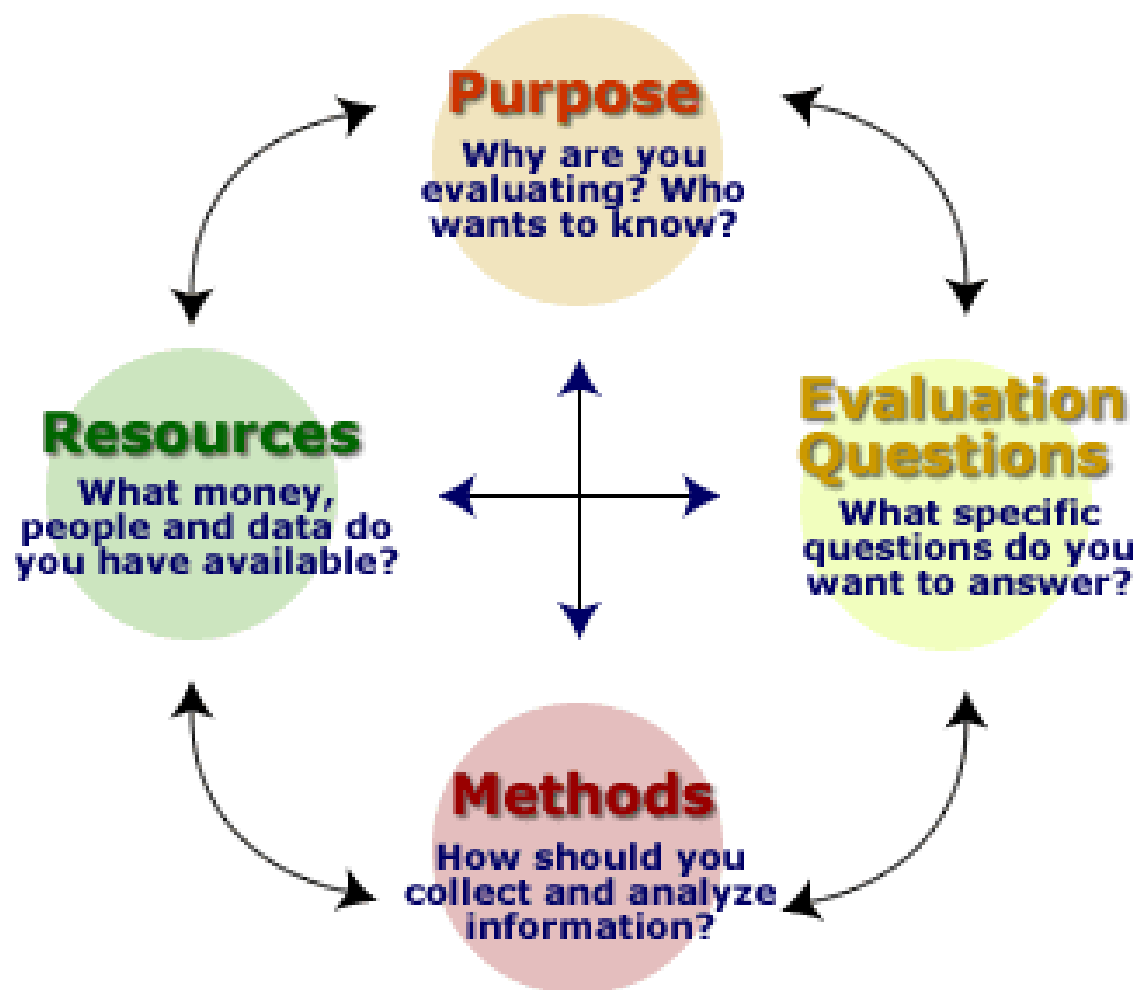
**Institute for Clinical Research Education**  
Promoting Education and Research in Clinical and Translational Research

University of Pittsburgh

ctsi

CLINICAL +  
TRANSLATIONAL  
SCIENCE  
INSTITUTE

# Evaluation Process



# A Comprehensive Career-Success Model for Physician-Scientists

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## Abstract

With today's focus on the translation of basic science discoveries into clinical practice, the demand for physician-scientists is growing. Yet, physicians have always found it challenging to juggle the demands of clinical care with the time required to perform research. The Research on Careers Workgroup of the Institute for Clinical Research Education at the University of Pittsburgh developed a comprehensive model for

career success that would address, and allow for the evaluation of, the personal factors, organizational factors, and their interplay that contribute to career success. With this model, leaders of training programs could identify early opportunities for intervening with potential physician-scientists to ensure career success. Through an iterative process described in this article, the authors identified and examined

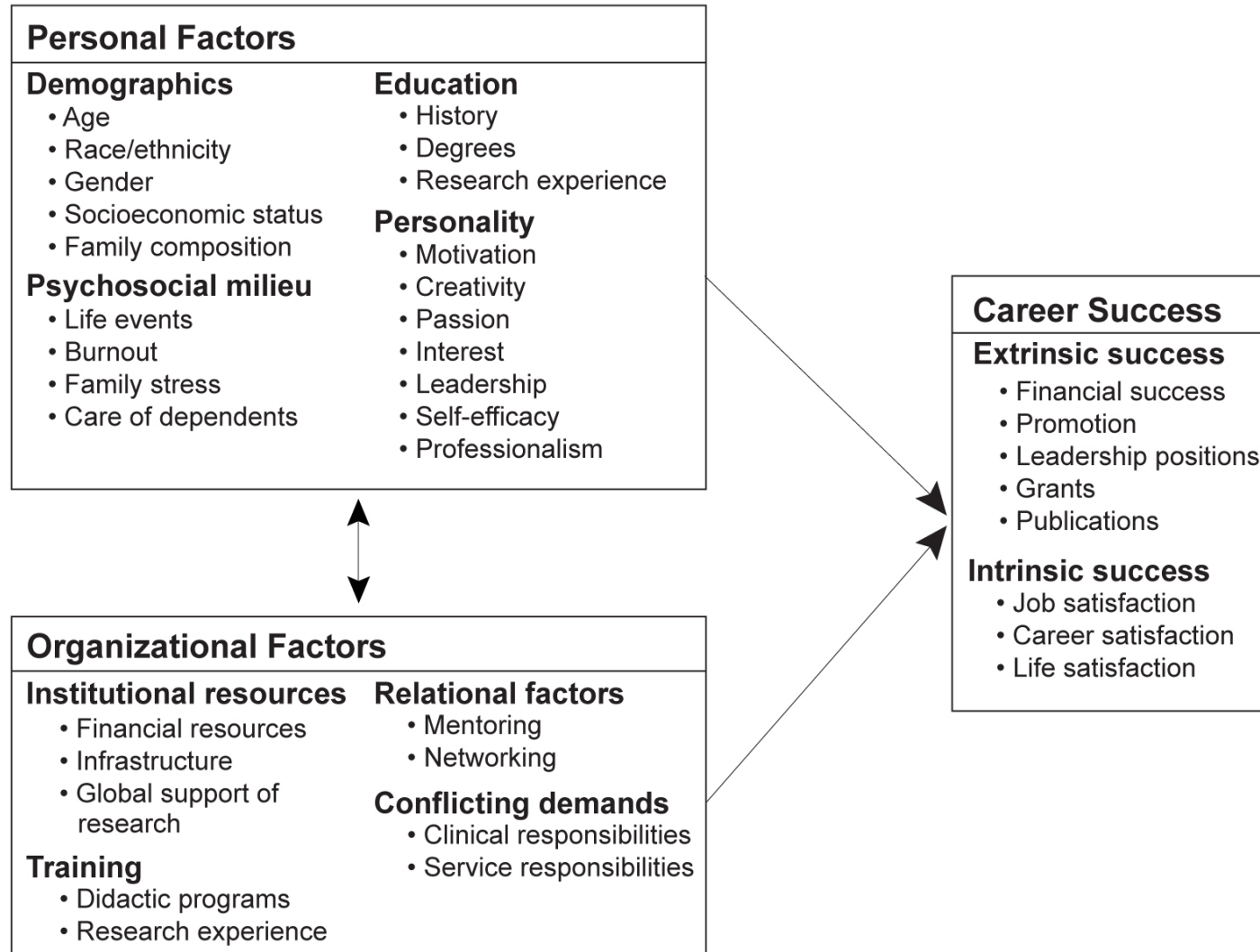
potential models for career success from the literature, added other elements determined to be significant, and developed a comprehensive model to assess factors associated with career success for physician-scientists. The authors also present examples of ways in which this model can be adapted and applied to specific situations to assess the effects of different factors on career success.





# Model for Career Success

Figure 1



# Preliminary Results

ICRE Program	Frequency	Percent
PhD (CTS)	8	5%
MS (Clinical Research)	79	50%
Cert (Clinical Research)	72	45%
Total	159	100%

Age: Mean=35.6; SD=5.6

Degree	Frequency	Percent
Bachelor	8	5%
Master	9	6%
Clinical Doctor (MD)	131	82%
Research Doctor (PhD)	11	7%



# Preliminary Results

Gender	Frequency	Percent
Male	71	45%
Female	87	55%

Race	Frequency	Percent
Asian	41	26%
African American	13	8%
White	100	65%
Other	1	1%

Hispanic	Frequency	Percent
0	147	95%
1	8	5%

Minority	Frequency	Percent
No	138	87%
Yes	21	13%



# Metrics for Success

## Clinical and Translational Scientist Career Success: Metrics for Evaluation

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### Abstract

Despite the increased emphasis on formal training in clinical and translational research and the growth in the number and scope of training programs over the past decade, the impact of training on research productivity and career success has yet to be fully evaluated at the institutional level. In this article, the Education Evaluation Working Group of the Clinical and Translational Science Award Consortium introduces selected metrics and methods associated with the assessment of key factors that affect research career success. The goals in providing this information are to encourage more consistent data collection across training sites, to foster more rigorous and systematic exploration of factors associated with career success, and to help address previously identified difficulties in program evaluation. Clin Trans Sci 2012; Volume 5: 400–407

**Keywords:** clinical research, translational research, research careers, research success, evaluation, CTSA, graduate training, research training, mentoring, collaboration, team science



# Success Defined

Intrinsic Success	Job Satisfaction	Career Satisfaction	Life Satisfaction
N	80	81	81
Mean(SD)	5.16 (1.04)	3.64 (0.96)	5.12 (1.25)
Min	2.29	1	1.4
Max	7	5	7

- Total number of publications: 0 to 73
- Mean number of total publications per alumni: 4.85
- Mean number of publications per year per trainee: ranges 0 - 10
- Mean average number of publications per year per trainee: 1.09



# Test for Predictors of Success

- ▣ Bivariate tests
- ▣ Averaging responses over all alumni surveys per trainee
- ▣  $p < .05$
- ▣ Age, Gender, Minority
- ▣ Life Events, Burnout, Mentoring, Networking





# Predictors of Success

- ▣ Job Satisfaction (average of 7 items)
  - Networking – average # of people connected ( $p=.003$ )
- ▣ Career Satisfaction (average of 2 items)
  - No variables significantly related
- ▣ Life Satisfaction (average of 7 items)
  - No variables significantly related



# Predictors of Success

- ▣ Publications – average number of publications per year. Highly skewed – dichotomized 1>
  - Effective Mentoring  $p = .03$
  - Networking  $p = .02$
- ▣ Age, Gender, Minority – Not predictors
- ▣ Life Events, Burnout – Not predictors



