

Background

- Mentoring has proven an effective way to enhance research productivity and career success. Providing mentoring and training to early-mid career implementation science investigators builds capacity and research networks for D&I.
- The Mentored Training for Dissemination and Implementation Research in Cancer (MT-DIRC) [1] and the Implementation Research Institute (IRI) [2,3] are NIH-funded R25, US based initiatives designed to equip researchers in cancer and mental health with the knowledge and skills to undertake D&I research.
- Here we present core components of each program and provide early evidence of program impact on D&I mentoring networks and capacity for D&I research.

Overview of Programs

Eligibility:

- Open to post-doctoral scholars (PhDs, MDs and other doctorate level degrees) with interests in furthering their implementation research in mental health (IRI) or cancer prevention/control/treatment (MT-DIRC)

Network:

- IRI- 9 Core Mentors, 42 Expert Faculty, 64 total fellows over 7 years (in second cycle of funding)
- MT-DIRC- 9 Core Mentors, 19 Guest Faculty, 56 total fellow over 5 year R25 program (in final year)

Program components:

- 2 year competitive fellowship, beginning with a five-day D&I summer institute
- First year fellows complete 2-3 day visit to an federally supported active implementation research site (IRI Fellows only)
- Mentoring continues for 2 years and fellows return to the summer institute in their second year, provide support to first-year fellows

Evaluation:

- Fellows complete pre institute, 6 month and 18 month post institute surveys which evaluate D&I research capacity and satisfaction of mentoring, track publications and grants
- Once each summer, all past and present fellows/mentors complete social network analysis survey [3]

Core D&I Competencies

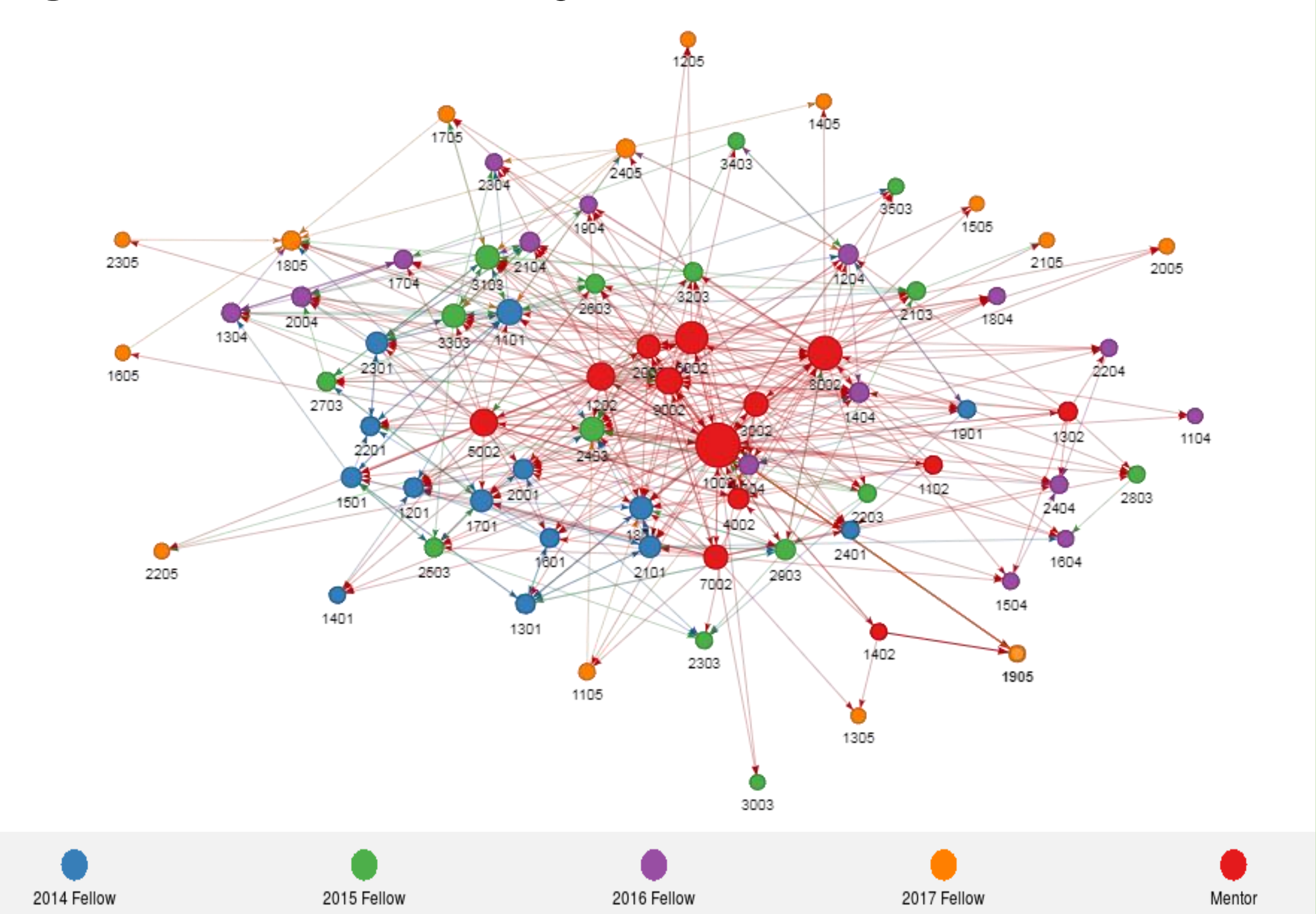
MT-DIRC and IRI assess Fellows on 43 D&I competencies [1] within four main areas:

Core Competency Area	Example Competency
Definitions, background and rationale (10 total)	<i>Define what is and what is not D&I research</i>
Theory and approaches (7 total)	<i>Identify core elements of effective interventions and recognize the risks of making modifications to these</i>
Design and analysis (14 total)	<i>Identify common D&I measures & analytic strategies relevant for your research questions(s).</i>
Practice-based considerations (12 total)	<i>Identify and develop sustainable partnerships for D&I research.</i>

Delivering Mentorship

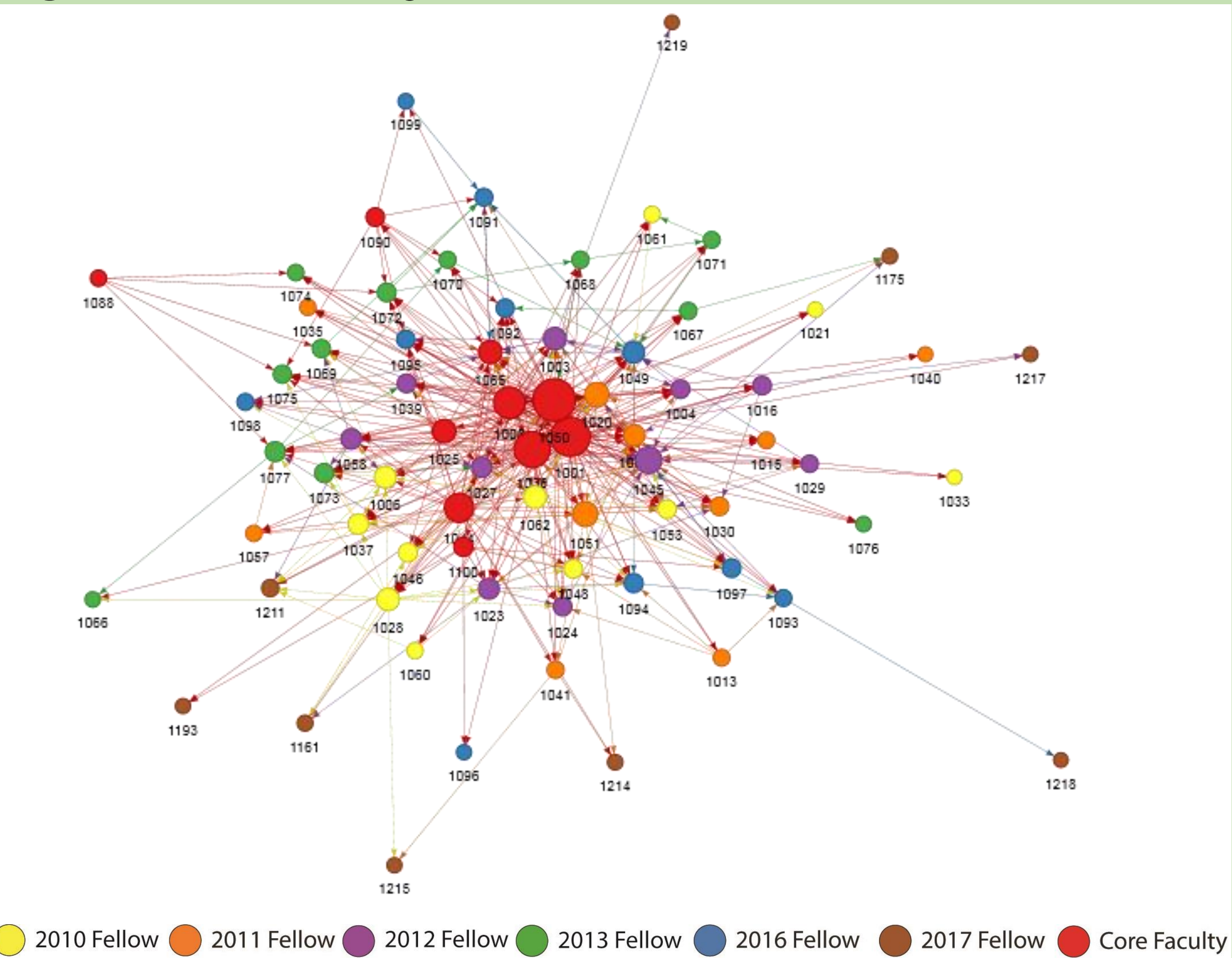
- Programs place strong emphasis on mentoring-relationship between a senior and junior organizational member to help the mentee (Fellow) advance within her/his career and in an organization- with various mentoring activities:
 - 1:1 meetings (Mentor/Fellow)
 - Group meetings (Mentor/Fellow/2-3 other Fellows)
 - In-person mentoring at summer institute (1st and 2nd year fellows, 1:1 and group)
 - Yearly face-to-face meeting at D&I conference (All cohorts of Fellows)
 - Peer to peer mentoring
- Programs assess mentorship at the mentor and mentee/fellow levels with MCA tool [4]

Figure 1. MT-DIRC Mentoring Network*



*MT-DIRC, all cohorts reporting any mentoring activities (in and out total degrees) ever

Figure 2. IRI Mentoring Network*



*IRI, all cohorts reporting any mentoring activities (in and out total degrees) ever

Evaluating Impact

- D&I skills**
 - D&I skills increased significantly while in the MT-DIRC program (publication forthcoming), with the largest effects in:
 - Define D&I research
 - Address validity in study design
 - Identify measures and strategy
- Mentoring**
 - MT-DIRC Fellows' highest rating of mentors were in:
 - Active listening
 - Providing constructive feedback
 - Working effectively with mentees whose personal background is different from your own
 - Both IRI and MT-DIRC mentorship networks continue to grow in mentoring connections (Figure 1 and 2).
 - Mentoring is shared between fellows and cohorts of fellows, not just mentor-to-mentee
- Productivity**
 - IRI Fellows were more likely to receive grants and contribute scholarly works to implementation science compare to non-selected IRI applicants (publication forthcoming, MT-DIRC will complete similar analysis at conclusion of year 5)

Discussion and Implications for D&I Research

- Mentored training is an effective method to increase skills in D&I research
- Having two full years of mentoring may provide more time to establish connections and learning networks(as compared to shorter in length programs)
- The networks of learning created have many benefits to those in the network, but also capacity for D&I research on the whole
- For fellows that received training and mentoring, more D&I grants were awarded and more publications contributed to the D&I research pool. Building capacity in the D&I area begets more D&I work with the potential for greater impact (research to practice)
- More mentored training programs in D&I are needed to build and maintain networks of learning in D&I

Resources

- Padek M et al. Developing educational competencies for dissemination and implementation research training programs: an exploratory analysis using card sorts. *Implementation Science*. 2015;10(1). doi:10.1186/s13012-015-0304-3.
- Proctor E et al. The implementation research institute: training mental health implementation researchers in the United States. *Implementation Science*. 2013; 8(1).
- Luke D et al. Forging a link between mentoring and collaboration: a new training model for implementation science. *Implementation Science*. 2016; 11(1).
- Fleming M et al. The Mentoring Competency Assessment. *Academic Medicine*. 2013; 88(7), pp.1002-1008.