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## AMIGO: a novel approach to the mentorship gap in pediatric rheumatology

**Peter A. Nigrovic, MD<sup>1,2</sup>, Eyal Muscal, MD, MS<sup>3</sup>, Meredith Riebschleger, MD, MS<sup>4</sup>, L. Nandini Moorthy, MD, MS<sup>5</sup>, Hermine I. Brunner, MD, MSc<sup>6</sup>, Barbara A. Eberhard, MD<sup>7</sup>, Marisa Klein-Gitelman, MD<sup>8</sup>, Sampath Prahalad, MD, MSc<sup>9</sup>, Rayfel Schneider, MBCh<sup>10</sup>**

<sup>1</sup>Division of Immunology, Program in Rheumatology, Boston Children's Hospital and Harvard Medical School, Boston MA.

<sup>2</sup>Division of Rheumatology, Immunology and Allergy, Brigham and Women's Hospital and Harvard Medical School, Boston MA.

<sup>3</sup>Division of Immunology, Allergy and Rheumatology, Texas Children's Hospital, Baylor College of Medicine, Houston TX.

<sup>4</sup>Pediatric Rheumatology, University of Michigan, Ann Arbor MI.

<sup>5</sup>Pediatric Rheumatology, University of Medicine and Dentistry of New Jersey/Robert Wood Johnson Medical School, New Brunswick NJ.

<sup>6</sup>Pediatric Rheumatology, Cincinnati Children's Hospital Medical Center and the University of Cincinnati College of Medicine.

<sup>7</sup>Pediatric Rheumatology, Steven and Alexandra Cohen Children's Medical Center of New York, North Shore-Long Island Jewish Health System, Hofstra-NSLIJ School of Medicine, New Hyde Park NY.

<sup>8</sup>Division of Rheumatology, Department of Pediatrics; Ann & Robert H. Lurie Children's Hospital of Chicago, Feinberg School of Medicine, Northwestern University, Chicago IL.

<sup>9</sup>Departments of Pediatrics and Human Genetics, Emory University School of Medicine, Atlanta GA, and Children's Healthcare of Atlanta, Atlanta, GA.

<sup>10</sup>Division of Rheumatology, Department of Pediatrics, The Hospital for Sick Children and University of Toronto, Canada.

### Keywords

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In Homer's *Odyssey*, Mentor was an old man to whom Odysseus entrusted the care of his household when he set out for Troy. Assuming Mentor's appearance, the goddess Athena

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Address correspondence to: Peter A. Nigrovic MD, Boston Children's Hospital/Brigham and Women's Hospital, Smith 516B, One Jimmy Fund Way, Boston MA 02115, phone 617-525-1031, fax 617-525-1010, pnigrovic@partners.org.

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guided Odysseus' son Telemachus through a set of difficult choices that enabled him to reclaim his estate as a prince. By extension, *mentoring* has come to signify an ongoing, personal relationship through which someone of advanced professional standing helps to guide the professional growth and development of a more junior colleague (1). For physicians, mentoring serves multiple important roles in professional life, including career choice, professional advancement, research productivity, work-life balance, and personal development (2–4).

While finding appropriate mentors is a challenge for many physicians, it may be particularly difficult for trainees and junior faculty in the smaller pediatric subspecialties. Pediatric rheumatology exemplifies this scenario, with fewer than 270 board-certified pediatric rheumatologists divided among more than 100 centers throughout the US and Canada. Such small programs often face a heavy clinical workload and lack critical mass to sustain academic activities, while offering few potential mentors (5, 6).

To address this “mentorship gap,” the American College of Rheumatology (ACR) and the Childhood Arthritis and Rheumatology Research Alliance (CARRA) developed the *ACR/CARRA Mentoring Interest Group* (AMIGO), a program that has grown to encompass the majority of fellows and junior faculty in pediatric rheumatology. To our knowledge, no similar subspecialty-wide program has been described. We detail the development, implementation and early evaluation of AMIGO as a potential model for mentoring in other pediatric subspecialties.

### **Needs assessment: the mentorship gap in pediatric rheumatology**

To assess the need for career development support, CARRA surveyed pediatric rheumatology junior faculty in 2010. Twenty-nine respondents (67% response) identified mentorship (61%) and networking (32%) as key unmet needs. Similar findings emerged from a poll of fellows and junior faculty attending a CARRA event at the 2010 ACR annual scientific meeting. These results prompted formation of the AMIGO Steering Committee in late 2010. A comprehensive internet-based survey of fellows and junior faculty (n=87; 43% response) confirmed that only 49% of respondents could identify a career mentor, in line with published data across specialties (2).

To develop a practical solution, a mentoring symposium was held in conjunction with a pediatric rheumatology scientific meeting in June 2011. Approximately 100 participants formed four focus groups: clinician/educators, clinical researchers, basic researchers, and program chiefs/directors. Emerging themes included: a) need for career guidance early in fellowship, b) interest in the perspective offered by a mentor at a different institution, and c) support for outside mentorship by program leadership. Written feedback was obtained from 87 participants, of whom 86% expressed interest in formal inter-institutional mentoring. Two programs were therefore designed: regular educational/networking sessions and a formal inter-institutional mentoring program.

## Educational/networking sessions

To address common problems facing early-stage pediatric rheumatologists, promote a culture of mentoring, and foster cross-institutional connections, AMIGO developed educational/networking sessions to be offered twice yearly at ACR and CARRA meetings. Six have occurred through October 2013. Sessions begin with a brief update about AMIGO, followed by a 15-minute keynote talk by a senior faculty member, and conclude with unstructured time for discussion and networking. Presentations address common concerns such as “How to be a good mentee” and “How to pick a research project.”

## Inter-institutional mentoring program

A novel program was developed to match interested mentees with mentors at other institutions for the purpose of general career mentoring.

### Mentees and Mentors.

Pediatric and medicine/pediatric rheumatology fellows and junior faculty through assistant professor are eligible to be AMIGO mentees. Mentors are assistant professors and above. Junior faculty mentors are matched with fellows, and senior faculty mentors are matched with junior faculty; some assistant professors are both mentees and mentors. This arrangement reflects both the familiarity of junior faculty with the needs of fellows and the relatively small pool of senior faculty.

### Matching.

Participants are paired according to data collected in a short online questionnaire. Matching is assisted by a computer algorithm that identifies 5 mentors with the greatest match of skills and experiences to the mentees' self-identified needs. Final matches are adjudicated by the AMIGO Steering Committee via conference call. To avoid competing centers, matching occurs across geographically distinct regions. Mentor-mentee dyads are provided with support materials, including an “introduction to mentoring” presentation and a “mentee checklist” describing how to prepare for meeting the mentor. Mentoring terms last three years, and periodic email notices remind mentees and mentors to remain in contact.

### Pilot phase and full program.

A pilot program (20 dyads) was launched in October 2011 to develop and test the matching process, after which the process was opened to all US and Canadian pediatric rheumatologists. Mentees and mentors are recruited through a pediatric rheumatology list-serve and by directed emails. 57 mentees were matched in 2012 and 37 in 2013; two pairings have ended, bringing the total number of active AMIGO mentor-mentee dyads to 112 (Table 1).

## Program evaluation

To assess the utility of AMIGO, the pilot dyads matched in November 2011 were surveyed after approximately 17 months (Figure 1, Table S1). Over 70% of participants rated AMIGO as definitely helpful to the mentee, in particular in the domain of career path, but with

substantial benefit in other areas. Mentees and mentors both reported enhanced connection to the pediatric rheumatology community, while mentors reported gains for their mentoring skills and their academic portfolios.

## Discussion

Mentoring is an important contributor to success in academic medicine (2). Increasingly, institutions have begun to address this need by building formal mentoring programs for their trainees and junior faculty (4). However, as our survey data confirm, many early-stage physicians remain without a career mentor. Even where a mentor is available, a network of mentors with complementary expertise remains advantageous (7). AMIGO was developed to help meet these needs in pediatric rheumatology, but the general approach would be applicable to other subspecialties as well, particularly where practice occurs largely in academic settings. While “scaling up” to encompass larger subspecialties or pediatrics as a whole could present logistic challenges, AMIGO-like mentoring programs targeted to specific groups (for example, clinical researchers) could readily be developed, as exemplified by the successful research mentoring program sponsored by the Children’s Oncology Group (8).

Formal evaluation of the efficacy of mentoring programs remains a challenge (4). AMIGO pilot participants reported perceived gains in multiple domains, including career development, scholarship, job satisfaction, and work-life balance. Ongoing program evaluation will assess both process variables (number of participants, extent and content of mentor-mentee contact, “fit” of match) and perceived benefits to mentees/mentors. A large-scale survey of the state of mentoring and career development within pediatric rheumatology in 2010, prior to the launch of AMIGO, will serve as a baseline to determine in coming years whether AMIGO has succeeded in making an impact on the field (9).

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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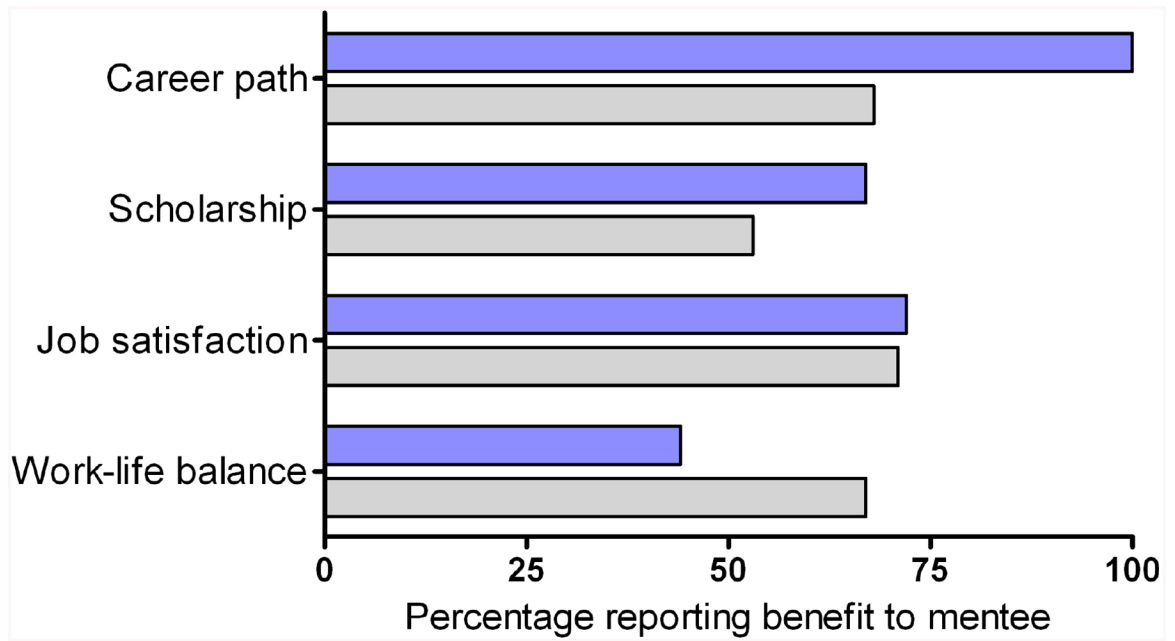
## Abbreviations:

ACR                      American College of Rheumatology

<b>AMIGO</b>	ACR/CARRA Mentoring Interest Group
<b>CARRA</b>	Childhood Arthritis and Rheumatology Research Alliance

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**Figure 1. Benefit of AMIGO to mentees.**

Pilot phase participants (n=37 respondents, 97%) were surveyed 17 months after match as to whether mentoring had benefitted mentees in the domains of career path, research/scholarship, job satisfaction, and work-life balance. Dark bars, mentees; light bars, mentors.

**Table 1.**

AMIGO mentees as of October 2013

1 <sup>st</sup> year fellow	18
2 <sup>nd</sup> year fellow	17
3 <sup>rd</sup> or 4 <sup>th</sup> year fellow	22
Instructor/Assistant Professor	55
<b>TOTAL</b>	<b>112</b>

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