

**Supplemental Appendix 2: Detailed Results of 26 Descriptive Studies Without Comparison Groups**

	First author, year <sup>ref</sup>	Participants and setting	N	Intervention(s) or observation(s)	Outcome(s)	Results
<b>MEDICAL SPECIALTIES</b>						
Primary care	<b>Family medicine</b>					
	Carek, 2011 <sup>44</sup>	Residents; single community program	111	PTime RCurr	Pres Pub	<ul style="list-style-type: none"> <li>Described the Clinical Scholars Program at 1 residency training program</li> <li>111 residents participated, resulting in 24 presentations (national and international meetings) and 15 publications</li> </ul>
	<b>Internal medicine</b>					
	Goldman, 1986 <sup>29</sup>	Residents; single academic program	32	PTime RTrack	Fellow Fac	<ul style="list-style-type: none"> <li>Having a research track fostered subspecialty and academic careers: 24 of 32 completed the program; 6 still in program</li> <li>18 graduates pursued fellowship; 18 graduates became faculty in academic centers</li> <li>2 were full-time researchers in non-academic centered</li> </ul>
	Internal Medicine Clinic Research Consortium Faculty, 1995 <sup>31</sup>	Residents; single academic program	51	Team project	Pub	<ul style="list-style-type: none"> <li>51 of 66 residents participated in some aspect of the research</li> <li>Team project results were presented and published</li> <li>88% believed the experience contributed to their professional development</li> <li>90% felt it should be continued</li> </ul>
	Palacio, 2013 <sup>48</sup>	Residents; single academic program	156	Resident and mentor characteristics	Pres Pub	<ul style="list-style-type: none"> <li>54% had presentations or publications</li> <li>Year of training (OR PGY-3 = 8.2 [95% CI 3.2-8.9]), number of publications by mentor (1.02 [95% CI 1.00-1.05]), and number of federal grants by mentor (OR 6.44 [95% CI 2.85-14.2]) were most predictive of scholarly success</li> </ul>
	<b>Pediatrics</b>					
	Lovejoy, 2008 <sup>40</sup>	Residents; single academic program	35	PTime RTrack RCurr	Pres	<ul style="list-style-type: none"> <li>Describes outcomes over 18 years for participants in three types of special alternative or research pathways</li> <li>36 national presentations in the past 5 years</li> </ul>
	Vinci, 2009 <sup>13</sup>	Residents; single academic program	136/ 165	PTime	Pres Pub RSkills	<ul style="list-style-type: none"> <li>Describes outcomes of senior resident 3-month career development rotation</li> <li>36% of residents had project success (published/presented abstract, workshop, or manuscript (in press or published))</li> <li>Factors in multivariate analysis associated with project success:               <ul style="list-style-type: none"> <li>Funding (OR: 3.37; 95% CI: 1.34-8.42)</li> <li>Nature of research project - clinical, health services, or basic science (OR: 3.55; 95% CI: 1.40-9.04)</li> </ul> </li> </ul>
	<b>Pediatrics &amp; internal medicine/pediatrics</b>					
	Shin, 2006 <sup>16</sup>	Residents; single academic program	115	Team project	Pub	<ul style="list-style-type: none"> <li>76/115 (66%) of residents participated in the research project</li> <li>3 manuscripts were generated</li> </ul>
Other	<b>Dermatology</b>					
	Wagner, 2013 <sup>49</sup>	Residents; single academic program	11	PTime RReq	Pub	<ul style="list-style-type: none"> <li>A scholarly project was required and significant departmental support was provided (biostatistician, optional 2-week research elective, scholarly research project award)</li> <li>Between 2005 and 2012, 11 residents participated in the scholarly project resulting in 11 publications</li> </ul>
	<b>Emergency medicine</b>					
	Holmes, 2006 <sup>37</sup>	Residents; single academic program	87	RReq	Pres Pub	<ul style="list-style-type: none"> <li>Over 10 years, 87 residents produced 90 scholarly projects</li> <li>51% presented at national meetings, 40% were published</li> </ul>

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Other, cont.	<b>Psychiatry</b>					
	Fisher, 1975 <sup>27</sup>	Research fellows; single program	18	RTrack RCurr	Fac Pub	<ul style="list-style-type: none"> <li>13 graduates completed a funded research track</li> <li>68% had at least 1 publication; 84% reported some form of academic affiliation</li> </ul>
	El-Mallakh, 2001 <sup>34</sup>	Residents; single academic program	32	RCurr	Pub	<ul style="list-style-type: none"> <li>Described outcomes of a 7-10 week research seminar</li> <li>7 seminars resulted in 5 publications</li> </ul>
	Kunik, 2008 <sup>39</sup>	Residents; multiple programs	26	RTrack	Pres Pub Fellow	<ul style="list-style-type: none"> <li>Describes outcomes of a funded competitive research track over 4 years</li> <li>Participants have had 6 publications and 28 presentations</li> <li>Half pursued academic or fellowship positions</li> </ul>
	Roane, 2009 <sup>50</sup>	Residents; single academic program	89	PTime RCurr	Pres Pub	<ul style="list-style-type: none"> <li>After implementation of the curriculum, presentations increased from less than 5/year to 23 and 17 in the last 2 years of the program and publications from 1/year to 15/year</li> </ul>
	Jibson, 2010 <sup>41</sup>	Residents; multiple programs	35	RTrack RCurr RReq	Fac	<ul style="list-style-type: none"> <li>Describes outcomes of a clinical educator track consisting of mentorship, didactics, and scholarly project requirement</li> <li>22/31 (71%) of graduates have entered academics with 4 others in fellowship</li> </ul>
	Back, 2011 <sup>42</sup>	Residents; single academic program	14	RTrack PTime RCurr	Pres Pub Fellow	<ul style="list-style-type: none"> <li>Residents submitted 36 abstracts, 28 manuscripts</li> <li>Of 8 graduates, 4 completed fellowships, 3 completed residencies in child psychiatry</li> </ul>
	Noggle, 2012 <sup>45</sup>	Residents; single academic program	15	RCurr	Pres Pub	<ul style="list-style-type: none"> <li>After 1 year, 15 publications and 20 national presentations</li> </ul>
	<b>Radiology</b>					
	Gay, 2000 <sup>33</sup>	Residents; single academic program	24	PTime	Pres Pub	<ul style="list-style-type: none"> <li>2.7 research projects/resident; 13/24 presented nationally (3 won awards)</li> <li>7 publications</li> </ul>
	Rahal, 2007 <sup>38</sup>	Residents single academic program	6	Combined residency/PhD	Pres Pub	<ul style="list-style-type: none"> <li>In 6 years, the program has grown to 6 residents with 25 presentations, 10 peer-reviewed publications, and 6 funded grant proposals</li> </ul>
	<b>Radiology &amp; radiation oncology</b>					
	Wallner, 2013 <sup>46</sup>	Residents; multiple programs	34	PTime RTrack	Pres Pub Grants Fellow Fac	<ul style="list-style-type: none"> <li>Describes outcomes of participants in the Holman Research Pathway</li> <li>23/33 (66.6%) entered academics; 5% radiation oncology and 100% of radiology residents pursued fellowship</li> <li>7.15 publications/resident, 4.7 presentations/resident, 1.5 extramural grants/resident</li> </ul>
<b>SURGICAL SPECIALTIES</b>						
Other	<b>Otolaryngology</b>					
	McCabe, 1975 <sup>28</sup>	Residents; single program	40	PTime RCurr	Pub	<ul style="list-style-type: none"> <li>Over 8 years, 23 peer-reviewed publications; 4 received national awards</li> </ul>
	<b>General surgery</b>					
	Chung, 1999 <sup>32</sup>	Residents; single community program	16	RCurr	Pres Pub	<ul style="list-style-type: none"> <li>Over 3 years, 10/16 trainees participated in at least one project; 13 were presented at national meetings; 13 publications</li> </ul>
	Lampman, 2003 <sup>35</sup>	Residents; single community program	31	RCurr	Pres Pub	<ul style="list-style-type: none"> <li>Over 12 years, there were 41 funded research grants, 111 abstracts (other than local), 59 publications, and 44 research awards.</li> </ul>
	<b>OB-GYN</b>					
	Sulak, 1992 <sup>30</sup>	Residents; single academic program	Not reported	RReq RCurr RDay	Pub	<ul style="list-style-type: none"> <li>10 publications over 4 years</li> <li>Also surveyed program directors (n=209): 64% require research</li> </ul>

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Other, cont.	<b>OB-GYN, cont.</b>					
	Brubaker, 2011 <sup>43</sup>	Residents; single academic program	28	RCurr Team research projects	Participation	<ul style="list-style-type: none"> <li>Regular conduct of resident-designed registered trials (3 currently ongoing)</li> <li>All senior residents participated in projects and completed manuscripts</li> <li>RRC commendation</li> </ul>
	<b>Orthopedics</b>					
	Bernstein, 2006 <sup>36</sup>	Residents; single academic program	127	PTime	Pub Fellow Fac	<ul style="list-style-type: none"> <li>75% of all graduates had at least one peer-reviewed publication after residency</li> <li>74% completed fellowship; 56% entered academic medicine</li> </ul>
	<b>Urology</b>					
	Andrews, 2013 <sup>47</sup>	Residents; multiple programs	152	Resident characteristics	Pres Pub	<ul style="list-style-type: none"> <li>Only post-graduate year of training was significantly associated with the number of formal research presentations and publications completed during residency. Prior research experience or fellowship plans did not affect scholarly activity productivity</li> </ul>

Abbreviations: PTime indicates protected time for scholarly activity; RCurr, research curriculum; RTrack, separate research track; RReq, research requirement; RDay, research day; Fac, faculty positions after graduation; Pres, presentations; Pub, publications; Fellow, fellowship positions after graduation; RRC, residency review committee.