Gender Differences in Publication Productivity, Academic Position and Career Duration Among Current Academic Radiation Oncology Faculty

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**Introduction:**
In medical schools across the U.S., women continue to be under-represented among faculty in the ranks of full professor (19%) and chair (13%) (AAMC). Prior studies have shown women are likewise under-represented among authorship in medical literature at large (Jagst 2006). Other studies have shown differences in career trajectories and even salaries (Jagst 2011 and 2012). Radiation oncology is no exception. There has been a recent interest in the development and evaluation of objective measures of academic productivity. One such measure is the h-index. The h-index includes the number of papers (Np) published greater than or equal to h times (Hirsch 2005).

**Purpose/Objective(s):**
Radiation oncology departments continuously seek objective measures of scholarly activity among their faculty. This study aims to analyze gender and academic position, career duration, and academic productivity among current academic radiation oncology faculty at U.S. academic institutions.

**Methods:**
We identified 82 academic radiation oncology departments as listed in the American Society for Radiation Oncology 2009 Directory. We then accessed each publically available department website identifying current faculty as listed by the individual institutions. We included clinical faculty and divided academic ranks into chair/professor, associate professor, assistant professor and other (unspecified, instructor or faculty). We recorded and analyzed numeric metrics for faculty using a commercially available database (SCOPUS) including total number of publications and h-index.

**Results**
Out of 1033 current academic radiation oncology faculty, 289 were women and 744 were men. Men had a higher mean h-index and publications overall, and were more likely to be chair/professor or associate-level faculty. Men had more publications at each academic level, with the exception of assistant professor, where no difference was noted. However, there were no detectable gender differences in h-index at the assistant or full/chair levels. On multivariate analysis, there were significant correlations between duration of career, gender, academic position and h-index (p<0.01).

**Conclusion**
The determinants of a successful career in academic radiation oncology are certainly multi-factorial, but our data show a systematic gender association.

 Though women are less likely to become senior faculty, women who achieve senior faculty status have a mean h-index and number of publications comparable to their male counterparts. These results suggest early career development and mentorship of female radiation oncology faculty may help to further diversify our field and narrow productivity disparities.

**References**
1.) Women in U.S. Academic Medicine: Statistics and Benchmarking Report. [https://members.aamc.org](https://members.aamc.org)
5.) Wesch JE. An index to quantify an individual's scientific research output. Proc Natl Acad Sci USA. 2005; 102:

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**学术表现和任期性别差异**

**目的/目标:**
放射肿瘤学部门持续寻求客观措施来衡量学者活动。本研究旨在分析性别和学术职位、任期和学术表现的关系。

**方法:**
我们从美国放射肿瘤学协会2009年目录中识别出82个放射肿瘤学部门。然后通过公共可用的部门网站获取当前的教师名单。我们包含了临床教师并按照学术职位分为系主任/教授，副教授，助理教授和其他（未指定，教授或学术）职位。我们从一个商用数据库（SCOPUS）中收集了数量化的指标，包括总发表数量和h指数。

**结果**
1033位放射肿瘤学教授中，289位女性和744位男性。男性有更高的平均h指数和整体发表数量，并且更有可能成为系主任/教授或副系主任职位。在多变量分析中，存在显著的关联，即任期，性别，学术职位和h指数（p<0.01）。

**结论**
成功的放射肿瘤学教师的决定因素是多方面的，但我们的数据显示出明显的性别差异。

尽管女性较不可能晋升到高级职位，但女性在晋升到高级职位后所获得的平均h指数和发表数量与男性相当。这些结果表明，早期职业生涯的发展和导师作用对女性放射肿瘤学教师的进一步多元化非常重要。

**参考文献**
1.) 荷兰医学统计和基准报告。[https://members.aamc.org](https://members.aamc.org)
5.) Wesch JE. An index to quantify an individual's scientific research output. Proc Natl Acad Sci USA. 2005; 102:

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**表：学术职位与性别分布**

<table>
<thead>
<tr>
<th>学术职位</th>
<th>性别</th>
<th>h指数（95% CI）</th>
<th>发表数量（95% CI）</th>
</tr>
</thead>
<tbody>
<tr>
<td>所有</td>
<td>女性</td>
<td>7.5 (6.3-8.8) *</td>
<td>25.2 (17.3-33.1) *</td>
</tr>
<tr>
<td></td>
<td>男性</td>
<td>12.27 (11.5-13.1) *</td>
<td>55.86 (50.94-60.78) *</td>
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<tr>
<td>高级</td>
<td>女性</td>
<td>20 (15.7-24.3)</td>
<td>83.9 (51.6-116.2) *</td>
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<tr>
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<td>131.3 (118.5-144.2) *</td>
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<td>女性</td>
<td>5.8 (4.9-6.7)</td>
<td>16.1 (12.2-20.0) *</td>
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<td>23.7 (21.0-26.4) *</td>
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<td>其他</td>
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<td>6.4 (4.3-8.6)</td>
<td>21.9 (19.9-33.9)</td>
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<tr>
<td></td>
<td>男性</td>
<td>9.0 (7.6-10.5)</td>
<td>36.7 (28.5-44.9)</td>
</tr>
</tbody>
</table>