

Impact of ATS Resident Boot Camp on Faculty and Fellows who Teach

Marjorie E. Bateman¹, Stephanie I. Maximous², Darlene R. Nelson³, May M. Lee⁴, Matthew G. Drake⁵, Briana Short⁶, Rachel Quaney⁷, Morgan Soffler⁸, and Maroun Matta⁹

¹Division of Pulmonary and Critical Care Medicine, Brigham and Women's Hospital, Boston, Massachusetts; ²Division of Pulmonary, Allergy, and Critical Care Medicine, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; ³Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, Minnesota; ⁴Division of Pulmonary and Critical Care Medicine, Keck School of Medicine of USC, Los Angeles, California; ⁵Division of Pulmonary and Critical Care Medicine, Oregon Health and Science University, Portland, Oregon; ⁶Division of Pulmonary, Allergy, and Critical Care Medicine, Columbia University Vagelos College of Physicians and Surgeons/New York Presbyterian, New York, New York; ⁷Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado Anschutz Medical Campus, Aurora, Colorado; ⁸Division of Pulmonary Critical Care and Sleep Medicine, Beth Israel Deaconess Medical Center, Boston, Massachusetts; and ⁹Division of Pulmonary, Critical Care, and Sleep Medicine, University Hospitals, Case Western Reserve University, Cleveland, Ohio

ORCID IDs: 0000-0001-5476-0361 (M.G.D.); 0000-0002-8356-499X (M.S.)

The annual American Thoracic Society (ATS) Resident Boot Camp (RBC) is a unique program that aims to teach incoming pulmonary and critical care medicine fellows key skills to improve their readiness and alleviate anxiety about starting their fellowships (1). The ATS RBC is the only internal medicine subspecialty “boot camp” hosted during an international conference, as well as the largest pulmonary and critical care boot camp. During the 2023 course, 131 faculty members taught 158 incoming fellows in small-group, large-group, and hands-on simulation sessions (1). RBC faculty comprised attending physicians

and fellows recruited through the ATS, Association of Pulmonary and Critical Care Medicine Program Directors, and Pediatric Pulmonary Training Directors Association listservs (1). Attending physicians and fellow educators were paired, and attending physicians were encouraged to provide fellows with feedback on their teaching. This report aims to describe the characteristics of those who volunteer their time for this program and determine the impact that teaching at the RBC has on educators. Because our literature review did not identify existing survey tools for assessing faculty and fellow perspectives on teaching at an RBC, we developed an 18-question

(Received in original form September 1, 2023; accepted in final form January 2, 2024)

This article is open access and distributed under the terms of the Creative Commons Attribution Non-Commercial No Derivatives License 4.0. For commercial usage and reprints, please e-mail Diane Gern.

Correspondence and requests for reprints should be addressed to Maroun Matta, M.D., Division of Pulmonary, Critical Care, and Sleep Medicine, University Hospitals Cleveland Medical Center, 11100 Euclid Avenue, Cleveland, OH 44106. E-mail: maroun.matta@uhhospitals.org.

ATS Scholar Vol 5, Iss 2, pp 247–253, 2024
Copyright © 2024 by the American Thoracic Society
DOI: 10.34197/ats-scholar.2023-0105BR

survey to further characterize the RBC faculty. This survey collected demographic data and evaluated perceptions of teaching at the RBC through Likert scale questions. Candidate questions were designed to optimize length, collect relevant data, and minimize confusion and bias. We asked three faculty members on the RBC leadership team who were familiar with survey design to review and edit the survey. The final draft was piloted with a group of educators to further evaluate clarity, length, and redundancy. The final version of the survey was sent to all educators registered to teach in the May 2023 RBC.

A total of 70 RBC educators responded to the survey, of whom 61 respondents were faculty members (among 115 total faculty members) and 9 were second- or third-year fellows (among 16 total fellows). Of the faculty members, 29 (47.54%) had been faculty members for ≤ 5 years, and 34 (49.28%) reported their gender as female. Self-reported racial or ethnic identities included White ($n = 38$; 55.07%), Asian ($n = 17$; 24.64%), and Hispanic or Latino or Spanish origin ($n = 3$; 4.35%). Most participants reported their main area of practice as pulmonary/critical care medicine ($n = 42$; 60.00%). The main locations of practice were the northeastern ($n = 26$; 38.8%) and midwestern ($n = 23$; 34.3%) United States, although all regions of the United States were represented. Most respondents ($n = 56$; 80.00%) described themselves as clinician educators. Table 1 displays RBC faculty demographic characteristics in additional detail. A total of 26 respondents (38.81%) reported that it was their first year teaching at the RBC, and 14 (20.00%) had been teaching for > 5 years. When asked about the overall experience teaching at the RBC, all respondents selected “very positive” or “positive.”

More than 90% of respondents agreed that teaching at the RBC made them better educators, expanded their social network, helped them meet others with similar interests, and made them feel more engaged with the ATS community. Almost 80% of respondents agreed that teaching at the RBC would help with career advancement. Respondents also expressed that teaching at the RBC led to more participation in other ATS activities such as assemblies and committees (72.86%) and influenced their decision to attend the conference (67.14%). Overall, 90% of RBC faculty members reported attending ATS sessions after the RBC. Table 2 further details the responses to questions about the RBC’s impact on faculty members.

In the literature, previous descriptions of boot camps for residents have focused on the learners and their outcomes (1–5). This study was the first to focus on the ATS RBC educators, an overall diverse group that included a range of early- to late-career educators, an equal mix of women and men, and practice locations across the United States. However, one notable finding was the absence of respondents reporting African American or Black race. Although we achieved a high response rate among faculty members, there were faculty members not captured by our survey, which could explain this result. Race and ethnicity are not metrics that have been collected as part of RBC faculty recruitment previously, so it is not possible to assess this based on current registration data. Given that faculty educators serve as role models for the learners who participate in the course, ongoing efforts to augment demographic data collection are under way, with the goal of recruiting a diverse group of educators. This survey will provide important baseline data.

Table 1. Demographic characteristics of American Thoracic Society Resident Boot Camp faculty members

Characteristic	Incidence
Gender identity	
Female	34 (49.28%)
Male	34 (49.28%)
Prefer not to answer	1 (1.45%)
Transgender	0
Gender variant/nonconforming	0
Not listed	0
Ethnic and racial identity	
White	38 (55.07%)
Asian	17 (24.64%)
Not listed	6 (8.70%)
Hispanic or Latino	3 (4.35%)
Not Hispanic or Latino or Spanish origin	3 (4.35%)
Prefer not to answer	2 (2.90%)
Black or African American	0
American Indian or Alaskan Native	0
Native Hawaiian or Pacific Islander	0
Current position	
Fellow	
Second year	5 (7.14%)
Third year	4 (5.71%)
Faculty	
1 yr	4 (5.71%)
2–3 yr	11 (15.71%)
4–5 yr	14 (20.00%)
6–10 yr	11 (15.71%)
>10 yr	21 (30.00%)
Main area of practice	
Pulmonary/critical care medicine	42 (60.00%)
Critical care medicine	17 (24.29%)

Table 1. Continued.

Characteristic	Incidence
Pulmonary medicine	6 (8.57%)
Interventional pulmonary	5 (7.14%)
Practice location	
Northeast	26 (37.14%)
Midwest	24 (34.29%)
Southwest	9 (12.86%)
Northwest	7 (10.00%)
Southeast	4 (5.71%)
Career path	
Clinician educator	56 (80.00%)
Clinician researcher	6 (8.57%)
Master clinician	4 (5.71%)
Physician scientist	3 (4.29%)
Undetermined	1 (1.43%)
Years teaching at Resident Boot Camp	
1	26 (37.14%)
2	11 (15.71%)
3	13 (18.57%)
4	4 (5.71%)
5	2 (2.86%)
>5	14 (20.00%)

Although not all fellows completed our survey, those who did valued the opportunity to teach at the RBC. There were also several free-text comments by faculty members noting that they appreciated the opportunity to mentor fellows and provide them feedback on their teaching. Previous studies have demonstrated that fellows deeply value opportunities to develop their teaching skills (6–8). A large survey of pulmonary/critical care fellowship program directors previously

described many challenges to implementing programs to improve medical education skills (9). The increased involvement of fellows as RBC educators may be able to address these challenges on a national level by providing fellows with opportunities to teach, receive feedback, and expand their networks of clinician/educator role models. The RBC was similarly beneficial for faculty members, most of whom described themselves as clinician-educators. Career development for clinician-educators

Table 2. Responses to questions about the impact of the Resident Boot Camp on faculty

Statement/Response	Incidence
Overall experience teaching at RBC	
Very positive	58 (82.86%)
Positive	12 (17.14%)
RBC influenced my decision to attend ATS conference	
Strongly agree	26 (37.14%)
Agree	21 (30.00%)
Neutral	12 (17.14%)
Disagree	7 (10.00%)
Strongly disagree	4 (5.71%)
Attended additional sessions of ATS conference after RBC	
Yes	63 (90.00%)
No	7 (10.00%)
Teaching at RBC increased my engagement with ATS community	
Strongly agree	55 (78.57%)
Agree	14 (20.00%)
Neutral	1 (1.43%)
Teaching at RBC led to more participation in ATS activities (e.g., assemblies, committees)	
Strongly agree	34 (48.57%)
Agree	17 (24.29%)
Neutral	16 (22.86%)
Disagree	2 (2.86%)
Strongly disagree	1 (1.43%)
Teaching at RBC will make me a better educator	
Strongly agree	44 (63.77%)
Agree	20 (28.99%)
Neutral	5 (7.25%)
Teaching at RBC helped me meet people with similar interests	
Strongly agree	49 (70.00%)
Agree	18 (25.71%)
Neutral	3 (4.29%)

Table 2. *Continued.*

Statement/Response	Incidence
Teaching at RBC helped me expand my social network	
Strongly agree	44 (62.86%)
Agree	21 (30.00%)
Neutral	5 (7.14%)
Teaching at RBC can help with my career advancement (e.g., promotion)	
Strongly agree	35 (50.72%)
Agree	19 (27.54%)
Neutral	13 (18.84%)
Disagree	2 (2.90%)

Definition of abbreviations: ATS = American Thoracic Society; RBC = Resident Boot Camp.

comprises training on teaching, developing a teaching portfolio, being observed by fellow teachers, participating in the medical education community, and designing curricula, all of which are potential benefits of teaching at the RBC (10). Because the ATS RBC is the only RBC held at a conference, it is important to note that faculty members who taught at the RBC were more likely to participate in the conference, in part because of a modest conference discount provided by the ATS, as well as increased engagement with the ATS community. This suggests that

programs like the RBC are directly beneficial for professional societies because educators are a major source of innovation, particularly for organizations like the ATS with significant educational missions. Therefore, in addition to having direct positive impacts on learners and educators, the ATS RBC represents a promising model for fostering a sense of professional community at an international conference.

Author disclosures are available with the text of this article at www.atsjournals.org.

REFERENCES

1. Drake MG, Shah NG, Lee M, Brady A, Connors GR, Clark BJ, *et al*. Development of a national academic boot camp to improve fellowship readiness. *ATS Scholar* 2020;2:49–65.
2. Blackmore C, Austin J, Lopushinsky SR, Donnon T. Effects of postgraduate medical education “boot camps” on clinical skills, knowledge, and confidence: a meta-analysis. *J Grad Med Educ* 2014; 6:643–652.
3. Yee J, Fuenning C, George R, Hejal R, Haines N, Dunn D, *et al*. Mechanical ventilation boot camp: a simulation-based pilot study. *Crit Care Res Pract* 2016;2016:4670672.
4. Schroedl CJ, Corbridge TC, Cohen ER, Fakhran SS, Schimmel D, McGaghie WC, *et al*. Use of simulation-based education to improve resident learning and patient care in the medical intensive care unit: a randomized trial. *J Crit Care* 2012;27:219.e7–219.e13.

5. Moazed F, Cohen ER, Furiasse N, Singer B, Corbridge TC, McGaghie WC, *et al.* Retention of critical care skills after simulation-based mastery learning. *J Grad Med Educ* 2013;5:458–463.
6. Kempainen RR, Hallstrand TS, Culver BH, Tonelli MR. Fellows as teachers: the teacher-assistant experience during pulmonary subspecialty training. *Chest* 2005;128:401–406.
7. McSparron JI, Huang GC, Miloslavsky EM. Developing internal medicine subspecialty fellows' teaching skills: a needs assessment. *BMC Med Educ* 2018;18:221.
8. Richards JB, Kelly E, Fessler H, Roberts DH. A novel survey tool to assess pulmonary and critical care fellows' attitudes regarding acquiring teaching skills during fellowship training. *J Grad Med Educ* 2013;5:506–509.
9. Richards JB, McCallister JW, Lenz PH. Pulmonary and critical care medicine program directors' attitudes toward training in medical education. A nationwide survey study. *Ann Am Thorac Soc* 2016;13:475–480.
10. Roberts DH, Schwartzstein RM, Weinberger SE. Career development for the clinician-educator. Optimizing impact and maximizing success. *Ann Am Thorac Soc* 2014;11:254–259.