Progress toward National ORL Simulation Boot Camps

Sonya Malekzadeh, MD
Kelly Malloy, MD
Ellen Deutsch, MD
Judith Lieu, MD
Nicole Maronian, MD
Background

- Novice trainees face many **challenges**
- **Lack the technical and non-technical skills** as well as confidence, to manage routine or emergent clinical situations
- **Reduced efficiency and increased mortality** in hospitals at the start of the academic year ("July effect")
- **Simulation** vital role in preparing residents with appropriate knowledge, skills and behaviors to safely care for patients
Surgical Specialties

• **Introductory boot camps** as transition courses: neurosurgery, trauma, orthopedic surgery, and cardiothoracic surgery

• Specific technical and cognitive requirements have created **standard curricula** that support the rapid development of basic skills

• Adopted a **regionalization strategy** to access the education
  • Economies of scale for faculty, simulation assets and organizational effort
  • Justifies travel and short periods of absence from the home institution
  • Standardized curriculum
Otolaryngology Boot Camps

• **First ORL BC** developed a decade ago
• **Highly valued** by residents and also provide benefits for faculty
• Although many similarities between the courses, the **curriculum is diverse**
• **Only fraction** of otolaryngology residency cohort participate in these courses
To show this poll

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or
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<table>
<thead>
<tr>
<th>Activity</th>
<th>Responses</th>
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<td>TEST POLL - What is your favorite color?</td>
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<td>ACGME 20% Protected Time: Fund It, Carve It Out, Make the Most of It</td>
<td>7</td>
</tr>
<tr>
<td>Do you have 20% protected &quot;non-clinical&quot; time to devote to PD role?</td>
<td>37</td>
</tr>
<tr>
<td>Is stipend for PD role compensated as equivalent to 20% of your total income?</td>
<td>52</td>
</tr>
<tr>
<td>Do you have an APD?</td>
<td>52</td>
</tr>
<tr>
<td>Is your APD position funded?</td>
<td>59</td>
</tr>
<tr>
<td>Logout</td>
<td></td>
</tr>
</tbody>
</table>
### New activity

- **Ungrouped**
  - 1 activity
    - TEST POLL - What is your favorite color?  
      - 2 responses

- **ACGME 20% Protected Time: Fund It, Carve It Out, Make the Most of It**
  - 7 activities
    - Do you have 20% protected "non-clinical" time to devote to PD role?  
      - 37 responses
    - Is stipend for PD role compensated as equivalent to 20% of your total income?  
      - 52 responses
    - Do you have an APD?  
      - 52 responses
    - Is your APD position funded?  
      - 59 responses

Logout
Task Force Charge

Developing a proposal for **regionalization** of simulation boot camps that:

• 1) is **cost-effective, feasible** and provides the widest coverage of learners;
• 2) optimizes the **core curriculum** for best educational outcomes; and
• 3) outlines **budget** considerations.
Task Force Members

- Sonya Malekzadeh
- Ellen Deutsch
- Judith Lieu
- Kelly Malloy
- Brian Cervenka
- Jim Kearney
- Maya Sardesai
- Noel Jabbour
- Michael Platt
- Marc Gibber
- Liana Puscas
- Nicole Maronian
- Jennifer Lee
- Orly Coblens
- Arnaud Bewley
- Mark Wax
Sub-committees

1. **Current landscape** of otolaryngology boot camps
2. **Curriculum** - structured and standardized
3. **Resource and financial** considerations
CURRENT BOOT CAMP LANDSCAPE
NATIONAL ORL BOOT CAMP TASK FORCE

Kelly Michele Malloy
Jim Kearney
Orly Coblens
Noel Jabbour
Marc Gibber
2018 REGIONAL BOOT CAMPS: LEARNER CAPACITY & FACULTY NEEDS

*NY/NJ is a new BC this year
RESIDENT DISTRIBUTION PER REGION

- Midwest 85
- Northeast 91
- Southeast 65
- Southwest 31
- West 45
RESIDENT DISTRIBUTION PER MAJOR METROPOLITAN AREA
Progress Toward National ORL Simulation Boot Camps

Curriculum

Ellen Deutsch MD
Brian Cervenka MD
Charge

• Standardize a core curriculum for best educational outcome
• Define a systematic central curriculum consisting of principal components (knowledge, skills, behaviors)
• Teach the fundamental cognitive and practical skills that are most relevant during transition from medical school to otolaryngology residency
Target learners

• PGY 1 and 2 at Program’s discretion
Basis of educational content

• ACGME requirements
• Information from
  • Program Directors survey (2017)
  • Boot Camp Directors survey (2018)
  • ORL Emergencies Residents survey (2019)
  • Consensus of SUO regional boot camp task force and guests (2019)
Core Curriculum to address

- Procedural Skills, including non-technical and professional skills
- Management Skills, including diagnosis and management; team leadership
- Residents’ primary source of anxiety: airway emergencies
Design principles

• Optimize opportunities for participatory, hands-on, experiential learning with coaching and feedback
• Standardize core (minimum) topics for simulation-based curriculum
• Allow curriculum that is difficult to simulate effectively
• Provide opportunities to innovate
Consensus for 5 procedural skill simulations

- Surgical airway
- Basic airway management
- Fiberoptic laryngoscopy
- Epistaxis control
- Direct laryngoscopy
Consensus for 2 management scenario simulations

- Can’t intubate, can’t ventilate
- Complication involving bleeding
Logistics

- Duration: 1 day
- Day of week: Saturday
- Time of year: Summer
Next steps

• Support emerging boot camps
• Coordinate boot camp schedules including both residents and faculty
• Develop processes to assess benefit and outcomes – for both residents and patients – without jeopardizing psychological safety
• Expand faculty development
Progress toward National ORL Simulation Boot Camps: Finances

Judith E. C. Lieu, MD MSPH
Society of University Otolaryngologists
November 22, 2019

Department of Otolaryngology-Head and Neck Surgery
Methods

• Data gathered from 7 existing regional bootcamps during the July 2018 bootcamp season
  • Number of faculty and residents
  • Center fees
  • Materials
  • Registration and administration
  • Food
  • Travel
  • Lodging
  • Miscellaneous
Center Fees

• Simulation fees, $0 - 4,000

• Staff fees, $0 – 16,052
  • $50/hour/staff

• Lab/room rental fees, $0 – 5,453
  • $100/hour/room

• Faculty fees, $0 - 2600
Materials

- Pig or sheep larynges, $0 – 250 total
- Disposables, $100 – 2,250 total
- Models, $0 - $1200 total
  - $350 per 3D printed ears
  - $800 per specimen
- Equipment, $0 – 14,000 total
  - 3D equipment most expensive
  - Rental of high fidelity
- Pig feet, $16 – 3192 total
  - $158 per person
Administration & Food

- Registration fees, $50 - $250 per resident
  - 14-50 residents/bootcamp
  - 12-30 faculty/bootcamp
- Admin fees mostly absorbed by each site
  - ~20 hours
- Food included breakfast, snacks, lunch
  - Sometimes dinner included
  - Some industry sponsoring
Travel and Lodging

• Personal cars
• Programs paid for residents travel
• Faculty paid for own travel

• One site provided lodging for faculty
Overall Expense Information from 2018

- **Revenue:**
  - Resident registration fees were the main source of revenue for all boot camps, ranging from $50-250 per resident
  - The departments universally paid for resident registrations
  - Varying amounts of equipment and supplies were provided as donations by industry
  - One center with endowment

- **Expenses:**
  - Overall expenses varied from less than $1000 to approximately $44,000
  - Registration fees covered supplies, disposables and food, not always simulation center fees or rentals
Expenses

• Materials and supplies varied considerably, with the greatest expense coming from rented equipment and 3D printed materials.

• Food was provided for faculty, trainees and staff during all boot camps, covering at least breakfast, snacks and lunch.

• Travel expenses for both residents and faculty were mostly covered or reimbursed by the departments or the individual participants.

• Simulation centers did not uniformly charge. When they did, this expense could be the most expensive (up to $20,000).
Not Reimbursed

- Faculty time spent for creation of protocols/simulation scenarios, organization and preparation, travel, and administrative time was not estimated
- No faculty honoraria were paid
**Recommendations**

Future sources of revenue for new/ongoing bootcamps include:

- Resident registration fees
- Educational grants from industry sponsors
- Equipment donations from industry
Criteria

• Combined efforts of SUO Bootcamp Taskforce and SUO Leadership/ AAO-HNS
• Overarching goal is to increase access to bootcamps

• Priorities:
  • Expansion for additional residents to accommodate regional institutions
  • Adding new bootcamps where there is a regional gap

• Requirements:
  • SUO member or candidate member in good standing
  • Applications opened August 15 – closed September 6
  • Responses to PI – October 15

• Award
  • $50,000 from SUO, recurring over 3 years
Announcement SUO Boot Camp Expansion Grant

The SUO ENT Boot camp regionalization task force seeks to align the needs of our ENT residency programs simulation training for ENT emergencies.

Ideally, all early level trainees should have access and ability to attend a simulation based Boot Camp to develop consistent requisite baseline skills for safe patient care. A total of $50,000 of grant funding will be allocated to individual programs based on review of their proposals for merit and competition using an NIH based scoring rubric. Projects submitted should have a maximum 2-year timeline for completion.

We invite programs to apply for funding support to:
1) establish new simulation-boot camp programs or,
2) to support expansion of existing programs with accommodation of additional residents, or additional training elements.

For further information, please view details via the application portal https://form.jotform.com/91326854309966.
NIH Format

Merit based, competitive application
Same format as other NIH, AAO-HNS CORE grants, other SUO grants

NIH Scoring Rubric
How well the grant met criteria and had impact

Reviewers – SUO Bootcamp Taskforce, 3 reviewers per grant application
Provided with a current landscape of known available bootcamps
Screened for conflict of interest
# Boot Camp Grant Application Scoring Rubric

## Applicant

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Name of Principle Applicant</th>
</tr>
</thead>
<tbody>
<tr>
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## Reviewer

<table>
<thead>
<tr>
<th>Name of Reviewer</th>
<th>E-mail Address</th>
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<tr>
<td></td>
<td>ex: <a href="mailto:myname@example.com">myname@example.com</a></td>
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## Please use the following rubric:

<table>
<thead>
<tr>
<th>Overall Impact or Criterion Strength</th>
<th>Score</th>
<th>Descriptor</th>
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</thead>
<tbody>
<tr>
<td>Low</td>
<td>1</td>
<td>Exceptional</td>
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<tr>
<td>High</td>
<td>2</td>
<td>Outstanding</td>
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<tr>
<td>Medium</td>
<td>3</td>
<td>Excellent</td>
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<tr>
<td></td>
<td>4</td>
<td>Very Good</td>
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<td>Low</td>
<td>5</td>
<td>Good</td>
</tr>
<tr>
<td>Low</td>
<td>6</td>
<td>Satisfactory</td>
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<tr>
<td>Low</td>
<td>7</td>
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<td>8</td>
<td>Marginal</td>
</tr>
<tr>
<td>Low</td>
<td>9</td>
<td>Poor</td>
</tr>
</tbody>
</table>
### Significance
- Aligns with SUO Bootcamp Grant Mission, to establish simulation-based immersive program with structured curricula to bolster, expedite and standardize incoming otolaryngology residents' acquisition of basic knowledge and skills to prepare them for safe and effective management of emergencies.
- The project/program addresses regional bootcamp needs and/or involves a region designated by SUO as being most in need.

#### Score *

<table>
<thead>
<tr>
<th>Score</th>
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<tbody>
<tr>
<td></td>
<td>✚</td>
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</table>

### Program/Investigator
- Provides clear explanation of the proposed experience for participants, including program, structure, participants, and logistics.

#### Score *

<table>
<thead>
<tr>
<th>Score</th>
<th></th>
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<tbody>
<tr>
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</table>

### Accessibility/Innovation
- Presents strategy for involving participants most in need.

#### Score *

<table>
<thead>
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<tbody>
<tr>
<td></td>
<td>✚</td>
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</table>

### Evaluation/Approach
- Provides a clear and thorough means to evaluate the quality of participant experience.
- Program is well-planned, with simulation/training resources available and engaged stakeholders.

#### Score *

<table>
<thead>
<tr>
<th>Score</th>
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<tbody>
<tr>
<td></td>
<td>✚</td>
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</table>

### Environment
- Budget is clear, comprehensive and reasonable.
- Sustainability plan is well-articulated and achievable.

#### Score *

<table>
<thead>
<tr>
<th>Score</th>
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<tr>
<td></td>
<td>✚</td>
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</table>

### Total Score (mean)  
**23**

### Comments/Feedback
**Strengths and weaknesses**
Application Comments from Reviewers

**Strengths:**
Utilizing existing Bootcamp program for simulation, recent local expansion in participant number. 
Plan to market Bootcamp to otolaryngology programs in the region. 
Already had confirmation of support from proposed programs 
Experienced Bootcamp and PI 
Support of PI from Program Director and Chair. 
Budget is mostly planned for direct costs of running the bootcamp

**Weaknesses:**
No confirmation from targeted programs that they are interested in participating. 
PI is not a SUO member 
Evaluation is basic pre-/post- survey. No other evaluations. 
Budget is excessive and focuses on travel vs procedural elements
Funding

• 12 submissions
• Diverse locations with impact
• Most grants requested funding for two years

• 4 grants funded for 2019-20
• Most will be funded pending progress report for 2020-21
Congratulations!!

• Phillip LoSavio MD   Rush   Chicago IL
• David Hom MD        UCSD   San Diego CA
• Orly Coblens MD     UTMB   Galveston TX
• Gina Jefferson MD   U Miss Jackson MS
## Awarded Grants

<table>
<thead>
<tr>
<th>Application</th>
<th>Location</th>
<th>PI</th>
<th>Budget Year 1</th>
<th>Budget Year 2</th>
<th>Total Budget</th>
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<tr>
<td>SUO Midwest Regional Bootcamp</td>
<td>Chicago, IL</td>
<td>Phillip LoSavio MD</td>
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<td>Effective Responses to Emergencies in Otolaryngology</td>
<td>San Diego, CA</td>
<td>David Hom MD</td>
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<td>Otolaryngology – Head and Neck Surgery Simulation Boot Camp at the University of TX Medical Branch</td>
<td>Galveston, TX</td>
<td>Orly Coblens, MD</td>
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<td>Transition of University of Mississippi ORL Emergency Simulations</td>
<td>Jackson, MS</td>
<td>Gina Jefferson, MD</td>
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<td><strong>Total</strong></td>
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<td><strong>29,858</strong></td>
<td><strong>24,858</strong></td>
<td><strong>$54,715</strong></td>
</tr>
</tbody>
</table>
ORL Boot Camp Grants 2019

- Regional BC 2018
- Single BC 2018
- Single BC 2019
- 2019 Interest
- 2019 Grant
Questions?
Questions or suggestions

- Sonya Malekzadeh  
  malekzas@georgetown.edu

- Kelly Malloy  
  kellymal@med.umich.edu

- Judy Lieu  
  lieujudithe@wustl.edu

- Nicole Maronian  
  Nicole.maronian@uhhospitals.org

- Brian Cervenka  
  cervenka08@gmail.com

- Ellen Deutsch  
  deutsches@email.chop.edu