

## **AAA Science Communication Bootcamp**

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2017 AAA Innovations Program Proposal

### **ABSTRACT**

Funding is requested to support the development and delivery of the inaugural *AAA SciComm Bootcamp* (SCBC), a 3-day, hands-on professional development workshop in effective science communication strategies to be held in Indianapolis, IN, during June or July, 2019. This workshop will be modeled on the Anatomy Education Research Institute held in July, 2017, in Bloomington, IN, and funded by a 2015 AAA Innovations Grant. This proposal supports goals A and D of the AAA strategic plan. Similar to our successful workshop at Experimental Biology in April, 2017, we plan to use highly engaging, experiential education techniques to improve AAA members' ability to communicate about anatomical sciences, thus contributing to transforming public perceptions of the discipline. During the first two days of the workshop, participants will receive formal training from the faculty of the Alan Alda Center for Communicating Science at Stony Brook University (Indiana University is an affiliate of this center). The training borrows techniques from applied improvisational theater to teach participants to effectively connect with their audience in real time, to distill their message into language that is free from jargon and easily understood by the general public, and to use storytelling as a mechanism for these tasks. The third day of the SCBC workshop will bring together members of local and regional print, radio, and television media for programming that will enhance participants' effectiveness in communicating through these media; as well as a session devoted to effective communication with policymakers led by Jennifer Zeitzer, Director of the FASEB Legislative Relations office, or a representative from her office. Registration for SCBC will be free and available to AAA members only; scholarships will be awarded to pay for the airfare and hotel accommodations for two early career anatomists (a graduate student/postdoc and an untenured faculty member) to attend the SCBC as well as to participate as a formal member of the AAA delegation at the Spring, 2020, FASEB Capitol Hill Day. Future SCBC workshops will be sustained through the professional development and continuing education of AAA members, including the PIs who will become certified trainers for the Alda Center. Future SCBC workshops could be opened to non-AAA members as a revenue stream, and nominal registration fees could be charged to cover the cost.

## SPECIFIC AIMS

Scientific knowledge has expanded dramatically in the 21<sup>st</sup> century. Yet, scientists have reached consensus on many issues that the public and elected officials have not. To bridge this gap, scientists and educators need to connect and engage with the public, policymakers, funders, students, and professionals from other disciplines. Communication scholars have identified a number of effective tactics that involve and inform the public. However, our sometimes-siloed thinking in science and higher education discourages sharing this knowledge across disciplinary lines. Further, many training programs focus on educating about which communication strategies work, but they fail to provide participants with the opportunity to develop the skills required to listen effectively and respond in an engaging way.

Following up on the successful AAA professional development sessions at EB 2017 entitled “Storytelling and the Art of Effective Science Communication,” participants in SCBC will be actively engaged and immersed in training designed to develop audience-centered communication, distill scientific concepts into meaningful narratives, and connect effectively with the public, collaborators and policymakers. To that end, participants will practice these techniques in presentation training sessions, media training sessions, and advocacy workshops.

Funding is requested to support the development and delivery of the inaugural AAA *SciComm Bootcamp* (SCBC), a 3-day, hands-on professional development workshop in effective science communication to be held in Indianapolis, IN, in June/July 2019. The SCBC program is modeled after the Anatomy Education Research Institute held in July, 2017, in Bloomington, IN, and funded by a 2015 AAA Innovations Grant. The SCBC program will include two days of formal training from the faculty of the Alan Alda Center for Communicating Science at Stony Brook University (Indiana University is an affiliate of the Alda Center) in the use of applied improvisational theater to teach participants to effectively connect with their audience in real time, to distill their message into language that is free from jargon and easily understood by the general public, and to use storytelling as a mechanism for these tasks. The third day of the SCBC workshop will bring together members of local and regional print, radio, and television media for programming that will enhance participants’ effectiveness in communicating through these media; as well as a session devoted to effective communication with policymakers led by Jennifer Zeitzer, Director of the FASEB Legislative Relations office.

The SCBC will accomplish the following specific aims:

1. To equip a cadre of AAA members with a toolkit of methods proven to enhance the effectiveness of science communication: dynamic listening, message distilling, storytelling, and audience connection all derived from the principles of improvisational theater.
2. To provide a collegial and interactive environment where SCBC participants can practice the communication skills they learn in real time, network with others, and train to communicate science with the media and with policymakers.
3. To establish AAA as the leading FASEB organization for science communication and public outreach.

The proposed SCBC addresses two major goals of the AAA Strategic Plan:

Goal A: *Transform the perception of AAA and the discipline of anatomy.* We aim to make AAA the premier FASEB society engaging the public through effective science communication. Of note, ASBMB currently holds a basic seminar in science communication, but it does not adequately address the complex nature of the communication and decision-making process. Our approach will better prepare AAA members to become effective communicators in the changing political and educational landscape.

Goal D: *Maximize member engagement.* We had over 100 highly-engaged attendees at our program at EB2017. Based on that positive feedback, we expect to attract significant interest from the AAA membership to participate in SCBC. Moreover, we will recruit as SCBC workshop participants, members of *I Am Anatomy* and *Anatomy for Everybody* Innovations Grant teams who are already on the leading edge of transforming the perception of AAA and our discipline with the public and other sciences. We will target these members especially, because we can help them communicate more effectively, thus maximizing the outcomes from previous Innovations Grant funding.

## **SIGNIFICANCE AND INNOVATION**

**Science has a communication problem—one that can be solved.** As our fields have become more complex, some Americans have given up trying to understand what we do, leading to scientific illiteracy. Although scientists have reached consensus on many issues, such as anthropogenic climate change or evolution, the public and elected officials have not. Recent survey research from the Pew Center indicates that there is a wide gap between scientists' and the public's perception of how science is used to inform government policy [1]. In the same survey, 84% of the scientists who responded said that limited public knowledge about science was a "major problem" [1]. To that end, twice in the last five years [2, 3], the National Academy of Sciences has published special editions of their proceedings on "The Science of Science Communication," and just this year published a seminal report entitled "Communicating Science Effectively: A Research Agenda," [4].

*The timing is right to focus on making effective science communication training a fundamental part of undergraduate/graduate education as well as part of faculty development programming.* To train scientists and science learners in these skills, many universities have turned to the techniques of improvisational theater (applied improvisation) in order to help learners speak more spontaneously, responsively, and engagingly. For example, programs such as the Alan Alda Center for Communicating Science at Stony Brook University have developed innovative curricula based on Viola Spolin's theater games [5, 6] that help scientists transform their approach to talking with the lay public about complex research. Likewise, the Medical Improv program created by Katie Watson at Northwestern's Feinberg School of Medicine and Belinda Fu at the University of Washington teaches health care providers to communicate more effectively within their teams and with greater empathy and clarity to their patients.

**Communication scholars have identified a number of tactics that more successfully engage and inform the public.** Rhetorical education and communication theory provide essential complements to applied improvisation. For instance, communication theory teaches a sophisticated understanding of audience as co-creator of meaning in the communication process. Effective communication practice responds spontaneously to the needs of an audience and takes advantage of the resources available in the interaction. This understanding provides a more critical approach to communication practice. It treats communication as a translational process of meaning-making, rather than solely information dissemination. Merely delivering a speech with more flair or better slides will not improve the communication gap with the public. Science experts need the ability to "perspective take" with their audiences. They need the skills of empathetic imagination, an ability to think like their audience, and responsiveness to an audience's needs and interests [7]. Several expert science communicators serve as exemplars for the importance of public communication: Neil deGrasse Tyson, Bill Nye, Brian Greene, and Aaron Carroll. However, these experts can too easily make scientific communication seem like an innate skill reserved only for a few, naturally-gifted celebrities. Rhetorical education stresses that *everyone* requires these skills for communicating to broad public audiences and that *anyone* can develop these ways of thinking and speaking through practice, experience, and education.

**Science communication needs expert voices.** The internet and social media provide powerful tools to communicate and advocate for science, yet many scientists have avoided engaging the public online or even face-to-face. In part, this is because of an assumption that science and advocacy are fundamentally incompatible: science is concerned with objectively observing natural processes whereas advocacy is inextricably linked to subjectivity and a desire for the way the world *ought to be* [8-10]. Some scientists worry that engaging in advocacy will harm their credibility as objective scientists, even though data suggest otherwise [10]. Without expert voices communicating science to the public and policymakers, fields like healthcare, climate science, and evolutionary biology have been overrun with conspiracy theories and misinformation. Because scientific fields continue to increase in complexity, the American public—whose tax dollars fund federal research grants—is left behind.

**The PIs are committed to practicing effective science communication as well as training students, postdocs, and faculty in effective science communication strategies.** Both PIs are alumni of the Alda Center's Scientist Boot Camp, an intensive 5-day immersion experience where scientists are trained to use applied improvisational theater techniques to verbally and non-verbally connect with audiences in real-time (in the moment), and to distill messages to be understandable to the public as well as non-specialists. Indiana University (IU) is an affiliate of the Alda Center, and the PIs have already developed an active training three-session science communication workshop series for IU scientists and physicians, through the Office of Faculty Affairs and Professional Development (OFAPD), modeled after the program at the Alda Center (see Figure 1).

Identifying a need for more training opportunities for students, the PIs were awarded an intramural curriculum enhancement grant in 2016 to design a graduate minor in communicating science at IUPUI, and have recently begun teaching the inaugural courses in Fall Semester 2017. Finally, in June 2017, the PIs were appointed Co-Editors of the PLOS Science Communication Blog (SciCommPLOS) ([blogs.plos.org/scicomm](http://blogs.plos.org/scicomm)) on the strength of previous science outreach blogging at THE 'SCOPE ([thescopepopculturescience.blogspot.com](http://thescopepopculturescience.blogspot.com)), and continue to use the SciCommPLOS platform to advocate for the importance of storytelling to effective science communication.

**Science Communication: Before & After the Alda Curriculum Workshop**

|  |   |
|--|---|
|  <p>Which is more memorable?</p> <p> I study <i>Didymosphenia geminata</i>, an invasive riverine species that impairs the recreational and ecological values of waterways.</p> |  <p>Which is more memorable?</p> <p> I study rock snot, a kind of alga that forms brown, oozing masses that look like a sewage spill. These get so big that they block rivers and kill fish.</p> |
| <p>These slides are used in the Communicating Science workshop series. This is the difference a faculty member exhibited after working with the Alda training staff on campus. Please note: "rock snot" is an accepted technical term in the faculty member's discipline.</p>  |   |

Figure 1. Example of using metaphor and simple language to communicate a complex scientific principle. From the workshop series developed by the PIs at Indiana University School of Medicine.

## APPROACH

Today more than ever, the communication landscape is fraught with misinformation. The public turns to multiple sources for information, including friends, the internet, and social media. The need for scientists to communicate effectively reaches far beyond the bench or the discipline. To that end, we will develop a 3-day workshop designed to train AAA members to communicate complex scientific information to those outside the discipline and bring this training back to colleagues at their campuses. Our approach includes the following interventions: 1) a hands-on training workshop using techniques from applied improvisation facilitated by the Alan Alda Center for Communicating Science, 2) interactive discussions and mock interviews with members of local and regional media, 3) training for communicating with policymakers by representatives from the legislative relations office at FASEB, and 4) a toolkit designed to help participants facilitate similar sessions at their home institution.

Expected Audience. Registration for the inaugural SCBC program will be free and open to AAA members only, therefore enticing non-members to join the organization, and will be capped at 32 participants. Expected participants will include faculty, graduate students, and postdocs wishing to enhance their skills in effective science communication. We will specifically recruit leaders from the *I Am Anatomy* and *Anatomy for Everybody* Innovations Grant teams to participate in SCBC, recognizing that our program has the potential to add tremendously to the effectiveness of these programs in interfacing with the public. Additionally, we will offer scholarships (airfare and lodging) to one graduate student and one early career anatomist (postdoc or

untenured faculty) to attend SCBC. These scholarships will be awarded based on the strength of a short essay statement on the importance of science communication that will form part of the SCBC application process.

## Preliminary Agenda for SCBC

### **Day 1**

#### **8:30 - 9:00: Check in & Registration**

**9:00 - 9:30 am: Welcome to the Alda Center's Science Communication Workshop.** In this opening session, participants will be introduced to the Alda team and the origin of the Alda Center. We will discuss the importance of effective science communication and the challenges participants face.

**9:30 am - 12:00 pm: See and Be Seen.** Participants will explore the foundations of Listening and Connecting. Improvisational theater exercises require participants to pay close, dynamic attention to others, read body language and nonverbal cues, and respond naturally. This is not about acting or making things up. It is about shifting focus from what participants are saying to what the audience is receiving. This helps participants make a more direct and personal connection with the audience. This pre-lunch session culminates with a reflection routine - Connect/Extend/Challenge.

#### **12:00 – 12:45 pm: Lunch**

**12:45 – 2:00 pm: Context and Relating to Your Audience.** Participants will explore different ways of connecting through common ground, story, and strategy. They will work to connect their science with several specific audiences and learn how to use a tool to prepare for conversations in science.

**2:00 – 3:15 pm: Conversational Science (Breakout).** Participants will focus on refining goals and understanding the needs of the audiences they intend to reach. Building on the tools addressed in See and Be Seen, they will work in teams to clarify your message, speak boldly and vividly, and understand the importance of ordering complicated information. This session includes partnering and role play.

#### **3:15 - 3:30 pm - Break**

**3:30 – 4:45 pm: Preparing for a Difficult Conversation (Breakout).** Participants will focus on identifying your goal with a difficult audience you are hoping to reach and designing your communication/message accordingly.

#### **4:45 – 5:00 pm: Reflection Routine (& Wrap Up)**

### **Day 2**

**9:00 – 10:00 am: Bold and Vivid Connections.** Day Two will launch with exercises to help participants connect with the audience in bold, expressive ways and prepare to deliver a 1-minute pitch about their science.

#### **10:00 -10:15 am: Break**

**10:15 am - 12:00 pm: Just a Minute (JAM) sessions (Breakout).** Using the strategies developed in Bold and Vivid Connections, participants will present their science in Just a Minute with peer and professional feedback.

#### **12:00 - 12:45 pm: Lunch**

**12:45 – 2:45 pm: Stories of Science.** This post-lunch session builds on previous exercises and conversations to help participants develop and craft their science into an impactful story. Practice with partners, and coaching helps the participants to prepare to perform their science story by the end of the day.

#### **2:45 – 3:00 pm: Break**

**3:00 – 4:30 pm: Practice to Perform.** Working in small group breakout sessions, participants will hone, practice, and perform their stories with peer and professional feedback.

**4:30 - 5:00 pm: Celebrating the Journey.** Returning to a full group finale, participants will be invited to share a few stories that they have been crafting through the afternoon sessions, learning moments, and feedback about the workshop.

### Day 3

**9:00 – 11:00 am: Making it Visual.** Day Three will launch with exercises to help participants master the art of effective visual communication. We will spend time discussing ways to present data graphically, what makes effective charts and graphs, and how to tell a story with an infographic.

**11:00 -11:15 am: Break**

**11:15 am - 1:00 pm: Using Your Voice.** Using the strategies learned in the previous two days, this session will focus on advocacy and outreach, and how to tailor your message to resonate with policymakers on Capitol Hill.

**1:00 - 1:45 pm: Lunch**

**1:45 – 3:30 pm: Media Panel and Mock Interviews.** This post-lunch session will provide participants with tools useful when using your voice in media interviews. We will have a panel discussion with members of local and regional media. Then, participants will break out to practice the skills learned throughout the workshop in mock media interviews.

**3:30 – 3:45 pm: Break**

**3:45 – 5:00 pm: Science Communication Training Toolkit.** Facilitators will provide participants with sample tools (workshop plans, debriefing strategies, and communication tools) to develop a shorter version of the Science Communication workshop at their own institutions.

SCBC Program Evaluation. The program will be evaluated in a 2-pronged manner, using strategies from the Kirkpatrick and Kirkpatrick [11] evaluation model widely used in educational and faculty development training programs.

First, participants will be asked to complete pre- and post-test evaluations (5-pt. Likert scale: Strongly Agree/Agree/Undecided/Disagree/Strongly Disagree) regarding their comfort and willingness to communicate their science in multiple media platforms. The questions on these tests are used currently with our own internal science communication workshops and will provide with an opportunity to compare data across multiple programs centered on science communication.

Second, six months following the workshop, participants will be invited to participate in semi-structured interviews on the strategies used since the workshop and the challenges they faced when implementing their science communication program. Interviews will be audio-recorded, transcribed, and evaluated using a thematic analysis for a descriptive case study [12, 13].

Results of the program evaluation will be disseminated through published abstracts and presentations to be submitted to the National Communication Association and Experimental Biology. Results of the study also will be submitted for publication in peer-reviewed journals such as *Science Communication* or *PLOS ONE*, or if appropriate *Anatomical Sciences Education*, and highlighted on the Public Library of Science (PLOS) Science Communication blog (both PIs on this proposal are editors and writers).

Study Hypotheses. Following the science communication workshop, participants will *agree/strongly agree* with the following statements on the post-test survey:

- I developed more effective strategies to communicate my ideas
- I know how stories help a speaker to connect with an audience
- I identified ways to adjust the complexity of my message for my audience
- I identified ways to adjust my message for time constraints
- I feel better prepared to engage with the public and/or policymakers on science topics
- I feel better prepared to give interviews or otherwise participate in the media on science topics

Human Subjects. If this Innovations Grant is awarded, the PIs will submit human subjects paperwork through the IU Institutional Review Board in order to assess participant perceptions of the value of SCBC and to track participants' development as science communicators. Participants will be informed of the PIs' evaluation of SCBC and will be asked to sign informed consent statements if they wish to allow their data to be used in SCBC presentations and publications. Note: Both PIs are current with their CITI certifications.

Science Communication in Action. Skills learned at the AAA SCBC workshop will be put into action immediately. In addition to receiving science communication training at no cost, the two full scholarship winners—a graduate student/postdoc and an early career anatomist—will be invited to participate in the annual FASEB Capitol Hill Day as part of the AAA delegation (permission granted by Shawn Boynes, AAA Executive Director). Funding from the Innovations Grant will support the travel and lodging for these two participants as well as for the PIs of this proposal to utilize science communication training in discussions with policymakers.

Sustainability of SCBC. After the inaugural SCBC workshop in the summer of 2019, we hope to offer additional SCBCs every two years, which will be open to all members of any FASEB society. Registration fees will be collected from participants in future years in a two-tiered manner: AAA members will pay a reduced rate compared to participants from other FASEB societies. We believe that the substantial increase in science communication and outreach in response to the ever-changing political landscape will create a demand for scientists and educators to become better-equipped to communicate what they do and why it is important. SCBC can provide these tools. So, to help sustain SCBC after 2019, we will utilize the resources of the IU Office of Faculty Affairs and Professional Development (OFAPD) and the IU Center for Anatomical Sciences Education to assist with administrative infrastructure to help plan the workshop logistics. Additionally, as part of the IU affiliate program with the Alda Center, funding is requested here for the PIs to keep current with the newest methods and curricula offered by the Alda Center through continuing education and certification. With this certification and continuing education, the PIs will be able to facilitate instruction at future SCBC workshops, which will reduce the cost of having Alda Center staff directly involved—the program will become AAA’s program, inspired by the Alda Center scientist bootcamp.

## **TIMELINE**

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|-----------------|---|
| Spring 2018:    | Secure 2019 dates and rooms at IU School of Medicine for SCBC, reserve block of hotel rooms for participants, secure contracts with Alda Center staff and with food vendors |
| June 2018:      | Contact potential invited media participants, as well as targeted participants ( <i>I Am Anatomy</i> and <i>Anatomy for Everybody</i> team leaders – 2 people/team)         |
| August 2018:    | Prepare detailed workshop agenda in consultation with Alda Center, develop SCBC informational website, consult with AAA to establish an online registration format for SCBC |
| January 2019:   | Begin solicitation of registrants   |
| June/July 2019: | SCBC workshop to be held in Indianapolis, IN  |
| July 2019-2020: | Assessment and evaluation of SCBC by PIs  |
| Spring 2020:    | SCBC scholarship winners and PIs participate in FASEB Capitol Hill Day  |
| June 2020:      | PIs attend continuing education workshops at Alda Center  |

## REFERENCES CITED

1. Funk, C. and L. Rainie, *Public and scientists' views on science and society*. Pew Research Center, 2015. **29**.
2. Sciences, N.A.o., *The Science of Science Communication II: Summary of a Colloquium*. 2014, Washington, DC: The National Academies Press.
3. Sciences, N.A.o., *The Science of Science Communication I: Summary of a Colloquium*. 2012, Washington, DC: The National Academies Press.
4. National Academies of Sciences, E., and Medicine, *Communicating Science Effectively: A Research Agenda*. 2017, Washington, DC: The National Academies Press.
5. Spolin, V., *Improvisation for the theater, 3rd edition*. 1999, Evanston, IL: Northwestern University Press.
6. Spolin, V., *Theater Games for the Classroom: A Teacher's Handbook*. 1986, Evanston, IL: Northwestern University Press.
7. Brownell, S.E., J.V. Price, and L. Steinman, *Science communication to the general public: why we need to teach undergraduate and graduate students this skill as part of their formal scientific training*. Journal of Undergraduate Neuroscience Education, 2013. **12**(1): p. E6.
8. Nelson, M.P. and J.A. Vucetich, *On advocacy by environmental scientists: what, whether, why, and how*. Conservation Biology, 2009. **23**(5): p. 1090-1101.
9. Ruggiero, L.F., *Scientific independence and credibility in sociopolitical processes*. Journal of Wildlife Management, 2010. **74**(6): p. 1179-1182.
10. Kotcher, J.E., et al., *Does engagement in advocacy hurt the credibility of scientists? Results from a randomized national survey experiment*. Environmental Communication, 2017. **11**(3): p. 415-429.
11. Kirkpatrick, D.L., *Seven keys to unlock the four levels of evaluation*. Performance Improvement, 2006. **45**(7): p. 5-8.
12. Merriam, S.B., *THE CASE STUDY IN EDUCATIONAL RESEARCH: A REVIEW OF SELECTED LITERATURE*. The Journal of Educational Thought (JET), 1985. **19**(3): p. 204-217.
13. Brokaw, J.J., et al., *How the distinctive cultures of osteopathic and allopathic medical schools affect the careers, perceptions, and institutional efforts of their anatomy faculties: A qualitative case study of two schools*. Anatomical Sciences Education, 2016. **9**(3): p. 255-264.

## **BUDGET AND JUSTIFICATION**

### **Alda Center Workshop Fees**

The Alan Alda Center for Communicating Science at Stony Brook University will provide two days of training in the use of applied improvisational theater to SCBC workshop participants. This program, which is internationally renowned, will be offered to AAA at a discounted rate of \$20,000 because the PIs are Alda Center workshop alumni and Indiana University is an affiliate of the Alda Center. This training will be provided by four Alda Center faculty, for which funding is requested for roundtrip airfare from Long Island MacArthur airport to Indianapolis (\$525/ea), and lodging in Indianapolis (3 nights/ea at \$200/night). **Total funding requested for Alda Center workshop and faculty airfare/lodging = \$24,500.**

### **Room Reservations, Audio/Visual Rental, Food Service – Fairbanks Hall at IU School of Medicine**

Fairbanks Hall at Indiana University School of Medicine charges no fees to faculty or the dean's office for reserving the space. One of the PIs (Hoffmann-Longtin) is an assistant dean and will be able to secure space free of charge provided that we reserve the facilities far enough ahead of time. The only expense associated with the facility will be to pay for the time of an audio/visual technician - \$150/day for 3 days. Fairbanks Hall does not require the use of university catering to provide food, and instead allows catering from any food service provider. We expect to feed approximately 50 people each day, between participants, instructors, and various guests/assistants. Our previous experience with food service providers in the Indianapolis area suggests that we can provide excellent continental breakfast service for \$10/person (\$500/day for 3 days), lunch buffet service for \$15/person (\$750/day for 3 days), and coffee throughout the day for \$5/person (\$250/day for 3 days). Additionally, we have budgeted \$250 to purchase snacks to be available throughout the workshop. **Total funding requested for facilities, audio/visual, and food service = \$5,200.**

### **Guest Speaker Travel**

Funds are requested to pay for roundtrip air travel from Washington, DC, to Indianapolis, IN (\$500 airfare), and lodging (2 nights at \$200/night) for Jennifer Zeitzer from the FASEB Legislative Relations office (or another person from her office) to lead the advocacy workshop on Day 3 of SCBC. Additionally, funds are requested to pay a \$200 stipend to three members of the local/regional media for the media panel on Day 3 of SCBC. **Total funding requested for guest speaker travel = \$1,500.**

### **SCBC Informational Logo and Website Design, Online Registration Functionality**

Funding is requested to pay the Indiana University Visual Media office to design a SCBC logo and website to handle online registration for the workshop. In this process, we will consult with members of the Anatomy Education Research Institute Innovations Grant team about the process they undertook in the design of their website and registration form, and their experience with Visual Media. **Total funding requested for SCBC logo and website design, and online registration functionality = \$1,000.**

### **Graduate Student/Early Career Anatomist SCBC Scholarships**

As part of the application process for the SCBC workshop, participants will be asked to write a short statement on the importance of science communication and why they want to be trained in skills to enhance communication. From those essays, we will select two individuals (a graduate student and an untenured early career anatomist) to receive full scholarships to the SCBC. This scholarship will cover roundtrip airfare to Indianapolis (\$500/person) and lodging (4 nights/person at \$200/night) near the IU School of Medicine campus. **Total funding requested for SCBC scholarships = \$2,600.**

### **Hill Day Participation**

Funding is requested to send the 2 graduate student/early career anatomists SCBC scholarship winners and the PIs to participate in the FASEB Capitol Hill Day in Spring 2020 in order to utilize the training received at the SCBC workshop. Roundtrip airfare (\$500/person) to Washington, DC, and one night hotel accommodations (\$300/person) are budgeted for this. **Total funding requested for FASEB Capitol Hill Day participation = \$3,200.**

### **Miscellaneous Supplies**

Funding is requested to pay for workshop supplies, including name badges, information packets, photocopying, markers, notepads, large poster paper. Funding is also requested to pay for AAA- and SCBC-

branded reusable bags and/or t-shirts. This promotional swag will help raise visibility of the SCBC workshop and provide advertisement for AAA. We estimate that this will cost no more than \$40/person for all miscellaneous supplies and promotional swag. **Total funding requested for miscellaneous supplies = \$2,000.**

**Continuing Education Workshops at the Alda Center for PIs**

In order to sustain SCBC past the inaugural workshop, funding is requested to send the PIs for additional continuing education training at the Alda Center at Stony Brook University. This additional training will culminate in certification of the PIs to deliver workshops based on the Alda Method of communicating science. This will enable the PIs to deliver Alda Center-certified training at a fraction of the cost to AAA. In future years of the SCBC, training will be provided by the PIs and others they have officially trained in Indianapolis and from among the AAA membership. To this end, funding is requested for continuing education training (\$2500/person), roundtrip airfare from Indianapolis to Long Island MacArthur airport (\$500/person), and 8 nights stay at the Hilton Garden Inn on the Stony Brook University campus (\$250/night for 8 nights/person). **Total funding requested for continuing education at the Alda Center = \$10,000.**

**TOTAL DIRECT COSTS: \$50,000 (No Indirect Costs Allowed)**

## BIOGRAPHICAL SKETCHES

### Biographical Sketch Jason M. Organ

#### Professional Preparation

|                          |                                    |              |
|--------------------------|------------------------------------|--------------|
| University of Missouri   | Anthropology                       | AB, 1999     |
| University of Missouri   | Anthropology                       | MA, 2002     |
| Johns Hopkins University | Functional Anatomy & Evolution     | PhD, 2008    |
| Johns Hopkins University | Physical Medicine & Rehabilitation | Postdoctoral |

#### Appointments

|                |   |
|----------------|---|
| 2012 – present | <b>Assistant Professor</b> , Department of Anatomy and Cell Biology, Indiana University School of Medicine (IUSM)   |
| 2016 – present | <b>Adjunct Assistant Professor</b> , Department of Biomedical Engineering, Indiana University – Purdue University Indianapolis (IUPUI)                          |
| 2017 – present | <b>Adjunct Assistant Professor</b> , Department of Anthropology, Indiana University – Purdue University Indianapolis (IUPUI)                                    |
| 2010 – 2013    | <b>Research Collaborator</b> , Division of Mammals, Smithsonian Institution, National Museum of Natural History   |
| 2008 – 2012    | <b>Assistant Professor</b> , Center for Anatomical Science and Education, Department of Surgery, Saint Louis University School of Medicine                      |
| 2007 – 2008    | <b>Postdoctoral Research Fellow</b> , Department of Physical Medicine and Rehabilitation, Johns Hopkins University School of Medicine/Kennedy Krieger Institute |

#### Products

##### 5 most closely related to proposed project:

- Rupert JE, Joll JE, Elkhait W, **Organ JM**. In press. Mouse hind limb skeletal muscle functional adaptation in a simulated fine branch arboreal habitat. Accepted to *Anat Rec* on 7/14/2017.
- Krege JB, Aref MW, McNerny E, Wallace JM, **Organ JM**, Allen MR. 2016. Reference point indentation is insufficient for detecting alterations in traditional mechanical properties of bone under common experimental conditions. *Bone* 87:97-101.
- Rupert JE, Rose JA, **Organ JM**, Butcher MT. 2015. Forelimb muscle architecture and myosin isoform composition in the groundhog (*Marmota monax*). *J Exp Biol* 218:194-205.
- Organ JM**, Teaford MF, Taylor AB. 2009. Functional correlates of fiber architecture of the lateral caudal musculature in prehensile and nonprehensile tails of the Platyrrhini (Primates) and Procyonidae (Carnivora). *Anat Rec* 292:827-841.
- Organ JM**, Ruff CB, Teaford MF, Nisbett RA. 2006. Do mandibular cross-sectional properties and dental microwear give similar dietary signals? *Am J Phys Anthropol* 130:501-507.

##### 5 other significant products:

- Sato AY, Richardson D, Cregor M, Davis HM, Au ED, McAndrews K, Zimmers TA, **Organ JM**, Peacock M, Plotkin LI, Bellido T. 2017. Glucocorticoids induce bone and muscle atrophy by tissue-specific mechanisms upstream of E3 ubiquitin ligases. *Endocrinology* 58:664-677.
- Organ JM**, Srisuwananukorn A, Price P, Joll JE, Biro KC, Rupert JE, Chen NX, Avin KG, Moe SM, Allen MR. 2016. Reduced skeletal muscle function is associated with decreased fiber cross-sectional area in the Cyl/+ rat model of progressive kidney disease. *Nephrol Dial Transplant* 31:223-230.
- Allen MR, McNerny EMB, **Organ JM**, Wallace JM. 2015. True gold or pyrite: a review of reference point indentation for assessing bone mechanical properties *in vivo*. *J Bone Miner Res* 30:1539-1550.
- Organ JM**. 2010. Structure and function of platyrrhine caudal vertebrae. *Anat Rec* 293:730-745.
- Organ JM**, Ward CV. 2006. Contours of the hominoid lateral tibial condyle with implications for *Australopithecus*. *J Hum Evol* 51:113-127.

**NAME:** Hoffmann-Longtin, Krista

**POSITION TITLE:** Assistant Dean for Faculty Affairs and Professional Development, IU School of Medicine; Assistant Professor of Communication Studies, IU School of Liberal Arts at IUPUI

## EDUCATION/TRAINING

| Institution and Location   | Degree                 | Completion | Field of Study                             |
|--|------------------------|------------|--|
| Ball State University, Muncie, IN  | BA                     | 12/1998    | Telecommunications                         |
| Purdue University Calumet, Hammond, IN                                   | MA                     | 05/2002    | Communication and Creative Arts            |
| Indiana University, Bloomington, IN                                      | PhD                    | 12/2014    | Education                                  |
| Alda Center for Communicating Science Train-the-Trainer, Stony Brook, NY | Completion Certificate | 6/2014     | Science Communication (non-credit bearing) |

## A. Positions and Honors

|           |  |
|-----------|--|
| 2002-2006 | Lecturer, IUPUI Department of Communication Studies<br>Special appointments: Civic Engagement Coordinator, Course Director, Lead Advisor |
| 2006-2010 | Associate Director, IUPUI Solution Center (Office of Community Engagement)   |
| 2006-2014 | Associate (Adjunct) Faculty, IUPUI Department of Communication Studies   |
| 2006-2014 | Associate (Adjunct) Faculty, IUPUI Women's Studies Program   |
| 2010-2014 | Program and Evaluation Director, IU School of Medicine Faculty Affairs and Prof. Dev.  |
| 2015-     | Assistant Dean, IU School of Medicine Faculty Affairs & Prof. Dev. (.5 FTE)  |
| 2015-     | Assistant Professor, IUPUI Department of Communication Studies (.5 FTE)  |
| 2017-     | Co-Editor, PLOS Science Communication Blog   |

## B. Relevant Publications and Grants

### Publications

- Rossing, J. P. & Hoffmann-Longtin, K. (2016). Improv(ing) the academy: Applied improvisation as a strategy for educational development. *To Improve the Academy*, 35(2), 303–325. doi:10.1002/tia2.20044
- Palmer, M., Hoffmann-Longtin, K., Walvoord, E., Bogdewic, S. P., & Dankoski, M. E. (2015). A competency-based approach to recruiting, developing, and giving feedback to department chairs. *Academic Medicine*, 90(4), 425–430.
- Hoffmann-Longtin, K., Palmer, M.M., Walvoord, E.C., & Dankoski, M.E. (2014). Just Ask: Using faculty input to inform communication strategies. *To Improve the Academy*, 34(1), 37-56.
- Palmer, M.M., Shaker, G. G., & Hoffmann-Longtin, K. (2014). Despite faculty skepticism: Success of a graduate-level seminar in a hybrid course environment. *College Teaching*, 62(3), 100-106. doi: 10.1080/87567555.2014.912608
- Dankoski, M., Palmer, M., Banks, J., Brutkiewicz, R., Walvoord, E., Hoffmann-Longtin, K., Bogdewic, S., et al. (2012). Academic writing: Supporting faculty in a critical competency for success. *The Journal of Faculty Development*, 26(2), 47-54.

### Grants

- Weinstein, E., & Hoffmann-Longtin, K. (co-PI). (2016). Improv(ing) resident communication: An innovative curriculum. IU School of Medicine Department of Pediatrics. \$50,000.  
\*Support to implement a day-long communication curriculum using applied improvisation techniques on the community advocacy rotation for pediatric residents
- Hoffmann-Longtin, K. (PI), Organ, J., & Wininger, M. (2016). Developing a graduate minor in Science Communication. IUPUI Center for Teaching and Learning. \$30,000.  
\*Support to develop a minor in science communication for graduate students in the health professions, sciences, and technology
- Palmer, M.M. (co-P.I.), Dankoski, M.E. (co-PI), Hoffmann-Longtin, K., & Bogdewic, S. P. (2011). Josiah Macy, Jr. Foundation Presidential Grant, Advancing Faculty Vitality in the Health Professions. \$35,000.