Small World Initiative Partner Instructor Application – College/University

Section 1: Program Information & Overview

Note: Please note that you may return to this application to complete or change responses until you click submit.

Deadline: Applications are accepted on a rolling basis. However, if you would like to be considered for the summer training, please submit your application as soon as possible. The next training will be held in June/July at the University of Connecticut in Storrs, Connecticut. If you are located in the UK, Spain, or Ireland, please do not fill out this application and contact us here as there is a separate application process.

WHAT IS THE SMALL WORLD INITIATIVE?

Formulated at Yale University and piloted in 2012, the Small World Initiative (SWI) is an innovative program that encourages students to pursue careers in science while addressing a worldwide health threat – the diminishing supply of effective antibiotics. It centers around an introductory biology course in which students conduct original research on soil samples in the hunt for antibiotic candidates. Over the past four years, SWI has grown rapidly to include 150 participating schools across 35 US states, Puerto Rico, and 12 countries. During the 2015-2016 academic year, SWI was officially piloted at its first high school. We are currently working to expand SWI's impact and reach on a global scale and complete the missing links to allow SWI's discoveries to move forward into R&D programs.

Two Problems – STEM Deficit & Antimicrobial Resistance

First, there is a growing economic need for more STEM (Science, Technology, Engineering, and Math) graduates. In the US alone, it is estimated that an additional one million STEM graduates are needed to join the workforce over the next decade to meet economic demands. Yet, the number of students pursuing STEM degrees has been decreasing, especially among women and minorities.

Second, there is growing worldwide consensus that antibiotic resistance is one of the most pressing medical challenges of the 21st century. Without serious action, by 2050 the cost of antimicrobial resistance is estimated to be $100 trillion and 300 million premature deaths. The loss of efficacy in existing antibiotics due to widespread antibiotic resistance is compounded by the increasing lack of investment in new antibiotic development by pharmaceutical companies.

Our Solution

SWI is an innovative program that inspires students in science and increases retention through immersion in hands-on laboratory and field research with real-world applications in introductory courses. As part of SWI, students isolate soil bacteria from their local environment in the search for novel antibiotics. This is particularly relevant since over two thirds of antibiotics originate from soil bacteria or fungi. Differentiating itself from traditional courses, SWI's biology course provides original research opportunities rather than relying on cookbook experiments with predetermined results. SWI's approach also provides a platform to crowdsource antibiotic discovery by tapping into the intellectual power of many people concurrently addressing a global challenge and advances promising candidates into the drug development pipeline. This unique class approach harnesses the power of active learning to achieve both educational and scientific goals.

Current School Outreach

To date, over 8,000 students have taken SWI's introductory biology course. This year, the total number of participating schools has grown to 150 across 12 countries with SWI partners hosting training workshops in the US and abroad.

Our Impact

- 2012 – Yale University Pilot
- 2013-2014 – 30 Colleges in the US
- 2014-2015, 60 Colleges in 5 Countries
- 2015-2016, 108 Schools in 9 Countries, including official US High School Pilot Program
- 2016-2017, 150 Schools in 12 Countries

Projected Next Steps

- Growing the college program nationally and internationally
- Developing a pipeline of opportunities for students and Partner Instructors, including a summer program and follow-on courses
- Enhancing program components for crowdsourcing antibiotics
- Establishing a high throughput screening and educational laboratory
- Reporting on our educational and scientific impact
- Completing the development of our cloud-based relational database

For more information on the Small World Initiative, please visit: www.smallworldinitiative.org, follow us on Twitter @Team_SWI, or like us on Facebook.

WHAT ARE THE BENEFITS THAT THE SMALL WORLD INITIATIVE PROVIDES?

Acceptance into the Small World Initiative provides numerous benefits to Partner Instructors and their students.

Instructional Materials

- Regularly updated instructional materials that maintain a standard of excellence for teaching SWI's introductory biology course. This includes our Instructor Guidebook and Instructional Materials, Student Guide, and Research Protocols.

Training

- In-person weeklong training workshop for approved Partner Instructors with qualified trainers and engaging content

Advice and Assistance

- Access to experts to answer questions surrounding implementation
- Answers to FAQs

Student Opportunities

- Continuously expanding pipeline of opportunities for students to present research, attend conferences and events, publish, receive recognition, be mentored, and apply for internships, fellowships, and jobs

Partner Instructor Opportunities

- Continuously expanding pipeline of opportunities for Partner Instructor to publish, speak, lead, and collaborate with other Partner Instructors
- Participation in a large and dynamic community of professionals all teaching a cutting-edge course and working jointly on antibiotic development
- Awards and recognition of star Partner Instructors
- Mentoring for incoming Partner Instructors (Mentor Program)

Introductory Course to Increase STEM Majors & Impact Underrepresented Talent Pools

- SWI's introductory biology course is based on peer-reviewed research demonstrating that this model is more successful at encouraging students to pursue STEM majors (NSF, AAAS, PCAST). Further, it is particularly impactful on women and minorities, talent pools that are underrepresented in STEM fields. Evaluation results from 2013-2014, analyzed by an external evaluator at the LEAD Center at the University of Wisconsin-Madison's Center for Education Research, have been extremely positive. In March 2016, the Journal of Microbiology & Biology Education published an article that supported our educational impact and found that our program improved students' lecture grades and critical thinking skills test scores.

Online Tools

¬ Use of an online database that allows students to input research data
¬ Curated website (smallworldinitiative.org), blog, Facebook groups and pages, YouTube Channel, Twitter, LinkedIN

Evaluation Tools
¬ Gold star instruments are provided to measure SWI's impact on students and to capture science outputs
¬ Publishing opportunities for Partner Instructors on innovative teaching
¬ Assistance with Institutional Review Board

Negotiated Pricing, DIRTT Lab, & Throughput
¬ Internal and negotiated pricing for access to Yale's DNA Sequencing Lab
¬ Negotiated arrangements for reduced pricing for certain laboratory equipment, materials, and testing (This may only be available in some countries.)
¬ Development of a throughput and educational laboratory are in the works, which will allow Partner Instructors to send flagged samples for additional testing.

Marketing/PR
¬ Membership in an innovative global effort to combat one of the world's most pressing health challenges and participation in pipeline to discover new antibiotics
¬ Participating schools are featured on website.

Structure
¬ Governing structure
¬ Opportunities for Partner Instructors to participate on and lead SWI Committees (e.g., Science, Publishing

What are the Roles and Responsibility of Being a SWI Partner Instructor?
Partner Instructors must agree to teach SWI's introductory biology course safely and with quality in one of the following models:
¬ Introductory cell and molecular biology
¬ Introductory lab for biology majors
¬ Introductory microbiology lab
¬ Introductory lab for non-science majors

Partner Instructors must also actively participate in the SWI community. This includes supporting SWI's overall goals and efforts and contributing requested materials, including class reporting, science outputs (optional), samples (optional), and student evaluations (optional). Participation on SWI Committees is thoroughly encouraged.

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Section 2: Contact Information

1. Applicant Information

First Name:

Last Name:

Title:

Department:

Email Address:

Phone Number:

2. School Information

School Name:

Address 1:

Address 2:

City/Town:

State/Province:

ZIP/Postal Code:

Country:

* 3. Type of Institution (Check all that apply)

- [ ] Public
- [ ] Private
- [ ] Research university with high research activity (based on Carnegie Classification)
- [ ] Research university with very high research activity (based on Carnegie Classification)
- [ ] Community college
- [ ] Liberal Arts
- [ ] International
- [ ] All-girls
- [ ] All-boys
- [ ] Coed

Other (please specify)

* 4. How did you hear about the Small World Initiative?

* 5. Why do you want to join the Small World Initiative?

* 6. Please describe your availability over the summer for a weeklong in-person training. (June-July)

Section 3: Educational Background and Expertise

* 7. Please describe your relevant educational background, degrees, and experience, which you think demonstrates your ability to effectively teach this course.

Relevant teaching and scientific experience may include:

- Experience in a research laboratory and working with environmental samples
- Relevant teaching experience and any relevant courses
- Relevant publications
- Relevant research experience
- Relevant conferences and capacity involved

[In lieu of writing out your responses, if you prefer, you may copy/paste a copy of your latest CV. If your CV is longer than 2 pages, please only include the most relevant sections.]

8. Please provide a link to any relevant websites (e.g., your LinkedIN profile page).

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Section 4: Safety Standards Analysis

* 9. Do you have access to Biological Safety Level-1 or Biological Safety-2 facilities?

- ◯ BSL-1
- ◯ BSL-2
- ◯ No

* 10. Does your institution have a bio-safety officer?

- ◯ Yes
- ◯ No

If yes, please explain if you will meet with that person if accepted into the program on the optimal way to implement SWI.

* 11. Please describe any prior experiences that relate to your ability to execute this program with proper safety standards (e.g., any safety certifications or courses).

* 12. Do you commit to keeping up to date on and implementing any new safety protocols that SWI releases?

- ◯ Yes
- ◯ No

* 13. Please state any biosafety questions or concerns you have about teaching SWI.

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Section 5: Implementation Questions

* 14. Desired date of implementation

	Term	Year
Date:		

* 15. What are your goals for SWI at your institution? Please describe any learning goals and scientific goals.

* 16. Please list your personal goals for implementing this course and what you would consider as "successful."

* 17. In what course context or level do you want to teach SWI at your institution?

- ◯ Introductory Cell and Molecular Biology
- ◯ Introductory Microbiology Lab
- ◯ Introductory Lab for Biology majors
- ◯ Introductory Lab for Non-Science Majors

Other (please specify)

* 18. What year students would be able to enroll in the course? Check all that apply.

- ☐ College freshmen
- ☐ College sophomores
- ☐ All college students
- ☐ High school students

* 19. How would SWI fit into your current curriculum? Would it replace or be inserted into an existing course, or would it be a new addition to the curriculum?

* 20. How many in-class hours per week and sessions would the students meet?

	Hours	Sessions
Per week:		

* 21. Approximately how many students do you expect would enroll in your course?

* 22. Please describe how many times you would like to teach the course.

- ◯ Just trying it
- ◯ Maybe once
- ◯ Indefinitely

* 23. Please describe any hurdles that exist for implementing SWI at your institution (e.g., whether you have institutional support, biosafety lab rating certification, facilities, timeline to approve new course, etc.) or any concerns that you have for implementing SWI.

* 24. Would other instructors at your institution assist with implementing SWI? If you already know who would be assisting you, please list their names and email addresses and describe their level of assistance.

* 25. It currently costs SWI $15,000 annually to include each college in its program. This covers everything from training and material development to evaluation and program staff. Would your institution be able to assist with offsetting some of these costs? Please explain.

Section 6: Commitment and Tracking

We are currently collecting and reviewing data on SWI's effectiveness. We would like to collect additional data that compares SWI to a traditional course as a control group.

* 26. Are you willing to administer student evaluations (pre- and post-course surveys) and contribute data? (This may involve getting approval from your Institutional Review Board.)

- ◯ Yes
- ◯ No
- ◯ Maybe

* 27. Will you be able to compare SWI against a traditional course? If so, please describe a potential comparison course that might serve as a control group at your institution. Are the student populations comparable?

* 28. Longitudinal Tracking – Are there mechanisms in place for tracking students? For example, does your institution have an office of institutional research that can assist you in collecting data about your students?

- ◯ Yes
- ◯ No

Please explain.

* 29. Would you be willing to collect data on science outputs?

- ◯ Yes
- ◯ No

* 30. What role do you hope to fill in the larger SWI community? How do your goals for your class contribute to the SWI community (e.g., contributing to research or pedagogy, crowdsourcing medical breakthroughs, creating scientific protocols, mentoring others, etc.).

* 31. Are you interested in participating in any of the following? Check all that apply.

- [ ] Publishing
- [ ] Speaking (presenting SWI at conferences and events)
- [ ] Mentoring
- [ ] Committee Leadership
- [ ] Fundraising
- [ ] Grant Writing

Other (please specify)

* 32. The SWI community works in Committees to better fulfill our larger goals. If accepted as a Partner Instructor, please indicate which Committees you might be interested in joining. Please select all that apply:

- [ ] Science Committee
- [ ] Publishing Committee
- [ ] Symposium Committee
- [ ] Partner Instructor Training Committee
- [ ] Recognition and Opportunities Committee
- [ ] Mentor Committee
- [ ] Social Media/PR Committee
- [ ] Instructional Materials Committee

* 33. Please include any additional questions or concerns.

Section:7 Terms of Use and Disclaimer

For safety, liability, and quality control purposes and to strengthen SWI's community, an applicant must be both approved for and complete official training in order to teach the Small World Initiative (SWI) and become a Partner Instructor. Only with express written consent from SWI's President or Program Director may the official training requirement be waived, in which case an applicant would be matched with a "buddy" mentor instructor.

Applicants who are approved for training but do not complete such training are not permitted to teach SWI and are not Partner Instructors. Any unauthorized teaching of SWI or use of SWI Instructor Materials, Student Materials, or the Small World Initiative trademark is strictly prohibited. Anyone who uses SWI's materials, teaches SWI, or trains others in violation of SWI's policies and procedures is fully and personally responsible and liable for such unauthorized use and any consequences that may result.

Partner Instructors may supervise and train colleagues employed at the same institution to teach SWI, provided SWI receives advance notice and such notice includes the colleague's name and contact information. Such Partner Instructor is responsible for supervising colleagues and leading SWI at such institution. Partner Instructors may not train anyone who is not employed at the same institution to teach SWI without express written authorization from SWI's President or Program Director. Notwithstanding the foregoing, this permission to supervise and train colleagues may be revoked by SWI at any time at SWI's sole discretion.

Partner Instructors must treat as confidential and may not share Instructional Materials or SWI passwords with any party, including other Partner Instructors, without prior written consent from SWI's President or Program Director.

Section 8: Agreement and Signature

34. I understand that I may not teach the Small World Initiative before becoming a SWI Partner Instructor. This requires completing the official approved training or receiving express written consent from SWI's President or Program Director that such training requirement is waived. I assert that I have the support of my institution (e.g., department chair/head) if accepted to the program.

I assert that all of the information that I have provided is correct and accurate to the best of my knowledge.

If I am accepted into the program, I agree to:

	Agree
Read all communications and strive for excellence in terms of safety and quality when teaching SWI	○
Meet with the relevant biosafety officer at my institution if such person exists to discuss how to implement SWI in the optimal way	○
Inform SWI of the names and email addresses of any other instructors assisting with implementation at my institution as well as take responsibility for overseeing SWI at my institution	○
Collect and provide SWI with requested data, including but not limited to data that SWI collects on the courses (e.g., number of students, type of course, etc.), science outputs data, any evaluation data	○

	Agree
Provide SWI timely notification if I take a job at a new institution and keep SWI informed of my new contact information	○
Not share SWI materials or passwords with anyone (One current exception: Student materials may be shared with your own SWI students.)	○
Not train other instructors to teach SWI without receiving prior written authorization	○
Join SWI's crowdsourcing effort and provide requested samples	○
Participate in the SWI community	○
Have my email address shared with other SWI Partner Instructors	○

* 35. Electronic Signature (type your full name)

* 36. Date

	MM	DD	YYYY
Date	/	/	

* 37. Location