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science education

Mini-Med School Planning Guide

What is Mini-Med School

Mini-Med Schools are public education programs now offered by more than 70 medical schools, universities, research institutions, and hospitals across the nation. There are even Mini-Med Schools in Ireland, Malta, and Canada! The program is typically a lecture series that meets once a week and provides "mini-med students" information on some of the same subjects studied by "real" medical students. Mini-Med School students do not need a science background to attend. Some mini-med schools augment the lectures with laboratory tours, hands-on demonstrations, videos, and more.

*Mini-Med School is not affiliated with or sponsored by MiniMed Inc.

What Makes Mini-Med School a Mini-Med School?

Sponsors of mini-med schools are often asked, "What's the difference between a mini-med school and a lecture series on diseases and health issues?" The criteria shared by most mini-med schools - including NIH's are:

- The curriculum includes basic science and/or broad biomedical subject areas, e.g., heart disease, not mitral valve prolapse
- Each lecture builds on the ones before
- People are expected to attend each week.

J. John Cohen: Father of Mini-Med School

A little over 10 years ago, the chancellor of the University of Colorado (CU) in Denver convened a meeting of distinguished professors to invite them to serve as a kind of informal advisory council. "By some accident, I wound up being invited," says J. John Cohen, M.D., Ph.D., a wiry, energetic man with an easy smile and a fondness for cartoon-character neckties. By then, Dr. Cohen, a lively, imaginative researcher and award-winning teacher, had been teaching immunology and medicine at CU for almost 20 years.

The chancellor's advisory council met periodically, and the early discussions were stimulating and wide-ranging, says Cohen. But one meeting stands out -- when the chancellor raised a concern about the relationship between the CU medical school and the surrounding community. He worried that the public didn't really understand or appreciate what the medical school was about. At the end of the discussion that followed, the chancellor asked Dr. Cohen to come up with a way to show people what the CU medical school does. With that charge and his own inspiration and wisdom, Dr. Cohen created and developed the concept of the mini-med school.

The first CU mini-med school was announced on a Monday, and by the end of the following day, 1200 people had called to register. Within a year of its first meeting, articles about the first mini-med school appeared in three national publications: the *New York Times*, *Family Circle*, and the *Journal of NIH Research*. The mini-med school idea started to take hold in medical schools across the country.

When asked to explain the popularity of mini-med schools, Dr. Cohen suggest that because of managed care and cost-cutting, most people don't have a chance to talk with their own doctors as much as they'd like. Many of his clinical friends see 30 patients a day, he says, which means they barely have time to say hello to their patients. It's no wonder, then, that people appreciate being able to spend hours and hours with doctors at a mini-med school.

Dr. Cohen's interest in science and medicine began early. "To the extent I grew up at all, its was in Montreal," says Dr. Cohen. He was always a science nut, he says, and started doing

experiments in his parents' basement at about age six. "They wouldn't buy me a chemistry set, so I borrowed my sister's chemistry book and got chemicals from the household. I learned a new way to t make hydrogen gas, made some, and blew it all up."

At the age of 11, Dr. Cohen got a job at a hospital near his home, counting radioiodine for a physician-scientist, Dr. Martin Hoffman. He was a world-class teacher and Dr. Cohen's main role model. "At medical school, I forced them to let me do all my training with him," he says.

Dr. Cohen enjoys fencing and rowing, and he's "a fairly awful road-bike racers with a club of guys" in Denver. "The 70-to-80-year-olds let me tag along as long as I can keep up with them," he says. His literature passion is James Joyce -- he's belonged to *Finnegan's Wake* discussion group for years -- and he's "way info" chaos theory. The best thing in his life, he says, is his daughter Zoe, now a graduate student. "I love to travel, with Zoe if she can get away. My ambition is to get to Samarkand."

Meanwhile, Dr. Cohen pursues his research and teachers. "Once I got brave enough to actually look at people while I was teachers, I discovered the thrill that comes when you see the 'lights come on.' That's what has me addicted to teaching." As for learning how to teach, Dr. Cohen gives credit to Dr. RickiAnn Saylor, "a superb expert in education, " he says. "The learning process is so complicated, it makes immunology look easy," he goes on to say. "There is so much we don't know about how people learn! So for me, every class is an experiment, and I'm learning new things all the time."

How Do I Start a Mini-Med School?

Consider the Need

People have a genuine interest in science, particularly medicine. This is why Bruce Fuchs, director of the Office of Science Education at the National Institutes of Health, started Mini-Med Schools at the Medical College of Virginia (MCV) and NIH—as well as on Capitol Hill, at Ballou Senior High School, and at Barney Neighborhood House in Washington, D.C. Mini-Med Schools provide a place for interested laypeople and scientists to meet. The setting is intimate, and this helps break down barriers. The programs are engaging, informative, and fun; participants learn not only about biomedical topics but also about what scientists do and how science works. Mini-Med School sponsors become a more vital part of their communities. Scientists learn how to reach out to the public and why doing so is valuable and important.

Get Started

Starting a Mini-Med School from scratch can be as exhilarating as it is daunting. It can be made more exhilarating and less daunting if you break the job into discrete steps:

- Articulate your goals for the program
- Create a program overview
- Estimate costs and find funding
- Decide when to the hold the school
- Find the right location
- Choose lecturers and topics
- Choose a host
- Decide how to run the question-and-answer period
- Develop handouts
- Decide how to enroll and register students
- Consider staffing needs and accessibility issues
- Develop an advertising and marketing plan
- Develop a way to evaluate the program

It's a good idea to work up a rough timeline for completing those steps. Many experienced Mini-Med School administrators start preparing about nine months before the first lecture. It might take a few months longer to start one from scratch (see Countdown to Mini-Med School: A Timeline on this page.)

Mini-med school organizers have said repeatedly how helpful it is to model their schools after successful programs. What follows are descriptions of how Dr. Fuchs and his colleagues at MCV and the NIH took those steps.

Countdown to Mini-Med School: A Timeline

If you're starting a mini-med school from scratch, it'll take you a few months longer to get the first series organized than it will later on. Here are some timely guidelines to consider as you start sketching out your plan. Please note that it starts at T minus six months with *finalizing*things. (Adapted from the University of Pittsburgh's project timeline.)

Six Months Ahead

- Finalize proposed curriculum and speaker choices
- Obtain appropriate institutional approvals and support, including approval by medical school chancellor and dean, or other appropriate administrators
- Finalize proposed budget
- Confirm availability of desired facilities and staff

Five Months Ahead

- Recruit speakers
- Finalize schedule
- Finalize invitation list

Four to Three Months Ahead

- Plan and implement the public relations program, including: media plan, internal publicity, and external publicity
- Finalize logistics of registration

Two Months Ahead

- Print and mail mini-med school application forms
- Develop an evaluation form

One Month Ahead

- Confirm registrations
- Send registrants directions and parking information
- Begin preparing audiovisuals for first and subsequent sessions

Month of Start

- Do "dress rehearsal" for fist session (about two weeks before first class)
- Hold opening session of mini-med school

Articulate Your Goals

Dr. Fuchs has had two main goals in mind for the Mini-Med Schools he's started. First, he wanted to establish a lecture series for adults who don't necessarily have connections with the basic biomedical sciences. Through the lectures, people could begin exploring the importance and joys of science. Second, he wanted to generate within the scientific community a new perspective—that of treating the public as a "partner" in the scientific enterprise and keeping that partner fully informed.

Goal One: Create a Lecture Series for Adults Who Don't Have Easy Access to Basic Biomedical Sciences

Through the lectures, the NIH Mini-Med School tries to help participants:

- Understand the terms and concepts basic to the biomedical sciences. People who aren't familiar with the vocabulary of modern medicine, or are minimally competent in understanding its philosophical constructs, can't participate effectively as consumers in the health-care system. According to one well documented account, two-thirds of American adults don't understand biomedical news stories. Students in mini-med school programs should gain enough knowledge to read and comprehend a typical news story about medical research.

- Understand the process of science. The ability to accurately distinguish science from pseudoscience requires an understanding of how science is done. Students learn that hypotheses must be changed in response to new data.
- Understand the impact of biomedical research on society. This era is one in which spectacular progress has been made in biomedical research. The mini-med schools convey some of the history of biomedical research so that students can appreciate this remarkable progress. Students learn how much effort went into achieving these research advances.

Goal Two: Create a Program That Promotes the Partnership Between Scientists and the Public

Establishing communication between scientists and the public is not simple, but it is crucial. When interactions between scientists and the public are well executed, *everyone* has a good time—and further contact is easier. The response from students in mini-med school programs has been overwhelmingly positive. Scientists have enjoyed the experience, and many of them are eager to teach again. Others who hear about the mini-med school want to participate. Most lecturers have been genuinely surprised by the size and interest of their audiences.

Create a Program Overview

You'll need to start thinking about the general format of your proposed Mini-Med School. How often will it meet, for how long, and when? Will weekday evenings for two hours work best? Or will several longer meetings on Saturdays be better in your community? Do you imagine a lecture series with some tours of your facilities? Hands-on laboratories? Small-group discussions?Who's your audience? And you'll need to start honing in on the content. Some schools choose to have two speakers lecture at each meeting—one on the basic science behind a topic, the other on a clinical aspect.

The MCV Mini-Med School began in 1992 and has run each fall and spring ever since. It meets on 8 to 10 consecutive Wednesday evenings from 7 to 9 p.m. The final evening is reserved for a tour of MCV's labs. The NIH Mini-Med School, which has run four times since 1994, consists of

two-hour meetings on 10 consecutive Thursday evenings.

At both schools, one or two areas of medicine are addressed at each session, and one or two speakers give lectures. Each lecture provides an overview of the subject in language free of jargon. There's *always* time for questions from the audience. When the questioning slows, people adjourn to the lobby for refreshments (if funds permit). The students and speakers can then meet and talk informally.

At NIH, Dr. Fuchs serves as host each week. He introduces the speakers and moderates the questionand-answer period. At MCV, in the early years of the program, two graduate students served as cohosts. Mini-Med School students are sometimes reluctant to approach speakers with questions, but they usually feel comfortable talking to a host. When that happens at NIH, Dr. Fuchs sometimes says, "That's a great question. Let's go ask Dr. "X."

On the last night of the Mini-Med School at NIH, a "graduation" ceremony is held after the lecture, followed by a cookies-and-punch reception. Dr. Fuchs usually wears a cap and gown, delivers a mini-commencement address, and oversees the distribution of certificates to the tune of "Pomp and Circumstance." Students who have attended a certain number of the sessions (usually six or seven) are awarded certificates. People seem to enjoy being recognized for their participation. Mini-Med School T-shirts are given to speakers as a gesture of thanks, and to some students as door prizes.

Estimate Costs and Find Funding

The cost of running the MCV Mini-Med School is similar to that of other mini-med schools. Costs are flexible, depending on how sophisticated the program is. You can cut costs by choosing not to have refreshments or by serving coffee and tea instead of cookies and sodas. Handouts, fliers, and folders are also optional. You may be able to obtain free advertising and free use of facilities, and volunteers can help with registration and mailings.

Admission Fees

Some Mini-Med School don't charge a fee. Those that don't generally think that even a nominal fee would not recoup most of the expenses but could be an impediment for some who would otherwise attend. One theory behind charging an admission fee (besides recovering some of your expenses) is that paying for classes can create a psychological commitment to returning each week. The organizers of the Indiana University School of Medicine Mini-Medical School in Indianapolis have done it both ways and found that charging a fee led to better attendance.

Local Community (Industry, Government, University)

If funding is limited or not available, good places to look for financial support include affiliated hospitals, drug and biotechnology companies, private foundations and associations, such as your chapter of the American Heart Association, and even your city council. Most mini-med schools are affiliated with (and often held at) a local hospital or learning institution, which typically pays for most of the expenses.

Pfizer Educational Grants

Pfizer has developed a grant program called Discovering Medical Science to promote the creation or enhancement of mini-med school programs. Grants of $10,000 are made to selected medical schools to cover costs of the course.

Various sponsors will look for different things from the mini-med school. Some will simply wish to provide a public service, perhaps related to their health-oriented mission. Others will want increased visibility in the community, and it's possible to reap a tremendous public relations benefit for them relatively inexpensively. The community will better appreciate what the company or institution is doing and will credit it with an interest in community service and promoting

goodwill. At MCV, Dr. Fuchs had heard that a new company in Richmond, Whitby Pharmaceuticals, was looking for a way to get involved in the community. He talked to representatives of the company, which eventually became a sponsor of the Mini-Med School.

Decide When to Hold Your Mini-Med School

The MCV Mini-Med School is offered twice a year, once in the spring and once in the fall. The NIH program is offered only in the spring because there's another program for lay audiences, Medicine for the Public, on campus each fall. That program focuses on specific diseases, and sessions don't build on previous sessions, as they do in the Mini-Med School.

Wednesday became Mini-Med School night at MCV after Dr. Fuchs spoke with someone who'd had experience organizing public events downtown in the evenings. The public events coordinator at the Valentine Museum in downtown Richmond says that Monday night is a poor choice because people are just getting back to their work schedules and don't feel like doing anything extra. Friday is typically taken up with other social obligations. At the museum, Thursday has traditionally been a bad night; administrators suspect that poor attendance at Thursday-night events is linked to the popularity of certain television shows. That left Tuesdays and Wednesdays as "good" nights. Host Fuchs likes to watch "NOVA" on PBS on Tuesday nights, so Wednesdays it was!

Talk with people in your community who run evening programs. They might have a feel for which are "good" and "bad" nights for attracting people in your area. It's best to avoid any potentially major conflicts, including local sporting events.

Find the Right Location

Consider several factors when you choose a location. Most important is to find a classroom with a good teaching environment. At NIH, even though more than 1,000 people were interested in attending the Mini-Med School, Dr. Fuchs opted against using the largest auditorium available at the time. Instead, lectures were held in a 250-seat amphitheater. People in the back row are much closer to the speaker than they are in a traditional auditorium, which creates a friendly environment.

Choose a place that has ample parking available and is also easily accessible by public transportation. Reserve the room for at least one hour ahead of class time. It's usually ideal to hold the mini-med school at your institution, but at MCV, Dr. Fuchs chose not to have the Mini-Med School on campus because some view the neighborhood as unsafe. Mini-Med students did get a guided tour of the campus on the last night because they hadn't held any classes there. For the first few years at NIH, classes were held in the Clinical Center, in the heart of the campus. Now, they're in a new facility with a seating capacity of 550. This has allowed higher attendance and less frustration for people on the waiting list, but Dr. Fuchs believes that this has come at the cost of the intimate atmosphere provided by the old auditorium. If you hold your lectures at a medical school, the experience is enhanced if your students can sit in the same chairs used by the real medical students.

NIH has avoided using closed-circuit TV for its Mini-Med School because one of the real selling points of the program is the live speaker and the chance for students to ask questions. If relegated to a TV-only image, Dr. Fuchs believes that the mini-med school will not compete favorably with well-produced science shows such as "NOVA."

Mini-Med School Aren't Just for Med Schools

Although most Mini-Med Schools are developed and sponsored by medical schools, many other types of institutions have jumped into the fray. Some Mini-Med Schools, like the one sponsored by the NIH, are run by government agencies. Others are held in hospitals and high schools, with outside sponsorship, and still others, in private research institutes.

Another variation on the original mini-med idea is "taking the show on the road." In the fall of 1995, with support from the Association of American Medical Colleges (AAMC), Dr. Fuchs started the NIH Mini-Med School on Capitol Hill in Washington, D.C., for congressional staff members. One of the biggest challenges of these programs is figuring out the best time to meet. For the Capitol Hill program, late afternoon, 4 to 6 p.m., turned out to be the best compromise.

In the springs of 1996 and 1997, with AAMC and community collaboration, Dr. Fuchs adapted the program for two predominantly African-American communities in Washington, D.C. Mini-Med Schools can be supported by communities with few resources as well as by large institutions with fairly large budgets.

Choose Lecturers and Topics

This is the most important—and can be the most difficult—task. You must select speakers who are willing to translate what they do into a lecture the general public will understand. Speakers can't walk in and lecture from the same set of slides they use for their medical school presentations. "If they do, their lectures will bomb!" says Dr. Fuchs.

Some scientists and professors, even if they're great medical and graduate school teachers, simply cannot speak to the general public. Some resent having to simplify their subject area. Others may try diligently to do this but fail. One candidate speaker said that his area of expertise was "just too hard" to explain to a lay audience. If you hear that, thank him for his time and find someone else to do the lecture. Lecturers who are intrigued with the idea of the mini-med school will take the time to prepare an appropriate talk. If you have to twist a speaker's arm, that person is likely to be ineffective.

Find people who love to teach. Audiences aren't impressed by where the speakers went to school, how many papers they've published, or how much grant money they have. If you don't know suitable lecturers for a given topic, ask medical or graduate students at your university or one nearby for the names of outstanding professors. Ask department chairs for recommendations. Pay attention to names that pop up more than once. Try to sit in on a lecture (a public lecture would, of course, be best) to get a sense of the person's teaching style.

Mini-Med School lectures are part theater. Find speakers with flair. Find people who are excited by what they do and are able to transmit that passion. For example, one speaker on substance-abuse medicine at MCV talked for two hours and kept the crowd spellbound. People swarmed around him asking questions after the lecture.

Speakers should make the lecture fun. Slides and other visuals are essential for maintaining audience interest. It's a good idea to encourage speakers to use videos, hands-on activities, audience participation, or almost anything else that adds variety to the session. Just be sure you have the audiovisual support your speakers need.

Should you choose topics or speakers first? It's usually best to start out with a general idea of what topics you want to cover. Dr. Fuchs has yet to find a topic in medicine that's a dud—if you find the right speaker. Some topics, such as microbiology and genetics, should be covered if at all possible. But, if you can't find a good speaker for a particular topic, don't include it in the curriculum for the time being. And if you know of really dynamic speakers who are great at talking to the public about science, by all means, do whatever you can to include a lecture on their topic of choice, as long as it fits in somehow with the curriculum!

Choose a Host

Finding the right host is also important—and usually easier than lining up good speakers. The host sets the tone for the program and becomes the familiar face that welcomes the students at each lecture. People who bring the Mini-Med School idea to their institutions are often the logical choice for this job. They know a lot about the program, so they can field almost any question about it that comes their way. But more than that, they're enthusiastic about it.

The host usually introduces the speakers and, more importantly, weaves together each week's topic so the students begin to see how the lectures are interrelated. He or she moderates the question-and-answer period and needs to be knowledgeable about science and medical research. The host needs to be gracious and personable. Having a good sense of humor helps, too. It's amazing how forgiving and patient your students can be about a nagging audiovisual problem right in the middle of a lecture if they know you're trying and respond with humor instead of anger.

Arranging for a prominent member of the medical community—either local or from out of town—to give welcoming remarks at the first mini-med school meeting can be a great way to launch a new program.

Decide How to Run the Question-and-Answer Period

The question-and-answer period is often the most stimulating part of a Mini-Med School evening—for the students as well as the speakers! It's important to think carefully about your facility before you decide on the best way to orchestrate this segment. At the NIH, where lectures are held in a huge auditorium with sophisticated audiovisual support, two people circulate with wireless microphones and try to choose a wide range of questioners from all over the room. In other settings, asking students to write questions on index cards that are then collected and screened by the host or medical student volunteers works best.

Develop Handouts

At most Mini-Med Schools, students receive a course schedule either before the program begins or at the first class. At the beginning of the first class at NIH and MCV, students pick up at the registration table a paragraph introduction to each topic and biographical information about each speaker. They usually receive a glossary of terms for that evening's lecture topic, particularly for the more difficult, technical subjects. Speakers are encouraged to prepare outlines of their talks to handout, too.

Students also receive supplemental handouts on each topic, such as a booklet on cancer from the National Cancer Institute. Students sometimes ask for materials in advance so they can read about the subject ahead of time. This is great if you can do it. The drawback is that students sometimes lose or forget to bring their materials. Another impediment is getting your faculty to produce their outline far enough in advance. You can obtain good supplemental materials (which are often free) from NIH, the Centers for Disease Control and Prevention, the American Cancer Society, and similar organizations. Students have requested reading lists; you may want your speakers to develop such lists and provide their e-mail addresses for follow-up questions.

Enroll and Register Students

Many adults who are unfamiliar with Mini-Med Schools are amazed when they hear that the students are.mostly their peers. (They expect them all to be teenagers or college students who are considering medical school.) MCV and NIH students have ranged in age from 12 to 84; the typical student is a 40-something college graduate who has an interest in learning more about medicine and health. Teachers, computer programmers, engineers, truck drivers, and lawyers and judges have attended, and this appears to be the experience of other programs across the country. It's important to preregister students. Six mini-med schools that Dr. Fuchs studied as he was setting up the MCV program found that more people wanted to enroll than there were seats available. By preregistering, people understand that they are committing to attend the whole course. Since most sessions build on each other from week to week—they're not freestanding "disease-of-the-week" lectures—it's better for the students to attend every lecture.

There's always an onslaught of telephone calls in response to the NIH and MCV Mini-Med School advertisements. Regular phone lines haven't been adequate for handling registration. At MCV, an answering service is used that has a detailed script for collecting the necessary information

(name, address, day-time telephone number) and answering routine questions. The service faxes to MCV a list of enrollees each day. At the NIH, a separate phone line with voice mail was set up. Callers follow instructions for enrolling directly on the voice-mail system, and the mail box is emptied each day. The downside of this system is that occasionally people leave garbled messages, making it impossible to contact them for clarification.

Of the 1,300 people interested in registering for the NIH Mini-Med School the first year, the first 300 applicants received a letter inviting them to attend. The names of the remaining people were placed on a waiting list. The NIH Mini-Med School programs are typically overbooked by 15 percent, which may seem like a lot, but it hasn't failed yet. People change their minds, things come up, and not everyone who registers shows up. In addition, nine weeks is a major time commitment for anyone. Don't be discouraged if you lose people. The NIH has had as much as 40 percent attrition in its Mini-Med School classes.

At the NIH, all students receive an admission ticket—that includes a map—in advance. It's printed on card stock and lists topics, dates, and times. This serves as a reminder for the students. They're asked to sign in at each class to make them feel they have enrolled in a continuing course and to help Dr. Fuchs collect enrollment statistics. (Students who attend six or seven classes receive Mini-Med School "diplomas" on the last night.) There's a separate registration table at each class for "walk-ins," people who didn't preregister, or people who did so too late but want to attend. Just before the class begins, those people are allowed to fill empty seats on a first-come, first-served basis. Walk-ins must go through this process each week to get a seat.

Some Mini-Med Schools offer continuing education units (CEUs), nationally recognized measures of participation in professional development activities that don't carry graduate or undergraduate credit. For example, in Richmond, the first Mini-Med School was heavily marketed to science teachers. They wanted credit for the course because, among other things, it helps them maintain certification. Most universities have a continuing education office, which can provide the rules for setting up CEUs. Generally, attendance for 10 hours at the mini-med school is the only requirement for a credit.

Consider Staffing Needs and Accessibility Issues

Your staffing needs will depend very much on the scope of your program and the workload of your existing staff. At the NIH Mini-Med School, which is held in the spring, one staff person starts in January working about half-time for five months preparing for and then helping to run the program. She takes care of inviting the speakers, reserving the meeting rooms, gathering handouts, ordering T-shirts and posters, putting together speaker biographies, and preregistering students.

For the big mailings and folder-stuffing required to prepare for the first class at NIH, two additional assistants are needed for about a week. If you decide to have students sign in at each lecture, you'll need to have one registrar on-site for every 100 Mini-Med School students registered. It helps to have one additional person there to handle any extra problems that may come up. You may need to arrange for an audiovisual person and security personnel to be present, depending on where and when you hold your mini-med school.

You'll also need to consider accessibility issues, such as wheelchair access and interpretation for the deaf. At NIH, lectures are simultaneously translated into American Sign Language, and earphones are available for attendees who wish to listen to amplified versions of the lectures.

<u>Divvying Up the Tasks</u>

Many Mini-Med Schools are run jointly by two departments within a medical school: a basic sciences department and a community relations department. If you're planning to share responsibilities this way, you might want to consider the breakdown of tasks that worked well a few years ago at the University of Illinois College of Medicine at Peoria. In this case, the Dean's

Office also participated by providing funding for the newspaper advertisement and for some of the mailing costs.

Basic Science Responsibilities

- Secure speakers for presentations
- Develop and send a letter to Illinois District 150 teachers and other community leaders
- Contact government officials
- Design and print the syllabus
- Print copies of handouts for classes
- Provide personnel for each class night
- Track attendance of participants
- Set up commencement or graduation
- Obtain class photos and mail them to each participant
- Develop and compile evaluations of the program
- Set up organizational meetings
- Other?

Community Relations Responsibilities

- Develop and ad for the *Journal Star*, a local newspaper
- Design and print a brochure (including a registration form)
- Place the ad with the *Journal Star*
- Answer phone calls and send brochures to those interested (130 phone calls), including explaining the mini-med school and answering questions, which usually requires three to five minutes per call
- Enter registration data into a database file
- Design, print, and send confirmation postcards to participants
- Deposit registration money into the appropriate account
- Investigate the process for obtaining education credits for science teachers
- Prepare information packets for the first class
- Track all expenditures, including printing and catering
- Arrange for publicity, including taking pictures, sending our news releases, and contacting the media to cover events
- Plan and follow through on these aspects of graduation: food, seating arrangements, class pictures, and design and printing of graduation certificates
- Develop and maintain a waiting list for the next session

Dean's Office Responsibilities

- Pay for newspaper ad
- Pay for mailing costs

Advertise and Market

The NIH and MCV Mini-Med School "ad campaigns" have had two goals. First, readers should get the idea that they'll be exposed to substantive scientific information. The ads emphasize that the program mimics an actual medical school curriculum and that participants will have a "med-student" experience. (One anatomy lecturer commented that medical students have 300 hours of anatomy lectures, so every 12 seconds of his mini-med school lecture corresponded to a one-hour lecture in a medical school curriculum.)

Second, the ads convey to prospective students that the program will be fun, perhaps the most fun they've had in a while. It's important for audiences to realize they'll be entertained as they're

learning.

Newspapers are generally the best places to advertise mini-med schools (although this may be prohibitively expensive in some areas). Most people who attend the mini-med schools at MCV or NIH say they read about the program in the paper. It's a good idea to find all the free advertising you can. Try for a news story in your local newspaper and interviews on local talk radio shows. Radio spots are a good idea, too. You can also print brochures describing the lectures and mail them to science teachers and other target audiences. Posters and banners are effective in local libraries and community centers and along busy routes near your meeting place.

Plan to Evaluate the Program

You're likely to get a lot of feedback from the students, but it's always a good idea to collect written evaluations, even simple one-page questionnaires handed out on the last day of class or at each class. Be sure to have enough people on hand to collect evaluations and encourage people to fill them out. You might want to consider offering a small reward (such as a pen with your school's name on it) to people who turn them in.

The NIH Office of Science Education (OSE) hired an independent evaluator (for about $10,000) to conduct a formal evaluation after the first NIH Mini-Med School. The evaluation revealed which lectures the students found interesting, boring, exciting, useful, informative, confusing, too technical, and easiest to follow. For example, students rated the pharmacology and biochemistry talks as boring and confusing; the immunology, microbiology, and cancer lectures were rated the most interesting. The evaluation separated the perceptions of "scientist" from "nonscientist" attendees, males from females, and people younger than 40 from those over 40. Participants in a randomly selected focus group said they would prefer a course that lasted 12 weeks instead of 9 to 10 weeks and had three-hour rather than two-hour lectures.

Evaluations can help you assess how the program is doing, whether speakers are talking at the right comprehension level, whether students find speakers interesting, what topics attendees especially like, and whether the length of the program is acceptable. They can tell you who's in the audience (more women than men—at NIH, 70% women), how much education they have (9% at NIH reported a high school education or less, while 11% held Ph.D.s), what their occupations are (76% are employed), how old they are (the average age of the women is 39 years and of the men, 46 years), and where they live.

Finally, you can find out how the Mini-Med School students heard about the program, which is key for future marketing. For example, nearly all the people who attended the first Mini-Med School at NIH heard about it from an advertisement in the Washington Post's weekly health supplement. Some 1,300 people called in response to the ad. It took three Mini-Med School sessions before everyone on the first list had been given the opportunity to participate. People hear about the program from friends and relatives, through newspaper articles, and by attending OSE's summer film festival, Science in the Cinema.

To assess whether people are actually learning the material that's presented or are using it somehow in their own lives—to better understand science in the news or scientific research, for example, and its impact on their own or others' health, or to help make a career decision—requires a more sophisticated approach. For example, Ohio State uses a Health Locus of Control approach to determine whether mini-med students feel more empowered to control their own health after they've taken the course than before.

Review Advice from Other Mini-Med Schools

<u>Planning</u>

- "Plan *far* in advance."—Jay H. Menna, University of Arkansas for Medical Sciences, Little Rock

- "Start small, poll the audience about what they want to hear, and stay in touch with the audience's desires."—Eugene G. Maurakis, MCV Mini-Medical School at the Science Museum of Virginia, Richmond

- "Plan ahead, start early, and make presenters practice their presentations."—Beth Baucom, Wake Forest University, Winston-Salem, North Carolina

- "Plan carefully and assess the needs of your community. You need to set clear goals and provide a significant amount of information."—Amparo C. Villablanca, University of California at Davis

- "Plan in advance with input from the target group, and consider using an advisory committee. Such a committee can help with content and with enhancing community participation."—Gaylen Bradley, Penn State College of Medicine, Hershey; and Tony Mazzaschi, Association of American Medical Colleges

- "Ask presenters for their handouts at least one month prior to the beginning of the series. PowerPoint presentations were very well received. The head count for refreshments should be less than half thenumber of participants. Use volunteers. They alleviate the wear and tear on organizers and staff." —Marie Desautels, Berkshire Area Health Education Center, Pittsfield, Massachusetts

- Invite the media to attend and participate."—Chris Dudley, University of Miami, Miami, Florida

Models

- "Find out how others are running successful schools. Target specific population groups, and tailor the program to their interests.""—Arline Phillips-Han, University of Florida, Gainesville

- "Get the NIH Mini-Med School Manual, find funding for the program, set up a good infrastructure within the medical school, contact other medical schools with the program and ask them for advice, try out new ideas, and listen to the mini-med school students for suggestions."—Greg Schmieder, Southern Illinois University, Springfield

- "Learn as much as possible from other program directors; tailor your program to suit the needs of your target populations."—Jacob Jay Lindenthal, UMDNJ– New Jersey Medical School, Newark

- *"*Do it! Call someone who has done it."—Paula Gregory, Ohio State University, Columbus

Speakers

- "Research your speakers and make your students feel special."—Terrie Simmons, University of Arizona Health Sciences Center, Phoenix

- "Getting good speakers is the key."—Katie Riley, University of Arizona Health Sciences Center, Tucson

- *"*Try to persuade speakers to use simple and few slides and provide handouts, and select the best, most dynamic speakers and build the topics around their expertise, rather than picking the topics first."—Anne DeLotto Baier, University of South Florida College of Medicine, Tampa

- *"*One approach that hasn't worked that well is using older faculty "stars" as mini-med speakers. They tend to be bored with this concept, and it shows." —Anonymous

- "Tell speakers this: Know your audience. Don't talk down to them, but, rather, respect the bright people who come to the course."—James D. Kenney, Yale University, New Haven, Connecticut

- "Teach what you're not an expert in. Anything I can remember about anatomy is probably worth knowing about! Ask medical students who their best teachers are."—J. John Cohen, Immunologist, University of Colorado, Denver

Administrative and Fundraising Support

- "Hire a person to deal with enrollment. Don't try to do it yourself on top of your regular duties."—Sharon Parmet, University of Chicago Pritzker School of Medicine

- "There needs to be a small, dedicated staff to take administrative charge, arrange for typing, be there for the lectures, as well as a physician course director to deal with recruiting physicians and to be at many of the lectures."—Stephen A. Liroff, Henry Ford Hospital, Detroit

- "Be sure the dean is behind you 100%—including funding—and that a faculty committee serves as the mini-med school's base."—Pamela Su Perry, Indiana University, Indianapolis

- "Get the support of your organization's leader because it will demonstrate to potential speakers, who inevitably are very busy people, the importance of the program to the institution. Require some type of preview of each lecture to ensure the speakers are presenting material at the right comprehension level, and expect the unexpected when it comes to audience questions. Have on hand as many additional experts as possible so the speaker can defer to them, if necessary."—Katherine S. Zdeb, Wadsworth Center–New York State Department of Health, Albany

- "Approach local volunteer organizations, such as faculty spouse volunteers, for financial and administrative support."—University of Florida, Gainesville

Final Words

- "Find entertaining faculty, relate the curriculum to current health-care topics, and advertise."—Casey Norton, Albany Medical Center, New York

- "Keep your sense of humor."—Susan Phillips, Mount Sinai School of Medicine, New York City

- "Go to locations where you can capture people in their daily life paths. It's very difficult to get good attendance when you're asking people to add another trip, appointment, or location to their schedule, especially in rural areas."—Linda Austin, Medical University of South Carolina, Charleston

- "Limit your program to six sessions, broken up into two 45-minute segments; have interesting, entertaining speakers who can talk at a layperson's level; and limit refreshments to fruit, cookies, and coffee and soft drinks."—Teresa Heinz, University of Tennessee, Medical Center at Knoxville

- "Research other mini-med school programs and work with your best-known service coordinators for good results."—Janet Ramon, University of Texas Health Science Center at San Antonio

- "Start slowly, and make the first one excellent."—Jeffrey L. Osborne, Medical College of Wisconsin, Milwaukee

Graduation Celebrations

Most Mini-Med School students enjoy celebrating their successful completion of the course. About two-thirds of Mini-Med Schools have some sort of graduation ceremony, which almost always includes the awarding of certificates and a reception with refreshments. Some are more elaborate than others, with processionals and recessionals, "Pomp and Circumstance," a graduation speech (usually very short!), a song, and a class photo. The mini-med school host often gives the graduation speech, and some schools have their university president or medical school dean speak as well.

Requirements almost always involve one thing: attendance at a certain proportion of the classes (two-thirds or three-quarters, usually), with special recognition -- such as a T-shirt -- for those students with perfect attendance.

At the NIH Mini-Med School, the graduation ceremony ends with a performance by Francis Collins, director of the National Human Genome Research Institute at NIH, of the song he wrote for the graduation of his "real" medical students.

Creative Mini-Med Ideas

Getting Started

Consider starting out with a pilot program if you or others are unsure about whether there's a large enough audience to support a full-fledged mini-med school in your community. One school did this on a spring Saturday afternoon of lectures and labs.—*Wright State University, Dayton, Ohio*

Enhancing Lectures

- Distribute copies of slides before lectures begin. This way, students don't have to worry about taking notes. They can simply annotate the handouts.—*National Institutes of Health, Bethesda, Maryland*

- Add a "Top 10 Medical News Stories" of the week feature to your lectures series. Dr. Robert Richman does this with stories he's found on the Internet at the State University of New York Upstate Medical University, Syracuse. He summarizes them in a brief, printed outline, with web sites when helpful, that's passed out to students each week, and he talks about the Top 10 briefly right after the break between lectures.—*State University of New York, Syracuse*

- Videotape the lectures so they can be transmitted live to overflow rooms near the auditorium and viewed later by students who were absent.—*National Institutes of Health, Bethesda, Maryland*

- Collaborate with volunteers from local branches of health-related associations in your community. Staff members from one Mini-Med School program work with local American Heart Association (AHA) volunteers in developing the cardiology lecture, and AHA

volunteers bring handouts and other information to the students the evening of the cardiology lecture.—*Ohio State University, Columbus*

- Develop cooperative relationships with other schools and universities in your area. This can broaden the speaker base and topic opportunities.—*Indiana University at Terre Haute*

- Involve medical students in demonstrations and labs, which are very popular with mini-med students but can also be logistically difficult.—*University of Texas Southwestern Medical Center, Dallas*

- Post reading lists on the Internet so students can prepare for lectures from there.—*University of Pittsburgh*

- Urge speakers to provide their e-mail addresses for follow-up questions.—*Association of American Medical Colleges*

- Include a space for a personal note about the program on the evaluation form. These can be shown to donors and others interested in the program.—*Sharp HealthCare Foundation, San Diego*

- Offer simultaneous translation into Spanish and serve a light supper before the lecture to encourage more people to attend.—*UMDNJ-New Jersey Medical School, Newark*

Enhancing the Q & A Session

- Hand out blank index cards for students to jot their questions on. At the end of the lecture, collect the cards. The host can then screen them (for legibility and redundancy) before passing them along to the speaker. This approach can be very helpful in programs with large audiences, where shy people may be reluctant to ask questions in person.—*University of Arkansas for Medical Sciences, Little Rock*

- Invite medical students to run the question-and-answer period at the end of each lecture. At Berkshire AHEC in Massachusetts, each speaker is responsible for bringing the med students.—*Berkshire Area Health Education Center, Pittsfield, Massachusetts*

Extending Mini-Med School

- Create a mini-college program! The father of the mini-med school, J. John Cohen, has done this in Colorado, as part of the University of Colorado's (CU) Total Learning Environment initiative. The Mini College is a special series of free weekly lectures, seminars, and workshops conducted by CU professors and sponsored and hosted by communities around the state. The first one, called Tune Your Mind, was held in Aspen in spring 1999 and attracted 160 to 200 students each night. Participants explored the question, How do we know what we know?—*University of Colorado, Denver*

- Create a Mini-Med School alumni association like the State University of New York at Buffalo. Members pay an annual fee that entitles them to many benefits, including discounts on mini-med school registration, a pass to the medical school's library, and a subscription to Buffalo's magazine for physicians.—*State University of New York, Buffalo*

- Start a mini-vet school! At the suggestion of representatives of the Western New York Veterinary Medicine Society, the mini-med school at the State University of New York at Buffalo has done just that. It has hosted two five-session programs of veterinary

medicine. Veterinarians specializing in animal oncology, ophthalmology, dentistry, internal medicine, orthopedics, and dermatology lecture to captivated audiences.*State University of New York, Buffalo*

- Create a mini-med school for kids, seniors, or women. This can be done on a small scale, even just as an exhibit as part of a larger local community event. It's possible to reach many people this way. It's best not to require attendance, especially of high school students.—*University of Illinois at Rockford and Association of American Medical Colleges*

- Broadcast courses via satellite to other parts of the state. Although this tends to be pretty expensive, it does allow you to reach people in remote areas.—*University of Nebraska, Omaha; University of Colorado, Denver; and others*

- Design a course for people in legal professions who deal with medical aspects of legal issues.—*State University of New York, Buffalo*

- Other health screenings on mini-med school evenings.—*University of South Florida College of Medicine, Tampa; University of Maryland Biotechnology Institute, Baltimore, and others.*