By 1951, those who had promoted Challenge had succeeded in branding the film (and the package of which it was a part) a success. The Fight had been nominated for an Academy Award, Challenge had won film competitions in Venice and New York, and Lester Grant’s The Challenge of Cancer had won a prestigious book design award on top of the prize for the original series of newspaper articles. Given such outside recognition, critics of the project within the sponsoring agencies were silenced, at least for a while.

But so too were many of the main promoters of film and its package. Johnson’s consultancy with the NCI had ended in 1950, leaving the film in the hands of her successor in the Cancer Reports Section, Hugh Jackson. Jackson was in turn succeeded in 1951 by James F. Kieley, a former journalist and newscaster who worked previously as an information officer for several government agencies.1 Jackson, and perhaps his successor, were eager to overcome the disquiet Johnson had created among information officers at the NIH and the FSA. Lt. Col. Gilchrist left the DNHW in 1954, so that his minister, Paul Martin, with whom he did not have an easy relationship, was free to appoint a successor more attuned to his ideas.2 These departures meant that none of the main advocates of the film were left in the sponsoring agencies. With the ructions of 1950/51 behind them, those left in the NCI and the DNHW were happy to take credit for whatever good came from the package, and they also ensured its storage and distribution. But no one was there to advocate for it, and the enthusiasm soon diminished. Other projects took its place, and by the 1960s the package was rarely mentioned.

Such a fate within the sponsoring organizations was not uncommon. As people left, priorities changed, or the political winds shifted. Projects that had once absorbed time, money, and attention could be abandoned or neglected. In these circumstances, all the work that went into them—the countless meetings and visits, the form-filling, the telephone calls and letters, the politics and administrative bother—could be forgotten, buried under the weight of new priorities, projects, and agendas. The concerns that had prompted the film—about a shortfall of recruits to cancer research—did not disappear overnight, but they diminished somewhat in the 1950s, so that their urgency also diminished. Challenge and its package were put on a backburner, and the burner eventually went out.
The gradual disappearance of Challenge was caused in part by the budget process. In both organizations, budgets had to be submitted each fiscal year, with some projects carrying over to a new year and others left without a budget line or included among others in a general budget line, such as for the distribution of educational materials. This was the case for Challenge and its package. The initial Canadian and American funding for the film meant that it had its own budget lines, but the budget covered only the production and early promotion of the package. After that, both organizations buried Challenge and its package in the general budget for the storage, promotion, and distribution of educational materials, one package among many, and an increasingly small part. The budget was enough to ensure that the stock of films and books were stored properly and distributed to those who requested it but provided little beyond that, aside from special monies for the 1955 supplement to Grant’s book.

While stocks remained, and demand continued, the film and its package continued to receive support from the general budgets for distribution and storage, including the supply of free loan copies of Challenge by the NCI. But it was a tiny sum. There was little for publicity after the rush of 1950/1951, except that parts of the package continued to be listed in the reports and catalogs of the two agencies for several years. The package now had to compete for attention with newer educational materials and newer projects. The records do not make clear when the film and package stopped receiving funding, but it probably began to fade in the 1960s.

The NFB did not experience the sorts of controversies around the film that had at times engulfed the sponsoring agencies. It is true that the filmmakers harbored certain concerns about critics’ responses to the film, most notably pessimism from Glover about the how the British would react, but also concerns about reactions to the French versions and general anxieties that the film might be too technical for some audiences. But such qualms were nothing compared to the internal fights in the NCI and NIH, and they were soon swept away in the euphoria over the prizes and nominations for prizes that the films received. These provided a powerful validation of the work of the filmmakers, attracted positive attention from those higher up the NFB hierarchy, and ensured that a warm glow settled over the films in the memories of those involved in them. In later years, Glover, Low, and others would mention Challenge as among the best of the NFB films of the period.³

For the NFB, Challenge also came to be a harbinger of future triumphs. Many of those who made the film went on to important roles in film and the arts. Low was to be a key figure in documentary filmmaking and animation and an
important contributor to the development of the IMAX technique of widescreen cinematography. His co-animator Evelyn Lambart became one of McLaren’s closest collaborators as well as having a distinguished animation career of her own. The Oscar-winning composer Louis Applebaum was to become one of Canada’s leading modernist composers and music educators. He was the first music director of the internationally renowned Stratford Festival, an annual theater event in Stratford, Ontario, and in 1955 he established the Stratford Music Festival as a spin-off of the main festival. Guy Glover, Colin Low, and Morten Parker went on to work on other Oscar-nominated NFB shorts: Glover produced *The Romance of Transportation in Canada* (1952), which Low directed, and *The Stratford Adventure* (1954), which Parker directed, about Applebaum’s festival. Even the science adviser to the animators gained later prominence in 1968, albeit in more tragic circumstances. Bazilauskas was the first physician at Central Receiving Hospital in Los Angeles to see Robert F. Kennedy after he was shot. In more ways than one this was a movie that brought the worlds of film and medicine together.

Low himself saw *Challenge* as a beginning of his later involvement with the director Stanley Kubrick’s *2001: A Space Odyssey* (1968). He noted that Lambart’s use of a curved movement in the cell-as-universe sequences was an early example of the sort of curved movement that he would later use in another NFB Oscar-nominated film and Low’s second, *Universe* (1968), which prompted Kubrick to try to recruit Low to work on *2001*. “Plotting curved movement is very hard to do mathematically,” he noted, “Sine curves and three-axis movement get very complicated.” But there were also other techniques that filtered through to *Universe*. *Universe* created its animation with motorized movement, a further development of McLaren’s technique of overlapping zooms, which had employed motorized movement. There may also have been adaptations of Bazilauskas’ cinemotif technique, for the film created some of its portrayals of the cosmos by filling tanks of clear paint thinners with suspended inks and oil paints, filmed under bright lights and at a high film rate. Others have suggested that *Universe* anticipated the stargate sequence from *2001*. The stargate-like sequence in *Universe* presents an imaginary journey through a corridor of clouds to the edge of the solar system, an image that could be traced back to similar images in *Challenge* and perhaps to McLaren’s *C’est l’aviron*.

As the foregoing suggests, once *Challenge* and its companion films were released, those involved in them at the NFB moved on. The man who had started it all, Ralph Foster, left the NFB in 1949, the crew that Glover and Parker had assembled dispersed to other projects, and some left the NFB. The films remained
in the NFB catalog for many years, and *The Fight* and *Challenge* would occasionally be bought out among the polished silver for special screenings of NFB films. But after the 1950s, the films were not screened often, and increasingly rarely in the places where they had been intended to be screened: the classrooms (*Challenge/Alerte*), film theaters (*The Fight*) or in the film circuits where *Canada Carries On* series was shown (*The Outlaw Within* and *Cancer*). The NFB kept the film stock in its vaults, and in the late twentieth century some versions were made available for purchase as VHS tapes and later DVDs. Today it is possible to watch copies of some of the films for free on the NFB website (and the US National Library of Medicine website). But between the 1960s and their recent video, digital and online presence, the films were largely hidden from view, kept in some libraries but not widely available. By 1970s the films were rarely mentioned.  

Their brief runs were not atypical of educational movies, which were often screened only for a short while. Eventually audiences would tire of the films, newer ones would replace them, and copies of the original films would get damaged with use. Copies that survive in film collections show signs of such damage: the NLM’s copy is missing part of its leader, replaced with a piece of film stock from a US Army training film, and there are broken sprockets, scratches, and dust. In other libraries, copies were deaccessioned at some point, so that they were no longer available for screening, their fate unknown. Some may have ended up in private hands; others will have gone to the dump. Such is the fate of many educational movies and all the work that went into them.

**Recruitment and education**

Did *Challenge* achieve its recruitment goals? Concerns about recruitment to cancer research did diminish after its release, but it is almost impossible to disentangle the effect of the film on this change from that of the package of which it was a part, the broader recruitment efforts by the sponsoring agencies, the general shift in school science education toward sustaining the professional science community, or changes in the job market and economy. The film seems to have been widely used in the 1950s, but one film could not turn things around. Its sponsors would not have expected it to, and critics implicitly suggested that it was unlikely to help recruitment. Thus when, as noted in chapter 11, some commentators argued that the film failed to reach its intended audience of school and college science students, they also—obliquely—suggested that it was unlikely to serve the goal of attracting science students to the field of cancer. How
could it, when it failed even to reach the audience the sponsors hoped it would reach? Even those tasked with ensuring that it was used in the classroom seem to have had their doubts about the value of the film: as mentioned in chapter 12, the teachers who were asked to develop the teaching guide seemed unsure how to make use of the film, except as general inspiration.

The best that can be said is that the film may have contributed to some students becoming aware of cancer research as a career. But even this statement must be treated with caution. Virtually nothing has survived on how the film was used in classrooms (other than screenings in Bethesda–Chevy Chase High School, and Gary, Indiana), there seem to be no scientific memoirs that cite Challenge as an inspiration for a turn to cancer research, and it receives no mention in oral histories of scientists who entered cancer research in the 1950s and 1960s.

The film, however, tells us much about how sponsoring organizations perceived and responded to the problem of recruitment. Both sponsoring agencies made efforts to expand research facilities, establish training fellowships, cultivate career structures for cancer researchers, and reform how research grants were administered and how they could be used. The film and its package were only one small part of this broader effort, and a part that capitalized on and promoted the shift in science education toward sustaining professional scientific development. It also represented an accommodation between the Americans and Canadians, given that the latter were fearful that Canadian scientists were being tempted to better paid positions in the United States, which was undermining Canadian cancer research efforts.

The story of the film’s sponsorship also tells us something about the changing focus of public education about cancer. Since the early twentieth century, cancer education had sought to bring (adult) patients into programs of early detection and treatment. Beginning in the 1930s, the traditional focus of educational efforts for adults was supplemented with a focus on children, and the traditional stress on patient recruitment was joined with efforts to educate the public (children, students, and adults) about the biology of cancer, to recruit scientists into the field, and to ensure that expectations of cancer research were not unrealistic. To the extent that Canadian public education efforts regarding cancer were dependent on American materials, this shift also had an impact north of the international border. Still, educational efforts in both countries remained overwhelmingly focused on patient recruitment. Early detection and treatment continued to be the heart of cancer education, and adults remained the major audience.
The growing focus on research and on children and students gained additional impetus in the mid-to-late 1940s as planning for a huge increase in cancer research took off. But there was an additional concern that the huge media interest in cancer research might generate unwarranted expectations of research and put pressure on researchers to deliver a cure long before they were ready to do so. Public education efforts were increasingly aimed at countering such expectations. Although research remained subordinate to patient recruitment, it accounted for a growing part of American and Canadian cancer education materials and was increasingly included within materials that were primarily about early detection and treatment. Concerns that a focus on research might undermine efforts to promote early detection and treatment by highlighting the limitations of medical and scientific knowledge began to dissipate.

_Challenge_ and its package were part of this new emphasis in public education on research. For the Canadians, it was also part of an effort to distance public education efforts about cancer from their historical reliance on American educational materials. _Challenge_ marked an extraordinary turnaround. For the first time, the Americans were reliant on a Canadian educational effort.

Information offices and officers

_Challenge_ and its package also illuminate the role of a hitherto unacknowledged group in the well-known story of the dramatic expansion of cancer research in the 1940s and 1950s: information or public affairs officers. In the traditional story, the focus of attention has been on the activities of influential individuals such as the philanthropist Mary Lasker, on legislators and policymakers, and on scientists and scientific administrators involved in cancer and biomedicine. But these individuals tended to rely on information officers or public affairs specialists to generate support for the expansion. It is true that some of the effort to expand cancer research was carried out behind closed doors, in conversations between advocates and those with political influence or control of financial purse strings. Advocates of expansion, however, also wanted to generate public support for growing cancer research, to recruit young men and women into the field, and to counter media reports that might diminish faith in research. It was here that the information officers were so important, for it was they who would create the media campaigns to address these goals.

The significance of public affairs specialists to the story of postwar cancer research is highlighted by the organizations for which they worked. In the United
States, both the NCI and the NIH created information offices in the 1940s as part of their efforts to get the message out about the need for more cancer/biomedical researchers, to address the more general problem of managing the growing media interest in cancer and biomedicine, and to fulfill new mandates for public education after the war. The Canadian DNHW did not have to create a new office for this purpose, since its Information Services Division could trace a history back to 1919. But the division was not the organization that it had been at the beginning. It was reorganized after the Second World War to promote the health care reforms of the Mackenzie King (and from 1948 the Louis Stephen St. Laurent) government, and to manage its ever-changing policies on reform, including efforts to promote Canadian cancer services and research. The creation and reorganization of these various offices suggests a growing recognition by the American and Canadian agencies that managing public attitudes toward cancer and cancer research would involve expertise that the scientists, physicians, and administrators who ran these agencies did not have.

All these offices—together with those in campaign organizations such as the American and Canadian cancer societies—were to focus considerable attention on cultivating public support for research in the 1940s and 1950s, and Challenge was to be a key part of this story. It is true that the ACS declined the Canadian invitation to support the film, but it seems to have done so because it was already planning its own effort to encourage recruitment through the release of From One Cell (1950), together with other educational materials (see chapter 1). Thus, while Challenge might have been in competition with From One Cell for funding (and probably for school audiences), the two movies together represented an unprecedented use of film both to recruit science students into cancer research and to educate audiences about the biology of the disease. The NIH and the FSA seem to have come late to Challenge, and they might have had misgivings about the film and the way that its promotion was handled by Johnson. But they too were keen to recruit young scientists to biomedicine and to educate students about the biology of the cell. Their misgivings about Challenge did not distract from these goals.

What sorts of expertise were involved? These offices were populated by (or drew upon the skills of) specialists who are generally not mentioned in histories of cancer. Science writers, book designers, typographers, printers, graphic artists, photographers, and journalists—to say nothing of the filmmakers hired to make Challenge and its companion films. Many of these specialists portrayed themselves as the mouthpieces of the agencies that employed them. They brought to these agencies a range of ways of getting their messages out. But they often did
much more than echo the concerns of their agencies. These specialists had particular views on how best to communicate the messages of their employing agencies, what to emphasize and what to cut, and some—even especially the filmmakers, and perhaps book designers such as Ritchie—were involved only in a specific project and had no interest in their sponsors beyond it. Thus, the messages of these agencies were always shaped by information specialists, who wrote and rewrote them for different publics, chose the graphic and typographic designs, and decided how best to ensure that they got to their intended audience. It follows that the educational efforts of the NCI, the NIH, and the DNHW should never be portrayed as the unadorned messages of the scientists and physicians who staffed them.

The offices might have employed a diverse group of specialists, but they were all led by journalists and former journalists. Dallas Johnson had a background in journalism and consumer activism; Gilchrist was a former journalist, as were Hugh Jackson and Judson Hardy at NIH. The involvement of journalists or former journalists meant that information officers often came to their organizations with contacts in the media that they could exploit to get a story out or to counter ones that they wanted to challenge. And even when they did not have direct contacts themselves, they often knew enough people with enough contacts to make a connection. In addition, their general knowledge of how the press, radio, and television worked could be applied to the problem of marketing. As Johnson’s and Gilchrist’s efforts to promote *Challenge* indicate, such knowledge allowed them to tailor their promotional efforts to the demands of the different media, at least as they saw them. Finally, it might be noted that their experience in journalism may have given them something in common with staff members at the NFB who were involved in the film and were also journalists by training. They included Ralph Foster and Morten Parker, while others such as Arnold Schieman and Gordon Petty had worked as news/documentary cameramen earlier in their careers.10

Scientists and administrators could be suspicious of journalists, fearful that they heightened public anxieties about disease, raised unrealistic hopes, or simply got the science wrong. In their view, the role of information officers was to counter such tendencies in the media; they were to distinguish themselves from their colleagues in the newspapers, radio, or television, and also to compensate for the problems in the media, at least as scientists and administrators saw them. For such reasons, information officers were often keen to dissociate themselves from their journalistic background. Judson Hardy allegedly told his subordinates, “Don’t describe yourself as a reporter,”11 because an irate NIH
scientist had let all his colleagues know that he was embarrassingly misquoted in a newspaper article. Information officers thus cultivated images of themselves defined by their relations to the outside media, the public they sought to reach, and colleagues within the organizations that employed them.

Information officers might have been hired to deal with the growing media interest in cancer health and biomedicine after the war. They might also have been an essential part of the efforts by the American and Canadian health authorities to grow cancer research by tempting recruits into the field. Yet they were often in a vulnerable position within their organizations. At the NCI, Johnson’s anxieties over Challenge were partly a reflection of her concern that her Cancer Reports Section depended for its effectiveness on the approval of scientists and administrators within the NCI that it was struggling to achieve. Her pleading with Foster to pay attention to the scientists was a product in part of her concern that she had been unable to secure a central place for her section within the NCI. She worried that the NFB—which did not rely on such approval—would worsen the situation by ignoring scientific recommendations. Her political missteps over invitations to the premiere added to the problems. By that stage she had left the Cancer Reports Section, so it was her successor who had to deal with the fallout, this time not from scientists but from other information officers at the NIH and FSA who saw it as an opportunity to rein in the NCI office. All these information officers were constantly looking over their shoulders trying not to generate the ire of those upon whom they depended for support.

Less is known about the situation in the DNHW, except that Gilchrist did not always see eye to eye with his minister, Paul Martin. His Information Services Division had a longer history than the equivalents at NIH and NCI and was likely not subject to problems of the sort that faced the start-ups at the American agencies. But even Gilchrist had to step carefully. He could not—and probably did not want to—antagonize either his minister or the scientists in the Canadian Cancer Society or the National Cancer Institute of Canada. The Information Services Division had only recently been reorganized, and it was always possible that with the constant changes in government health policy it would be reorganized again. Challenge likely helped Gilchrist in his relations with his minister, given its high visibility and the international nature of the venture, which gave Martin an opportunity to promote his ideas and himself on an international stage. Gilchrist too had constantly to turn to Canadian scientists both to ensure scientific approval and to counter any possibility that the film might elicit a negative reaction from them.
For scientists in the various agencies, these information officers played several roles. They were to cultivate patient confidence in programs of early detection and treatment along the educational lines first established by the ASCC/ACS in the 1910s. They were also to cultivate support for research and to provide basic information on what was known about the biology of cancer and the major areas of research, much like the small group of science writers working in newspapers, radio, and television, which meant that information officers had to take on something of the role of a science writer. They were to inform the public about the latest developments in science, to explain their implications, and plead for patience in waiting for basic research, which promised results only in the long term. However, they were also to advance the agendas of the organizations for which they worked, the NCI, NIH, FSA, or Department of National Health and Welfare. This meant much more than simply informing the public about the latest science and its implications. It also meant protecting those organizations from the misconceptions of the media, much as former journalists such as Edward Bernays had sought to protect and promote business corporations through the then new field of public relations. Their role was to shape public opinion and to manufacture support for their organizations and their missions. The boundary between education and public relations could be thin. Challenge and its package served as both an educational and recruitment effort and a public relations effort that aimed to manage public expectations of science and what the sponsoring agencies could achieve.

Why film?

So why did they turn to film to tempt people into the field? It was a risky move given its expense and the long history of doubts about the medium. Surely a campaign using books, pamphlets, inspirational lectures, filmstrips, and a well-thought-out educational program in the schools would do the job, with less expense and less risk. Part of the answer is happenstance. Several elements had to fall into place: the enthusiasm for film as a tool of education among Canadian cancer experts; their desire to reverse years of dependence on American motion pictures; Gilchrist's need to promote his minister; Ralph Foster's hope of using the Canadian commission to rope in the Americans; the decision to show the 1948 Constant script to American cancer agencies; Johnson's struggle to figure out a campaign to recruit scientists, and her desire to establish her Cancer Reports Section at the heart of NCI educational and informational efforts. All these factors fed into the decisions to fund the film, ensured that doubts about
its cost and effectiveness could be sidelined, and that other arguments gained ascendency: notably that film had a power to transform beliefs and behaviors that other media did not. Thus the decision to commission *Challenge* was not a simple reflection of the enthusiasm vested in film, but the outcome of a broader struggle between such enthusiasm and concerns about costs and effectiveness that had to be fought out each time a film was commissioned.

Indeed, the story of *Challenge* is also about how such concerns did not disappear once the film was commissioned. Johnson, for example, worried that the film might turn into a liability, especially if the NFB ignored the advice of NCI scientists. We saw that in her letters to Foster outlining her concerns that the filmmakers might alienate scientists, and her efforts to recruit the MFI as a mediator between the filmmakers and the scientists. Gilchrist probably had similar concerns (though they are unrecorded), since the film offered him an opportunity to ensure that Paul Martin was a presence on an international stage, and any disquiet among scientists could have harmed such ambitions. Both Johnson and Gilchrist had to fight constantly against the threat that the film might pose to their ambitions, and against those within their respective agencies who continued to doubt the value of the film.

A further issue was that Johnson, Gilchrist, and other supporters believed that the film would not sell itself. It had to be packaged and promoted in particular ways if it was to do its job, and promotion was a seemingly never-ending task since the initial reactions to the film were not what its promoters wanted. Its eventual characterization as a success was likely because neither the Canadian or American agencies could stomach a flop, the embarrassment that this might cause with their international partners, and the unexpected boost of prizes and the nominations for prizes, including an Oscar. After that, the project could be allowed slowly to die, with a tiny part of the budget set aside for the storage and distribution of educational materials, until demand for it disappeared.

**Filmmakers**

For their part, the filmmakers do not seem to have had the sorts of anxieties that their sponsors had. Where the latter constantly worried about their dependence on filmmakers, the filmmakers expressed less concern about their dependence on the outside sponsors. Part of the reason was that the sponsorship of Canadian and American health agencies gave the NFB enormous resources, promised to open the door to future coproduction deals, and allowed the NFB to produce a film of a quality that would have been difficult with their own funding. In
addition, the filmmakers found that the NCI and the DNHW generally had a hands-off approach to sponsorship. Having set the goals for the film, they generally left it up to the filmmakers to get on with turning it into a workable movie.

Foster’s enthusiasm for coproduction approaches to filmmaking provides a clue to the relaxed attitude of the NFB. Such deals were seen as a solution to the political and funding problems facing the NFB after the war, and Foster accepted that coproduction meant that there was an expectation that films would have to bend to their sponsors’ desires. Indeed, for Foster, commissioning a script became a way of bringing in sponsors, and of addressing their concerns and agendas before filming began. In the case of Challenge, as we saw in chapters 3 and 4, Foster had used the DNHW commission to develop a script which he then hawked to the Americans. Then when the NCI came on board, Foster had the script rewritten in part to reflect the new international nature of the sponsorship. It is likely that this rewrite was carried out after detailed discussions with the sponsors, but once the script was ready, and reviewed by the sponsors, the filmmakers found themselves relatively free in how they turned it into a film.

Foster might have had political and financial reasons for his flexibility, but the producer and director—Guy Glover and Morten Parker, respectively—seem to have been equally relaxed about the sponsors. Both men had been involved in the rewrites after the Americans came on board, and any concerns they might have had about interference from the sponsors soon were put to rest. Once the script was complete, they found themselves more or less free to interpret it as they liked. It is true that Dallas Johnson constantly sought to ensure that the film had NCI scientists’ approval, and that Gilchrist probably did the same for NCIC scientists, and they—Glover and Parker—worried about reactions to the film from the sponsors at the screening of the rough cut. But Glover and Parker were also aware that a mechanism was in place to keep the scientists at bay; the involvement of the Medical Film Institute, which was to act as a mediator between the filmmakers and the scientists. Parker latter recalled with approval the hands-off approach of the MFI, and its involvement in the appointment of Bazilauskas as a scientific consultant reaffirmed this positive view. “Baz” not only provided scientific input into the animation sequences but also contributed his own cinemotif technique to the production.

But there were limitations to the filmmakers’ willingness to have the sponsors and scientists involved. As deadlines loomed, and pressure mounted to finish production, the filmmakers were increasingly worried about such involvement. They constantly struggled with the exigencies of filmmaking—the variable skills of the actors, the dull visual palette of the laboratory, the choice of locations, the
problems of recording ambient sound, the juggling of the various representations of the scientist, the patient, the cell, the work of science, and much more — and their judgments had generally found approval from the scientists in the sponsoring agencies, even if they did not always follow their advice (such as the factory metaphor to describe biochemical processes within the cell). But at some point the advice had to stop, and the fear was that it would not, even at the last minute: recall how Constant, Parker, and Dryer pleaded against scientists’ demands for strict accuracy as they rushed to compete the commentary.

Works in progress

It should be clear from the above that the film—in each of its five versions—was a product of three projects—sponsoring, film production, and packaging—each a work in progress that involved a variety of groups and individuals, with different interests, skills, and agendas, distributed across a variety of organizations. The meaning of the film differed for each group and individual, and it also changed for each over time. Part of the work involved in each project was an attempt to address these differences, and this often meant that that the projects were not self-contained but overlapped, each with the others, and across the many organizations involved with the film.

Thus the work of sponsorship did not stop once the filming began. Sponsors continued to have a say in how the film was made, almost up to the time of release, sometimes to the consternation of the filmmakers who had to figure out when to follow the demands of the sponsors and when to resist, and how to address the different goals of the two main sponsors. It was also the case that the work of sponsorship involved more than the activities of the NCI and the DNHW. The NFB—and Ralph Foster in particular—actively cultivated sponsorship and saw the film as a malleable entity that could be molded to meet the concerns and agendas of the two sponsors as well those of the NFB itself at a time when it was struggling politically and financially in the early Cold War. Finally, sponsorship also overlapped with packaging, in that neither of the two main sponsors felt that the film could stand alone. In their view, it had to be packaged and promoted. They sought to attract the attention of the media (so briefly changing Challenge from a recruitment to a public education film), and to ensure that teachers were aware of the film and that they were given guidance on how to use it in the classroom. All this meant developing a media campaign, ensuring that other films were developed for public education purposes, and creating a teacher’s guide and a book about cancer to be made available with the film.
The work of making the movie also overlapped with the other projects. Not only did the filmmakers cultivate sponsors and expect the film to change to meet their requirements; not only did sponsors constantly proffer advice and criticism to the filmmakers on how the film might be made; but production and packaging overlapped considerably. Soon after filming began the sponsors began trying to harmonize promotional efforts with production. Thus, sponsors sought to ensure that the media had access to the filmmakers. We might recall the general excitement surrounding the prospect of a *Life* magazine spread and how the magazine was provided with the storyboards and offered the opportunity to document the making of the film. To sponsors, the film was never to be separated from its package, and Johnson and Gilchrist both sought to ensure that the filmmakers coordinated with Lester Grant’s book and the teaching guide. They also sought to accommodate the fact that the audiences for the different versions of the film were quite distinct (even if the marketing of *Challenge* meant that at times—notably around the time of the premieres—it trespassed on audiences more properly the target of *The Fight*). At times the boundary between production and promotion was quite blurred.

The end of the universe

All this jostling came to an end sometime after 1951 as the last of films were completed and the promotional efforts began to dissipate, leaving finally only small publicity efforts and modest funding put toward storage and distribution. “This film tells the story of a great adventure—science’s effort to conquer a universe so small that it cannot be seen with the naked eye, so huge that it contains the entire mechanism of life,” noted a 1951 advertisement in *Popular Photography*, just as the cinematic adventure was beginning to wind down. It would be all but forgotten in a decade or so, as would its striking vision of a microscopic universe encompassing the wonders of life.

This imagined universe was shaped, as this book has shown, by much more than science. To be sure, with Bazilauskas’ help, the film made ample references to the world of the cell as documented in school science textbooks. But mixed in with the biology were other visual and aural references: the Apollo Belevedere, the paintings of Pavel Tchelitchew and Salvador Dalí, tone paintings of cell division, and musical references to the otherworldly, among other fantastical elements. If the foregoing narrative has done anything, it should show how representations of the body and cell—and the character of the scientist and the patient—were actively constructed during filmmaking, and how their meanings
and uses within the film changed over time. Some representations were visual, others were metaphors invoked during the narration, still others were tone paintings or musical gestures toward themes such as the uncanny in science fiction movies. Sometimes these images worked together, at other times they drifted in parallel, and at others they may have clashed. Thus while the filmmakers sought to marshal all these references and images into an argument—for making the body and cancer objects of science and of enrolling would-be scientists and the public to this project—the film was such a complex of layers of imagery that its meaning was rarely stable, and the sponsors, makers, and viewers of the film could come to very different views as to its value.

Central to the creation of these representations was the Griersonian approach to filmmaking, which—alongside the animation and live-action film techniques—was a key to the transformation of the sponsors’ ideas into something that the filmmakers thought would work on screen. Grierson’s belief in subordinating naturalism to symbolic expression allowed the filmmakers to create the bigger themes of the film about the wonder of the body and cell, the work of science, the character of the scientist, and the humanitarian needs of the patient. Symbols such as the patient and scientist, or the darkness of outer space and the inner world of the cell and body, were refined during the revisions of the script, and continued to be refined as filming got underway, and in the editing, music composition/performance, and narration. But such symbols also blurred the boundary between fact and fantasy for some viewers. In the animation sections especially, symbolic expression opened the possibility of readings other than the factual, even as it allowed the filmmakers to rise above the mess of details on the screen and produce a visually interesting and coherent movie. While tensions within these representations were never entirely resolved, they provided the key symbols that sought to meet the sponsors’ hopes of recruiting more students into cancer research.

Such dynamic complexities were not confined to this film but were common features of representations and arguments in educational films. For the historian of medicine, such complexities should act as a caution against ascribing to medical and health education films a simple meaning or argument, as if these meanings remained stable over the years and across the many groups that sponsored, produced, and viewed a film. Arguments could be fleeting (think of the argument in Constant’s script about the need to keep Canadian scientists from moving abroad, or the long sequence on the fables and phantasms of the past in the same script), and the meanings of arguments that survived though the various scripts, the shooting schedule, and the edits could change dramatically
over time and from one stakeholder to the next. In addition, it should be clear that health education films were rarely just about health or illness. As my discussion of *Challenge* has shown, they could draw on a considerable range of visual and aural references. Thus the image of the scientist as “ordinary man” drew on postwar discourses that Shapin suggests sought to humanize scientists, and filmmakers turned it to the particular concerns of the sponsors of this film. The image of the scientist as “hero” drew on a long tradition of media portrayals of scientific heroes that Bert Hansen traces back to media representations of Pasteur, which he suggests helped to cultivate public interest and support for medical science. The difference here is that *Challenge* sought to cultivate such interest and support by melding the biologist or medical hero with the postwar enthusiasm for space exploration. The theme of space travel also appeared in the cell-as-universe sequences (as the filmmakers sought a visual portrayal of the huge scale of the problem of understanding the cell), while the image of cell-as-factory (a fleeting image absent from the final version of *Challenge*, but which returned in Lester Grant’s book) drew on postwar concerns about inefficient business management. Films such as *Challenge* are thus cultural objects that illuminate how filmmakers, sponsors, and viewers sought to mobilize representations to their own (sometimes conflicting) ends. Yet, as this book has suggested, the mix of images sometimes worked in harmony and sometimes in tension (such as between the scientist as ordinary man and someone exceptional, a hero, much as ordinary men had been portrayed as heroes during the war). *Challenge* had a bigger budget than many educational films of this period, and its filmmakers had more resources to figure out the problems with a film. Nevertheless, making an argument that the body and cancer should be objects of science was a complex task that could come together, fall apart, or wander off in other directions at any time during the creation and release of this film. So could the associated argument for encouraging would-be scientists and the public to support this project.

In the case of *Challenge*, it is clear that sponsors, makers, and viewers of the film sometimes came to very different interpretations of its meaning. For sponsors, for example, the film might have been about making the body and cancer objects of science, but for the NFB it was also about making the body and cancer filmic objects, and especially objects—creations—of the NFB, keen to rope in American sponsorship, develop cosponsorship schemes, and to make more health and science-based films. Here was an advertisement for the filmmakers and for the NFB, its animators and composer, and a means by which the NFB sought to counter its political and financial problems of the 1940s and 1950s.
Thus arguments for science and film merged. Information specialists had still other interpretations. For Johnson, and to a lesser extent Gilchrist, filmic arguments were also about securing the place of information specialists within their agencies; and, for Johnson especially, these arguments were helpful in showing the scientists and physicians who ran the NCI that her newly created Cancer Reports Section had value in recruiting scientists into the field. Arguments for science and film were thus also arguments for the emergent role of information specialist; hence the concern of the NCI Special Reports Section when colleagues questioned the value of the film. Such questions threatened their claims to expertise. Recall also the delicate calculations that NIH critics of the film had to make. They were not willing to completely undermine it, for while failure might have allowed them to seize back control of public educational efforts about cancer at the NCI, failure would also have been an embarrassment to their agencies participating in a high-profile international collaboration.

A more general point arising from this book is the malleability of film as a tool of health education. A close look at the making of Challenge demonstrates how sponsors with overlapping agendas and conflicting goals sought to shape a film in ways that fitted their interests. We have seen how the film changed during the rewrites, the filming and editing, the composition of the narration, the performance of the musical score, and the consultations with sponsors. Also evident is how malleable a film remains long after its final production and release. Consider further the role of the public relations campaigns, what Dallas Johnson called the “press handling,” and the classroom educational materials developed to accompany the film, all of which were intended to shape audience responses and prepare the ground for the arguments projected on the screen. In addition, the release of other versions of the film for other audiences shows how the sequences used in one film might be repurposed in another, as when sequences in Challenge intended to recruit young students into cancer research were reused in The Fight for a theatrical audience. Films are intrinsically malleable, with sequences that can be cut out, reordered, transposed, and adapted from one film to another. And this book has indicated how the key representations deployed in a film—here, the scientist, the patient, the work of science, the cell, and the body—were also malleable. The filmmakers struggled to control this malleability so that the imagery made the arguments they wanted. However, the aural and visual imagery could distract some viewers, and the arguments themselves had multiple meanings and uses for different stakeholders—the sponsors, professional groups such as information specialists, the filmmakers, and viewers.
And finally, there is the ephemeral nature of these films. The administrative struggles, the filmmaking, the propaganda campaigns, and other activities mainly happened in the three to four years from 1948 to 1951. Over time, sponsors, producers, exhibitors, and viewers moved on. *Challenge* and its package came to be used less and less, and the imaginary universe that the film had conjured disappeared. The dust settled within the American and Canadian sponsoring agencies within a couple of years, and they moved on to other projects, as did the NFB, leaving the welcome glow of the film’s successes and prizes. In the classroom, teachers eventually abandoned *Challenge/Alerte*, and theatrical screenings of *The Fight*, *The Outlaw Within*, and *Cancer* also eventually ended, as did the few television screenings. Each time the projectors rolled, the arguments in these films burst into life once again, a universe brought into being briefly, only to dim again when the lights came on. The messages and images lingered on for the few viewers who heeded the film’s call: the teacher who wanted to inspire a young scientist, or the anticancer advocate looking to make a statement. But as the 1950s and 1960s wore on, the projectors rolled less and less often. Increasingly the reels remained confined to their canisters, filed away, the frames sometimes scratched, the leaders torn, and sprockets broken. The arguments of *Challenge* were splashed across the screen less often; students, teachers, and other viewers engaged with them less and less, and then not at all. The classrooms emptied. The theaters went dark. And the film faded from memory.