

American Catholicism's Science Crisis and the Albertus Magnus Guild, 1953–1969

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ABSTRACT

During the middle decades of the twentieth century, American Catholic scientists experienced a sense of crisis owing to the paucity of scientific research performed either by individual Catholics or in Catholic institutions of higher learning. In 1953 the Rev. Patrick Yancey, S.J., the chairman of the biology department at a small Jesuit college and a member of the newly created National Science Board, led efforts to establish a national organization of Catholic scientists. Subsequently known as the Albertus Magnus Guild, this organization attempted both to improve Catholics' scientific performance and to refute the widely held notion among non-Catholic Americans that Catholicism was inherently hostile to science. By reflecting on Yancey's career as an educator and scientist and on the history of the guild, this article seeks to deepen our understanding of twentieth-century Catholic science education and reveal the ways in which Catholic scientists approached the issues surrounding the interaction of science and religion.

IN THE SPRING OF 1955, at the annual meeting of the Catholic Commission on Intellectual and Cultural Affairs (CCICA), Monsignor John Tracy Ellis (1905–1992), America's foremost Catholic historian, presented an acidic critique of the anti-intellectualism that, he believed, was prevalent among American Catholics. While acknowledging that a number of social, institutional, and cultural factors had contributed to the development of this anti-intellectualism, Ellis refused to accept these as grounds for excusing Catholics' intellectual failures. American Catholics, he said, "have suffered from the timidity that characterizes minority groups, from the effects of a ghetto they have themselves fostered, and, too, from a sense of inferiority induced by their consciousness of the inadequacy of

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Catholic scholarship.” He pointedly went on: “The chief blame” for Catholic intellectual weakness “lies with Catholics themselves. It lies in their frequently self-imposed ghetto mentality which prevents them from mingling as they should with their non-Catholic colleagues, and in their lack of industry and the habits of work.”¹

Both shortly after the CCICA meeting and for many years to come, Ellis’s paper, published under the title “American Catholics and the Intellectual Life,” would circulate widely and provoke vehement responses among Catholic leaders and intellectuals. His criticisms rapidly transformed an existing stream of Catholic self-criticism in matters of scholarship into a veritable torrent. The so-called “great debate” over the future of Catholic higher education had begun.²

A number of Catholic scientists had contributed to the stream of self-criticism that Ellis now appealed to so effectively. More so than most Catholic nonscientists, they were painfully aware of the statistics on Catholic underachievement in the natural sciences that Ellis highlighted in his paper. Indeed, by the early 1950s the extent of Catholics’ scientific deficiencies had become so well documented that in the minds of many well-informed Catholics it constituted a genuine crisis for the American church.

The 1951 collapse of the Catholic Round Table of Science (CRTS), the first national organization of Catholic scientists, compounded the sense of crisis. Some Catholic scientists—though by no means all—believed that the CRTS had made significant contributions to improving Catholics’ scientific performance during its twenty-three-year existence and viewed its passing with regret. Among them, the Rev. Patrick Henry Yancey, S.J. (1896–1969), the chairman of the biology department at a small Jesuit college and—to the surprise of many—a charter member of the newly established National Science Board, emerged as the leading figure.

In the spring of 1953, after successfully petitioning for the support of both scientific colleagues and the National Catholic Education Association, Yancey engineered the founding of a new organization of Catholic scientists, which subsequently became known as the Albertus Magnus Guild (AMG). Chiefly under Yancey’s guidance, the guild grew considerably during its first decade of operation, achieving a total membership of more than fourteen hundred in 1963.³ This organizational triumph proved ephemeral, however. Owing to the increasing radicalism of Catholic higher education’s “great debate” and the ensuing institutional upheaval, the AMG experienced a precipitous decline; by 1969 it was defunct.

In this essay, I intend to improve our understanding of the relationship of the American Catholic Church to the sciences during the middle decades of the twentieth century by analyzing various aspects of the AMG’s history and that of its chief organizer, Father

¹ John Tracy Ellis, “American Catholics and the Intellectual Life,” *Thought*, Sept. 1955, 30(118):351–388, on pp. 385–386.

² Philip Gleason, *Contending with Modernity: Catholic Higher Education in the Twentieth Century* (New York: Oxford Univ. Press, 1995) (hereafter cited as **Gleason, *Contending with Modernity***), pp. 287–296. Bishop (and later Cardinal) John J. Wright, borrowing a phrase then current in American foreign policy discussions, labeled the emerging controversies over Catholic scholarship the “great debate.” He appears to have been the first commentator to employ the phrase in the context of Catholic higher education. See *ibid.*, p. 291; and John J. Wright, “Prefatory Note,” in John Tracy Ellis, *American Catholics and the Intellectual Life* (Chicago: Heritage Foundation, 1956), pp. 5–10.

³ On the founding of the Albertus Magnus Guild see P. H. Yancey, S.J., “Background of Catholic Science Organization,” *Catholic Science Notes*, 14 May 1953, pp. 1–3, Marquette University Archives, Milwaukee, Wisconsin (hereafter **MUA**). For membership figures see Yancey, “Executive Secretary’s Report,” *Bulletin of the Albertus Magnus Guild* (hereafter cited as **Bulletin**), Jan. 1962, 9(4):2; and “Secretary’s Report,” *ibid.*, Jan. 1963, 10(4):2.

Yancey. Specifically, my intention is to shed some much-needed light on two questions that have so far received little attention from historians. First, how did science education develop in Catholic institutions of higher learning during these years? And second, what did Catholic scientists view as the proper relationship between science and religion?

The historiography on the relationship of the Catholic Church to the sciences has undergone substantial revision in the last several decades. Few historians any longer subscribe to John William Draper's famous judgment that Catholicism and science are "absolutely incompatible." Rather than conflict, recent studies have emphasized the church's contribution to scientific knowledge. J. L. Heilbron, for instance, maintains in his book *The Sun in the Church* (1999) that "the Roman Catholic Church gave more financial and social support to the study of astronomy for over six centuries, from the recovery of ancient learning during the late Middle Ages into the Enlightenment, then any other, and, probably, all other, institutions." In addition, a considerable literature on the scientific accomplishments of the Jesuit order in the seventeenth and eighteenth centuries has developed of late. What emerges from these revisionist studies is a more sophisticated and contextualized portrait than historians once had of Catholicism's interactions with the sciences. It is a portrait that recognizes that such interactions have ranged over a spectrum from substantial harmony to severe conflict in ways that discredit the notion of an "absolute" incompatibility between the two.⁴

At first glance, the character of science departments in twentieth-century American Catholic institutions of higher learning seems to conform to the conflict interpretation of Catholicism's relationship to science. In fact, the large body of sociological literature on twentieth-century science education in the United States, which is virtually unanimous in characterizing the education offered by Catholic institutions as far inferior to that offered by non-Catholic ones, tends to offer just such an interpretation.⁵

Despite this sociological consensus, I believe a careful consideration of the historical development of Catholic science departments will yield a more nuanced assessment. While religious commitments with little connection to scientific concerns *per se* both motivated the founding of many of these departments and contributed to their persistent academic weakness, the administrators and faculty at Catholic institutions often displayed a dedication to the scientific enterprise that belies the notion of an inherent Catholic hostility to science. As a first step toward revising the present understanding of Catholic science

⁴ James R. Moore, *The Post-Darwinian Controversies: A Study of the Protestant Struggle to Come to Terms with Darwin in Great Britain and America, 1870–1900* (Cambridge: Cambridge Univ. Press, 1979), pp. 19–49, on p. 26 (quoting Draper); and J. L. Heilbron, *The Sun in the Church: Cathedrals as Solar Observatories* (Cambridge, Mass.: Harvard Univ. Press, 1999), p. 3. On the scientific accomplishments of the Jesuits in the seventeenth and eighteenth centuries see, e.g., Steven J. Harris, "Mapping Jesuit Science: The Role of Travel in the Geography of Knowledge," in *The Jesuits: Cultures, Sciences, and the Arts, 1540–1773*, ed. John W. O'Malley, S.J., Gauvin Alexander Bailer, Harris, and T. Frank Kennedy, S.J. (Toronto: Univ. Toronto Press, 1999), pp. 212–240; Florence Hsia, "Jesuits, Jupiter's Satellites, and the Académie Royale des Sciences," *ibid.*, pp. 241–257; Mordechai Feingold, ed., *Jesuit Science and the Republic of Letters* (Cambridge, Mass.: MIT Press, 2003); and Marcus Hellyer, *Catholic Physics: Jesuit Natural Philosophy in Early Modern Germany* (Notre Dame, Ind.: Univ. Notre Dame Press, 2005). For a helpful discussion on the interaction of Catholicism and science in the early modern period see William B. Ashworth, Jr., "Catholicism and Early Modern Science," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, ed. David C. Lindberg and Ronald L. Numbers (Berkeley: Univ. California Press, 1986), pp. 136–166.

⁵ Prominent examples of this literature include Harvey C. Lehman and Paul A. Witty, "Scientific Eminence and Church Membership," *Scientific Monthly*, Dec. 1931, 33(6):544–549; and R. H. Knapp and H. B. Goodrich, *Origins of American Scientists* (Chicago: Univ. Chicago Press, 1952), pp. 40, 274–275. For a critical overview of the sociological literature on Catholics and science see Mark S. Massa, S.J., *Anti-Catholicism in America: The Last Acceptable Prejudice* (New York: Crossroad, 2003), Ch. 8.

programs in America, I present here an outline of the development of Catholic science education in the middle third of the twentieth century, drawing chiefly on Yancey's career as a biology instructor and, subsequently, the department chair at Spring Hill College in Mobile, Alabama, as well as the AMG's efforts to improve Catholic scientific performance.

The guild's history not only presents scholars with information about the development of Catholic science education; it also provides valuable insights into Catholic scientists' opinions concerning the proper relationship between science and religion. The Catholic scientists who joined the AMG vehemently denied the accusation that their church was averse to modern science and attempted to reconcile Catholic teachings with the latest scientific developments. As we shall see, the accommodationist outlook of the AMG was not without its intellectual problems, nor was it uncontested within the Catholic community. The optimistic belief of the guild's leaders—that all scientific discoveries, once understood in their proper philosophical context, could be reconciled to the dogmas of the faith—if never quite abandoned, took on a very different cast in the tumultuous intellectual environment of the 1960s.

It is my hope that this essay, besides filling a gap in the literature, will help awaken more historians to the real need for additional research on the interactions of American Catholicism and science during the twentieth century. The historiography on this subject remains remarkably thin, particularly when contrasted with the rich literature on the parallel subject of American Protestants and science.⁶ Outside of several treatments of the Vatican's condemnation of *Evolution and Dogma* (1896), by the Notre Dame scientist Father John A. Zahm (1851–1921), and various institutional histories of Catholic colleges and universities, very little scholarship exists on American Catholics and science.⁷ Philip Gleason's majestic study of Catholic higher education in the twentieth century, *Contending*

⁶ The literature on American Protestants and science is too extensive to list here. Some representative studies include Theodore Dwight Bozeman, *Protestants in an Age of Science: The Baconian Ideal and Antebellum Religious Thought* (Chapel Hill: Univ. North Carolina Press, 1977); Ronald L. Numbers, *Creation by Natural Law: Laplace's Nebular Hypothesis in American Thought* (Seattle: Univ. Washington Press, 1977); Herbert Hovenkamp, *Science and Religion in America, 1800–1860* (Philadelphia: Univ. Pennsylvania Press, 1978); Moore, *Post-Darwinian Controversies* (cit. n. 4); James Turner, *Without God, Without Creed: The Origins of Unbelief in America* (Baltimore: Johns Hopkins Univ. Press, 1985); Numbers, *The Creationists* (New York: Knopf, 1992); George M. Marsden, *The Soul of the American University: From Protestant Establishment to Established Unbelief* (New York: Oxford Univ. Press, 1994); Edward J. Larson, *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion* (New York: Basic, 1997); David N. Livingstone, D. G. Hart, and Mark Noll, eds., *Evangelicals and Science in Historical Perspective* (New York: Oxford Univ. Press, 1999); and Jon H. Roberts and Turner, *The Sacred and the Secular University* (Princeton, N.J.: Princeton Univ. Press, 2000).

⁷ John A. Zahm, *Evolution and Dogma* (Chicago: McBride, 1896). On Zahm see Ralph E. Weber, *Notre Dame's John Zahm: American Catholic Apologist and Educator* (Notre Dame, Ind.: Univ. Notre Dame Press, 1961); and R. Scott Appleby, "Exposing Darwin's 'Hidden Agenda': Roman Catholic Responses to Evolutionary Theory: 1875–1925," in *Disseminating Darwinism: The Role of Place, Race, Religion, and Gender*, ed. Ronald L. Numbers and John Stenhouse (Cambridge: Cambridge Univ. Press, 1999), pp. 173–207. Typical examples of available institutional histories include Raphael N. Hamilton, *The Story of Marquette: An Object Lesson in the Development of Catholic Higher Education* (Milwaukee, Wis.: Marquette Univ. Press, 1953); C. Joseph Nuesse, *The Catholic University of America: A Centennial History* (Washington, D.C.: Catholic Univ. America Press, 1990); and Robert Emmett Curran, S.J., *The Bicentennial History of Georgetown University*, Vol. 1: *From Academy to University, 1789–1889* (Washington, D.C.: Georgetown Univ. Press, 1993). Bernadette McCauley's work on nineteenth-century Catholic hospitals has provided an important new perspective on Catholic participation in nineteenth-century science; see her study *Who Shall Take Care of Our Sick? Roman Catholic Sisters and the Development of Catholic Hospitals in New York City* (Baltimore: Johns Hopkins Univ. Press, 2005). For recent case studies of the interaction of Catholics and science during the twentieth century see Carl-Henry Geschwind, "Embracing Science and Research: Early Twentieth-Century Jesuits and Seismology in the United States," *Isis*, 1998, 89:27–49; and John A. Heitmann, "Doing 'True Science': The Early History of the Institutum Divi Thomae, 1935–1951," *Catholic Historical Review*, 2002, 88:702–722.

with Modernity (1995), provides the most comprehensive portrait yet available of the development of Catholic science education, but even this indispensable work offers little in the way of detail about particular departments and nothing at all concerning Catholic scientists' attitudes toward the problems of science and religion. Much work remains to be done.

THE CHARACTER OF CATHOLIC SCIENCE EDUCATION

The general character of Catholic higher education—its institutional structures and theoretical underpinnings—was partly responsible for the dearth of Catholic scientific accomplishment at midcentury and deeply influenced AMG leaders' thinking. Therefore, before looking closely at the AMG itself, it will be helpful to sketch briefly the development of Catholic institutions of higher learning in the first half of the twentieth century, giving particular attention to the shaping of their science departments.

During the early decades of the century, profound changes took place in the world of American education that affected nearly all educational institutions, whether Catholic or not. These years witnessed a remarkable rise in student enrollment at all levels of education; the appearance of authoritative accreditation bodies that successfully pushed for the separation of schools into clearly delineated secondary, collegiate, and graduate institutions; the creation of standardized measures of academic accomplishment at each level of schooling; dramatic alterations in collegiate curricula, characterized by a reduced emphasis on classical studies and the growth of specialized course work tailored to specific professional programs; and, perhaps most significant for our present purposes, the emergence of graduate research as the ultimate measure of academic prestige.⁸

The administrators of Catholic schools, just like those of non-Catholic ones, had to grapple with these general trends in American education, but they also faced peculiar challenges tied to their unique religious commitments and institutional arrangements. For the most part, America's leading universities, having grown up on the foundation of nineteenth-century Protestant colleges, retained explicit Protestant identities well into the twentieth century, but by 1900 the days of direct clerical oversight had largely passed. In contrast, a religious authority, whether in the form of a particular diocese or—as was more often the case—a religious order, directly owned and controlled almost all Catholic institutions of higher learning. Thus the administration and much of the teaching at Catholic schools were in the hands of men and women “religious”—that is, priests, brothers, or nuns who had taken lifelong vows to serve a particular religious community. The diversification of curricula, combined with the growth in enrollments, placed tremendous pressure on the religious bodies running Catholic schools to find the financial and human resources necessary to provide their institutions with adequate facilities and staff.⁹

In addition to maintaining and expanding their schools in a rapidly changing educational environment, Catholic administrators also faced the more fundamental issue of justifying

⁸ Throughout this essay my discussions of Catholic higher education draw heavily on the work of Philip Gleason. In particular, see Philip Gleason, “American Catholic Higher Education: A Historical Perspective,” in *The Shape of Catholic Higher Education*, ed. Robert Hassenger (Chicago: Univ. Chicago Press, 1967), pp. 15–53; and Gleason, *Contending with Modernity*. For this paragraph see *ibid.*, Ch. 1, particularly the summary on p. 21.

⁹ For a discussion of the changing role of religion in the emergent American universities see Marsden, *Soul of the American University* (cit. n. 6); and Julie A. Reuben, *The Making of the Modern University* (Chicago: Univ. Chicago Press, 1996). On the situation in Catholic institutions of higher learning see Gleason, “American Catholic Higher Education,” pp. 30–34; and Gleason, *Contending with Modernity*, pp. 39–43, 81–84.

the very existence of Catholic institutions of higher learning, which—with the exception of seminaries—seemed increasingly to lack self-evident religious purposes. Throughout the nineteenth century the Catholic hierarchy and various religious orders ran colleges in the United States according to a model imported from continental Europe. Combining into an integrated whole what would later be separated into secondary and collegiate elements, these schools offered students primarily a classical-humanist education.¹⁰ Over the first two decades of the twentieth century, nearly all Catholic educators, however reluctantly in some cases, acknowledged the need to conform their schools to the emerging standard of American collegiate education: a four-year program that allowed for the generous sampling of electives, with the conferral of degrees based on the completion of a set number of “credit hours.”

Failure to adopt this model of the college, they realized, would have ensured that the vast majority of Catholic collegians studied in non-Catholic institutions. Many, if not most, Catholic students aspired to more prestigious occupations than those of their immigrant parents and wished to pursue professional careers in such fields as teaching, medicine, engineering, and law, which were coming to require attendance at an accredited school.¹¹

Although accepting the practical need for modern educational institutions, many Catholic educators did so with something less than a clear conscience. If Catholic schools differed little in their organization and curriculum from non-Catholic ones, then the obvious question became in what substantial sense they were “Catholic” at all. This question became even more pressing in light of the harsh criticisms that many Catholic intellectuals had leveled against the theories typically used to justify modern education during the Progressive Era. As Catholic critics saw it, the prevailing philosophies of education, such as that of John Dewey (1859–1952), which rejected the acquisition of objective truth not only as an ideal but even as a possibility, eliminated its highest purposes. Modern schools, so these critics claimed, aspired to nothing higher than making students competent in methods and processes for pragmatic problem solving, with scientific research being upheld as the exemplary model for the whole of human learning.¹²

By 1930 most leaders of Catholic education had come to regard neoscholastic philosophy as the key instrument for infusing modern educational institutions with an explicit Catholic rationale. Since Pope Leo XIII's encyclical *Aeterni Patris* (1879), which urged Catholic educators to give renewed attention to scholastic philosophy, the Vatican had actively supported the cultivation of neoscholasticism as a counterweight to what many in the hierarchy regarded as dangerous “modernist” trends in European thought. By the 1920s these Vatican efforts had helped generate a “Scholastic Revival” among European Catholic intellectuals that greatly influenced their counterparts in the American church.¹³

One of the chief tenets of neoscholasticism—or, as it was often termed, Thomism—

¹⁰ Gleason, “American Catholic Higher Education,” pp. 33–36; and Gleason, *Contending with Modernity*, pp. 4–6.

¹¹ Gleason, “American Catholic Higher Education,” pp. 26–27, 38–40, 44–48; and Gleason, *Contending with Modernity*, pp. 46–61.

¹² Thomas E. Woods, Jr., *The Church Confronts Modernity: Catholic Intellectuals and the Progressive Era* (New York: Columbia Univ. Press, 2004), Chs. 2, 4, esp. pp. 26–27, 30–31, 86–90.

¹³ Gleason, *Contending with Modernity*, pp. 105–114. See also William M. Halsey's treatment of the Scholastic Revival in America. He views the swelling of American Catholic enthusiasm for Thomism in the 1920s as resulting largely from the Catholic community's determination to preserve certain American ideals—such as optimism, self-reliance, and progress—in the face of widespread disillusionment among non-Catholic intellectuals. See William M. Halsey, *The Survival of American Innocence: Catholicism in the Era of Disillusionment, 1920–1940* (Notre Dame, Ind.: Notre Dame Univ. Press, 1980).

was the notion that there exists an objective and intelligible reality to which all persons have access through the use of reason and intuition. Starting from this premise, Thomists argued that every human mind, without relying on dogma or revelation, could perceive the existence of God, the essential nature of the created world, and the fundamental precepts of morality. Given humanity's natural ability to obtain such knowledge, Thomists maintained that all men and women could discern the natural laws that permeate reality and bind human conscience.¹⁴

Catholic educators considered neoscholastic philosophy's "moderate realism" a necessary antidote to the materialism and skepticism that they feared tainted many non-Catholic schools. By affirming both the human mind's capacity to acquire objective truth and the rational basis of Christian faith, this philosophy, they believed, "supplied the principles for applying faith to personal and social life, and thus constituted [Catholics'] basic resource . . . to reorder society and culture in accordance with the Christian vision." In short, Thomism served as a Catholic "philosophy of life" and sustained a comprehensive "world-view" with which to engage an American nation ever more uprooted from its Christian foundations.¹⁵

Catholic science departments developed within the context of the major institutional and intellectual changes affecting Catholic higher education that I have outlined here, and aspects of Yancey's career as a Jesuit educator and scientist suggest how such things as increasing enrollment, curricular standardization, and the desire to promote explicitly "Catholic" education shaped Catholic scientific work.

Like many priests of his generation, Yancey was born to working-class parents. His mother and father, at the time of their wedding, were employed at the same laundry in Tampa, Florida, the former as a laborer and the latter as the manager. During Yancey's boyhood, religion proved a source of family friction. Although both his parents were Catholics, Yancey's mother, the child of first-generation immigrants, had been raised in the faith, while his father converted from Methodism following marriage. Much to the dismay of Yancey's mother, her husband had few scruples about taking their children to Protestant church services and no desire to send them to Catholic schools. However, she prevailed over him in these disputes and, said Yancey, "finally got us children straightened out." In 1912, after completing the course of studies at a Jesuit preparatory school, the sixteen-year-old Yancey followed the example of his older brother and entered the novitiate of the Jesuits' New Orleans Province to pursue a priestly vocation.¹⁶

Throughout the early years of Yancey's Jesuit training (1912–1923)—that is, prior to his theological studies in Europe—the American Jesuits' most pressing need was the acquisition of competent teachers to instruct the unprecedented number of students attending their schools. Yancey's first experience at Spring Hill College reflected the staffing problems the society faced.

¹⁴ Gleason, *Contending with Modernity*, pp. 118, 114–123. For a thorough and concise treatment of the neoscholastic movement's principal thinkers see Gerald McCool, *The Neo-Thomists* (Milwaukee, Wis.: Marquette Univ. Press, 1994).

¹⁵ Gleason, *Contending with Modernity*, pp. 115 (quotation), 119. Summarizing his understanding of the relationship between the modernization of Catholic higher education and the "Catholic intellectual and literary revival," in which neoscholasticism played the most significant part, Philip Gleason states that "the organizational modernization [of Catholic higher education] . . . made it possible to institutionalize the intellectual revival in the colleges, while the revival in turn reinforced the Catholic identity of the colleges at a time when they were undergoing a process of institutional modernization": *ibid.*, pp. 123, 137.

¹⁶ Patrick Henry Yancey, *To God through Science: Reminiscences of Patrick Henry Yancey, S.J.* (Mobile, Ala.: Spring Hill College Press, 1968) (hereafter cited as **Yancey, *To God through Science***), pp. 8–17, 20–44, on p. 15.

When he came to Spring Hill in the fall of 1919 to undertake four years of teacher training, the college had not yet completed its transformation from a typical nineteenth-century Catholic college to a more modern, American one. Spring Hill lacked clear administrative or institutional boundaries between its secondary and collegiate departments. Although Yancey arrived expecting to teach various subjects to the equivalent of high school freshmen, he quickly learned that he would be teaching biology to college juniors instead. Despite his protests over his lack of preparation—his only relevant training being a single semester of college biology—Spring Hill's Jesuit administrators employed him as their chief collegiate biology instructor throughout his four years at the school. Inadequate funds prohibited the administration from hiring a more qualified lay instructor.¹⁷

The Spring Hill administrators' determination, despite their limited resources, to offer science courses such as biology reflected a broad trend among Jesuit colleges during the years of U.S. involvement in World War I. As Yancey later recalled in his published reminiscences, during the war years a "'science fever' . . . swept through our Jesuit institutions." The sudden interest in science, he argued, derived from the Students' Army Training Corps (SATC), a War Department program that sought the assistance of private and public institutions of higher learning in the technical training of military recruits. But the Jesuits' "fever" persisted after hostilities ended in Europe and the SATC disappeared, a fact for which Yancey offered this explanation:

With the development of the chemical industry after the war there was a demand for chemists and the medical and dental schools now began requiring courses in biology for admission. As a result we began feverishly, though sometimes not very wisely, to assign men to specialize in one of the sciences. Such men as Father James B. Macelwane, S.J., and Father Alphonse M. Schwitalla, S.J., were sent to great secular universities where they received their doctorates and returned to our colleges and universities to set up or expand departments where they would train others in the latest discoveries.¹⁸

Somewhat ironically, the Jesuits' "antimodernist" religious ideology fueled their efforts to modernize the science education offered at their schools. As Yancey's explanation suggests, the rising academic requirements for various professional schools—particularly those in health-related fields—provided the direct impetus for improving science education.¹⁹ But for the Jesuits, and many other Catholic educators as well, keeping their schools academically viable was not simply a question of institutional survival; it was also a matter of conscience. An unacceptable "secular" mentality, in their view, marred the instruction offered at many non-Catholic institutions of higher learning, making attendance at these schools spiritually dangerous for Catholics. Therefore, the Jesuits believed, they had a religious duty to make a Catholic education—by which they meant an education grounded in the principles of neoscholastic philosophy—available to as many Catholic students as possible, whatever their professional aspirations.²⁰

¹⁷ *Ibid.*, pp. 73–86.

¹⁸ *Ibid.*, pp. 68–69. For an extended discussion of the impact of the SATC on Catholic education see Gleason, *Contending with Modernity*, pp. 72–80. The Rev. James B. Macelwane, S.J. (1883–1956), who received a Ph.D. in physics from the University of California at Berkeley in 1923, established the Department of Geophysics at St. Louis University and served for a time as that school's graduate dean. The Rev. Alphonse M. Schwitalla, S.J. (1882–1965), who received a Ph.D. in zoology from Johns Hopkins University in 1921, also had a distinguished career at St. Louis University, where he served in a number of roles, including head of the Department of Biology, dean of the School of Medicine, and, like Macelwane, graduate dean.

¹⁹ Daniel M. Lilly, "Research in the Catholic University, Past, Present, Future," *Bulletin*, Jan. 1957, 4(1):4–5; and Gleason, "American Catholic Higher Education" (cit. n. 8), pp. 41–42.

²⁰ Gleason, *Contending with Modernity*, pp. 174–175. See also Yancey's comments on his own decision not to attend a non-Catholic graduate program: Yancey, *To God through Science*, p. 115.

That the religious motivation behind Catholic science education produced a degree of tension among Catholic scientists over the issue of scientific research can be seen clearly in the case of the Jesuits. The Jesuit leadership sponsored the graduate studies of men such as Macelwane and Schwitalla in order to obtain qualified educators and administrators, not researchers. They expected these men to establish Jesuit graduate programs primarily to produce Catholic graduates with the necessary technical expertise to teach at Jesuit colleges. Indeed, Yancey, who earned his Ph.D. under Schwitalla at the Jesuits' St. Louis University in 1931, was an early success for the emerging Jesuit university system. After completing his doctorate, Yancey went on to serve for more than thirty years as the chairman of Spring Hill's biology department, which throughout his tenure focused its efforts on the training of premedical students as well as others who sought careers in health-related occupations such as dentistry, nursing, and medical technology.²¹

Although the Jesuits and other Catholic educators had a measure of success in their forays into graduate science education, the results of their programs elicited from Catholic scientists complaints that reveal the conflicted nature of their thinking about the purposes of graduate work. Because many Catholic scientists shared the Jesuits' concern with the nature of non-Catholic education, they sympathized with the desire to staff as many Catholic colleges as possible with adequate science departments. But Catholic scientists also shared with the broader scientific community values and concerns that made them dissatisfied with the results of placing so much emphasis on the mere staffing of undergraduate institutions. Specifically, Catholic scientists, like their non-Catholic colleagues, considered innovative theories and research the supreme criteria of scientific achievement; and from this perspective, the work done in Catholic graduate programs or even by Catholics working in secular institutions was, many Catholic scientists increasingly believed, wholly unsatisfactory.²²

AMERICAN CATHOLICISM'S SCIENCE CRISIS AND THE ALBERTUS MAGNUS GUILD

The failure of Catholic institutions to produce scientific research or qualified scientists at anything approaching the rate of non-Catholic institutions engendered the sense of crisis among Catholic scientists that motivated Yancey to undertake efforts to organize the Albertus Magnus Guild in 1953. As Catholic scientists were keenly aware, Catholic underachievement revitalized the old charge that the Catholic Church and its teachings inherently frustrated serious scientific research—Paul Blanshard baldly leveled this accusation in his polemical *American Freedom and Catholic Power* (1949)—and raised doubts about the intellectual integrity of Catholics' actual scientific work.²³

²¹ On the Jesuits' reasons for sponsoring graduate studies see Yancey, *To God through Science*, pp. 69, 133; and Patrick H. Yancey, S.J., "American Catholics and Science," *Thomist*, Oct. 1961, 24(4):639–656, esp. p. 647. On Yancey as a "success" of the Jesuit university system see Yancey, *To God through Science*, pp. 125–132. On Spring Hill during Yancey's time there see *ibid.*, pp. 141–152; and Andrew C. Smith, "Father Yancey and Spring Hill College," *Bulletin*, May 1968, 15(8):2–4.

²² Gleason, *Contending with Modernity*, pp. 171–183. Some Catholic scientists, such as Hugh Taylor, resented what they saw as the Jesuits' self-defeating prudery with regard to Catholics attending secular schools. See Hugh S. Taylor, "Should They Go to Princeton?" *Commonweal*, 14 Feb. 1936, 23:427–429. For a more favorable assessment of the Catholic educational enterprise, which nonetheless recognizes the detrimental impact of the inflation of the Catholic educational system on the quality of scientific research, see Yancey, "American Catholics and Science," pp. 645–648.

²³ Paul Blanshard (1892–1980) was a journalist, author, and political activist who devoted much of his career to publicizing the supposed danger that the Catholic Church posed to American political freedom. His major works on the Catholic threat include *American Freedom and Catholic Power* (Boston: Beacon, 1949); *Communism, Democracy, and Catholic Power* (Boston: Beacon, 1951); and *The Irish and Catholic Power* (Boston: Beacon, 1953).

The growing body of social science literature that documented Catholic underachievement in the sciences did most to heighten the sense of alarm among Catholic scientists. For instance, a widely cited piece that appeared in the December 1931 issue of the *Scientific Monthly* claimed to show that Catholics were approximately twenty times less likely to become “outstanding scientists” than their representation in the overall American population would predict. During the 1930s and 1940s additional studies appeared that further confirmed Catholics’ poor scientific performance, the 1952 *Origins of American Scientists*, by Robert H. Knapp and Hubert B. Goodrich, providing the grim climax to this literature. Knapp and Goodrich attempted to determine which institutions of higher learning were most productive in the training of scientists. Their findings scandalized Catholic scientists and educators: the authors had deemed it necessary to remove Catholic institutions from their original sample “on the ground that their production of scientists was so low that they constitute a class by themselves.”²⁴

Prior to the 1920s, when studies revealing Catholics’ scientific shortcomings first began to appear, most Catholics had considered a simple cataloguing of the Catholic Church’s historic achievements in the sciences sufficient rebuttal to the charge that their church was inherently hostile to science. With sociological data now documenting real Catholic deficiencies, some Catholic scientists balked at such glib defenses. Karl F. Herzfeld (1892–1978), a Catholic physicist working at Johns Hopkins, insisted in a 1929 *Commonweal* piece that it was no longer enough “to point out the splendid help which the Popes gave to science in the thirteenth century by funding the most important universities; [to point out] the fact that in the beginning of the nineteenth century some of the most prominent scientists—Volta, Avogadro and others—were good Catholics, or that Pasteur, one of the most prominent chemists and biologists of his time, was an obedient son of the Church.”²⁵ Rather than repeating the litany of past Catholic success, Herzfeld encouraged Catholics to reflect seriously on how to increase contemporary American Catholics’ interest in the sciences.

Herzfeld’s piece was one of several critical of Catholics’ scientific performance inspired by the recently formed Catholic Round Table of Science. Founded in 1928 by the Rev. John Montgomery Cooper (1881–1949), the leading anthropologist at the Catholic University of America, and the Rev. Anselm M. Keefe, O. Praem. (1895–1974), a science instructor at St. Norbert College in Wisconsin, this first national organization of Catholic scientists sought to encourage more Catholics to enter the sciences and “to get Catholic scientists to do more and better research and to become more active in scientific organizations.” While it had a relatively weak organizational structure—the CRTS consisted of little more than a single yearly meeting held at the American Association for the Advancement of Science (AAAS) annual convention and several local chapters that encouraged scientific study—the Round Table nonetheless provided a regular forum at which Catholic scientists could discuss common problems.²⁶

²⁴ Lehman and Witty, “Scientific Eminence and Church Membership” (cit. n. 5), pp. 545, 547; and Knapp and Goodrich, *Origins of American Scientists* (cit. n. 5), pp. 40 (quotation), 274–275, 288. See also Massa, *Anti-Catholicism in America* (cit. n. 5). For an important Catholic response to the growing data on Catholic academic underachievement see John A. O’Brien, ed., *Catholics and Scholarship: A Symposium on the Development of Scholars* (Huntington, Ind.: Our Sunday Visitor, 1939). For the contemporary impact of Knapp and Goodrich’s work see Julian Pleasants, “Catholics and Science,” *Commonweal*, 28 Aug. 1953, 58:509–514, on pp. 510–511; and Ellis, “American Catholics and the Intellectual Life” (cit. n. 1), pp. 378–380.

²⁵ K. F. Herzfeld, “Scientific Research and Religion,” *Commonweal*, 20 Mar. 1929, 9:560–562, on p. 561. For earlier “rebuttals” see, e.g., John A. Zahm, *Catholic Science and Catholic Scientists* (Philadelphia: Kilner, 1893); and James J. Walsh, *The Popes and Science* (New York: Fordham Univ. Press, 1908).

²⁶ Yancey, *To God through Science*, p. 133 (quotation); Yancey, “Background of Catholic Science Organiza-

Although the CRTS continued to meet until the American entry into World War II, the group's lack of tangible results disappointed many. Catholic institutions, the Round Table's membership agreed, generally lacked the facilities, staff, and funds to undertake substantial research. Furthermore, members also concurred that Catholics' tendency to view such research as a mere luxury, unnecessary to the spiritual health of the Catholic community, was partly responsible for these deficiencies. Despite reaching consensus over the nature of the problem, CRTS participants disagreed as to how to improve Catholic scientific performance and on the role, if any, that a group such as the CRTS should play in improvement efforts. Owing to both strife within the organization and growing apathy—in some cases overt hostility—from Catholic scientists outside of it, efforts to restart the Round Table in 1951, after its wartime hiatus, ended in failure.²⁷

That Catholic scientists who wished to reestablish a national organization asked Yancey, a respected but by no means “eminent” Catholic scientist, to lead the effort requires an explanation. In 1950 President Truman named only two Catholics as charter members of the newly founded National Science Board (NSB): the prominent Notre Dame bacteriologist James A. Reyniers (b. 1909) and Yancey. Truman's appointment of Yancey, which led to the Spring Hill biologist's meteoric rise within the Catholic scientific community, came as a shock to Yancey himself and to most others in the world of professional science. According to one historian of the National Science Foundation (NSF), Yancey was “no doubt the Board's most obscure biologist.” To Yancey's amusement, an Italian communist newspaper attributed his unexpected appointment to typical “Jesuit chicanery.”²⁸

Yancey realized that the Truman administration had selected him because he suited its own very specific political needs. The fact that he was a Catholic satisfied an important constituency of the Democratic Party, while the location of the institution at which he taught satisfied Alabama Senator Lister Hill (1894–1984), who had done much to secure the NSF Act's passage. This was not the first time that political calculation had benefited Catholics in the matter of federal science funding. The 1944 appointment of Notre Dame president J. Hugh O'Donnell, C.S.C. (1895–1947), to a committee that helped to prepare the report *Science—The Endless Frontier* (1945), the original blueprint for the NSF, had been similarly political.²⁹ Although Yancey's inclusion on the NSB is largely attributable to political happenstance, aspects of his past career—such as his long-standing involve-

tion” (cit. n. 3); Yancey, “American Catholics and Science” (cit. n. 21), p. 640; and Gleason, *Contending with Modernity*, p. 177.

²⁷ Yancey, *To God through Science*, p. 190; and Yancey, “Background of Catholic Science Organization,” p. 2. For examples of Catholic scientists' complaints about the “typical” Catholic view of science see John S. Sieger, “Problems of the Catholic Scientist,” *Catholic World*, Jan. 1953, 176:282–286; and Pleasants, “Catholics and Science” (cit. n. 24), pp. 511–514. For discussions within the CRTS of Catholics' typical view of scientific research and of the lack of commitment among Catholic institutions to supporting science education see John R. Cortelyou, C.M., to Rev. P. H. Yancey, S.J., 10 Feb. 1948; and Cortelyou, National Secretary of the Catholic Round Table of Science, to CRTS members, undated: MUA. A letter from Father Basile J. Luyet (1897–1974), the founder of the Institute of Biophysics at St. Louis University, to Yancey in 1955 is telling with regard to the persistence of indifference toward scientific work among some Catholic educators and churchmen. Luyet told Yancey that any organization of Catholic scientists should see to it “that the hierarchy and the administration of Catholic Universities be induced to do something to make Catholic professional research scientists feel that their activities are welcome and encouraged”: Luyet to Yancey, 7 Jan. 1955, MUA.

²⁸ Toby A. Appel, *Shaping Biology: The National Science Foundation and American Biological Research, 1945–1975* (Baltimore: Johns Hopkins Univ. Press, 2000), pp. 41–42; and Yancey, *To God through Science*, pp. 197–199, 207–208. The Jesuit Educational Association appears to have been directly involved in the negotiations with the Truman administration that led to Yancey's appointment; see *ibid.*, p. 198.

²⁹ Yancey, *To God through Science*, pp. 198–199; and Gleason, *Contending with Modernity*, pp. 215–217 (on O'Donnell's appointment).

ment with the AAAS and other professional science associations—had at least made him a credible choice.

Not long after beginning his effort to reestablish a national organization, Yancey learned of the deep antipathy that some Catholic scientists had for the former CRTS and what they considered its dubious confessional form of science. In response to Yancey's invitation to join the new organization, William F. O'Connor (b. 1910), chairman of the chemistry department at Fordham University, wrote:

For some years now, I have been running my own little opposition party to the Catholic Round Table of Science as well as anything that says *Catholic Science Bulletin*, etc. If we are Chemists, we should belong to and publish in the journals of the American Chemical Society. If we are Biologists, we should publish in their Biological journals and attend the national meetings of the Federation of American Societies for Experimental Biology. . . . I think these Catholic science groups tend to breed inferiority in that they definitely take on the flavor [of] a minor league ball club.

He continued, "If we want to play major league ball, we first have to THINK major league ball." In the opinion of O'Connor and other like-minded Catholic scientists, the CRTS served only to shield Catholics from the standards that all professional scientists should meet.³⁰

Several features of the former CRTS invited the charge of amateurish confessional science, and Yancey along with other guild leaders took steps to prevent these from appearing in the new organization. For instance, the CRTS had established no professional requirements for membership, some of its local chapters even allowing interested high school students to join. In contrast, the AMG restricted full membership to those who had obtained at minimum a master's degree in one of the sciences or were "actively engaged" in graduate or professional work of a scientific nature.³¹

Even more damning than the quality of the CRTS membership, in the eyes of critics such as O'Connor, was its practice of encouraging members to present "technical" scientific papers at local chapter meetings. Such practices, critics feared, gave the impression that Catholics wished to create "Catholic science" societies "in opposition to the regular scientific societies."³² Yancey, reflecting the prevailing opinion among the AMG leadership, insisted that the guild "should not in any way attempt to be a 'science' organization" of the kind where scientific research is discussed. In terms of the methodologies used for the conduct and evaluation of scientific research, the guild's position was that no distinction should exist among scientists on the grounds of religious belief. Yancey ardently encouraged all guild members to join and participate in the regular science societies; the guild did not exist to replace or challenge these organizations. Rather, the founders of the AMG viewed their new organization as serving primarily apologetic ends.³³

³⁰ O'Connor was making an implicit criticism of the name Yancey had given the publication vehicle he used to form the AMG—namely, *Catholic Science Notes*. See William F. O'Connor to Yancey, 16 Oct. 1953, MUA. For other examples of complaints see *Catholic Sci. Notes*, 26 Oct. 1953.

³¹ For AMG membership requirements and their justification see "Constitution of the Albertus Magnus Guild," *Bulletin*, 10 Feb. 1954, 10(1):3–4; and "Why the Guild?" *ibid.*, 12 Apr. 1954, 1(2):2–3. On the lack of such requirements for the CRTS see Yancey, *To God through Science*, p. 134.

³² See Sister Marie James, C.S.J., to Yancey, 31 Dec. 1954; Yancey to Marie James, 6 Jan. 1955 (quotation); and Marie James to Yancey, 10 Jan. 1955: MUA. See also Yancey, *To God through Science*, p. 134; and Yancey, "American Catholics and Science" (cit. n. 21), p. 640.

³³ At least in part, guild leaders adopted the name the Albertus Magnus Guild for their new organization in order to declare the "Catholic" and "scientific" identities of the group without having the words "Catholic" and "science" conjoined in its name. In 1941 Pope Pius XII had declared Albert Magnus the patron saint of students

The guild's three chief objectives, as recorded in its first constitution, reveal the organization's scientific and apologetic purposes:

1. to serve as a means of contact between Catholic scientists;
2. to promote productive scholarship and a greater participation in scientific activities by Catholic scientists;
3. to assist Catholic scientists in relating the Church's teachings to the findings of science.³⁴

As the first two objectives suggest, the guild, like the CRTS before it, sought to facilitate communication among Catholic scientists and encourage their participation in regular professional organizations. While the AMG clearly pursued these goals in order to improve the scientific research performed by Catholic institutions and individual Catholic scientists, such professional improvement supported larger aims. By increasing the number of Catholic scientists and enhancing the quality of their research, the AMG hoped to demonstrate to non-Catholics that their religion did not hamper scientific achievement.

More explicitly apologetic than the guild's first two objectives, the third indicated how the AMG leadership generally conceived of the appropriate boundary between "religion" and "science." In his response to O'Connor's criticisms of the new Catholic science organization, Yancey wrote:

While it may be true . . . [that] "there is no such thing as *Catholic* science" . . . still there are many areas in science . . . which impinge on the Faith. Scientists who are Catholics but who are not in Catholic institutions are often subjected to questioning on these points and unless they have a good philosophical and theological background (which very few have) they may not only mislead their non-Catholic friends but also do themselves harm. We know quite a few scientists who have lost the Faith due to such circumstances.

Yancey, like other AMG leaders, believed that the guild could defend the Catholic faith by facilitating the training of more first-class scientists who would be able to refute the sometimes-erroneous conclusions drawn from the results of modern science on the basis of "false" philosophy. The guild leadership believed that when such flawed reasoning appeared in technical scientific journals only a scientist could make an effective rebuttal, "because philosophers and theologians would not get a hearing in such a forum."³⁵

The guild's leaders were determined to demonstrate the compatibility of mainstream scientific opinion with Catholic teaching, even in such contentious areas as human evolution. Yet not all of their co-religionists shared this accommodationist outlook; in fact, some with quite different opinions occasionally expressed interest in joining the guild. For example, in 1955 Yancey received an unsolicited letter from John R. Scalf, a self-described "soil scientist" who worked for the Louisiana Soil Conservation Service. Scalf considered the prevailing system of soil description "a strict adjunct or confirmation of the Darwin evolutionary theory" and maintained that the system's supporters included a leading Wash-

of the natural sciences. For discussions of the guild's name choice see "Organization of Albertus Magnus Guild," *Bulletin*, 10 Feb. 1954, 1(1):1-2 (the quotation is from p. 1). The need to avoid confessional science would remain an issue throughout the guild's existence. See Frederick D. Rossini to Yancey, 8 Sept. 1961; and Thomas J. Killian to Yancey, 9 Mar. 1966: MUA. See also Yancey's comments on the CRTS in "American Catholics and Science," p. 640.

³⁴ These are the three purposes of the AMG, as listed in the organization's original constitution. See "Constitution of the Albertus Magnus Guild" (cit. n. 31), p. 3.

³⁵ Yancey to O'Connor, 20 Oct. 1953, MUA; "Why the Guild?" (cit. n. 31), p. 2 (quotation); and Richard T. Cronin, S.J., to Yancey, 2 Feb. 1955, MUA. For a concise presentation of Yancey's defense of the AMG against the charge of confessional science see Yancey, "American Catholics and Science" (cit. n. 21), pp. 655-656.

ington soil scientist with communist sympathies. Invoking St. Thomas Aquinas and the Catholic tradition of natural law, he argued for the development of a new soil classification scheme that would recognize God's "plain imprint" on the soil. Although Yancey replied graciously to Scalf's letter, encouraging him to join the AMG, most guild members no doubt would have regarded his views as an extreme example of "the anti-intellectual and anti-science attitude of American Catholics" that their organization needed to counteract.³⁶

The AMG's program of reconciling Catholic teachings with mainstream scientific views paralleled that of an organization of evangelical Protestant scientists, the American Scientific Affiliation (ASA), which sought to reconcile its conservative interpretation of the Bible with those same views. When Yancey learned of the ASA in 1964, he immediately recognized the similarities between this society and the guild, calling it "our Protestant counterpart." Despite similar aims, however, the two groups inspired distinctly different kinds of scholarship. Perhaps most significant, the AMG cultivated a broader outlook than the ASA, which, owing to its concern with the debates surrounding young-earth creationism, focused its attention almost exclusively on organic evolution and geology. Rather than channeling its discussions into a few critical scientific areas, the guild promoted the development of an encompassing Christian philosophy of nature capable of integrating the entire scientific enterprise within the confines of Catholic orthodoxy. As will be discussed later in this essay, the guild's advocacy for a neoscholastic philosophy of nature, while taken up with enthusiasm at the time of the organization's founding, would prove a source of significant division as the "great debate" over Catholic higher education became ever more heated.³⁷

Yancey, who served as the AMG's executive secretary for most of its existence, proved its most effective promoter, arranging several different publishing ventures to forward its goals. These publications included a newsletter, the *Bulletin of the Albertus Magnus Guild* (see Figure 1); a booklet containing a comprehensive membership list, the *Directory*; and occasional articles in popular Catholic periodicals, such as the Jesuits' *America* magazine, which publicized the guild and advocated upgrading American Catholics' scientific performance.³⁸ Yancey enhanced the guild's prestige by convincing such prominent Catholic churchmen and scientists as Samuel Cardinal Stritch (1887–1958), the archbishop of Chicago, and Hugh S. Taylor (1890–1974), the dean of Princeton University's graduate school and a member of the Pontifical Academy of the Sciences, to serve as figurehead leaders of the organization (see Figure 2).³⁹

³⁶ John R. Scalf to Albertus Magnus Guild, 6 Aug. 1955, MUA; Yancey to Scalf, 20 Sept. 1955, MUA; and William T. Pinkston, "Correspondence," *Bulletin*, Dec. 1957, 4(5):3. For similar criticism of antiscience attitudes among Catholics see Yancey, "American Catholics and Science," pp. 651–652; and "Letters to the Editor," *Bulletin*, May 1963, 10(8):2. For a piece suggestive of the AMG's general attitude toward evolution see John D. Dwyer's review of the antievolutionary work by the Rev. Patrick O'Connell, *Science of Today and the Problems of Genesis* (St. Paul, Minn.: Radio Replies Press Society, 1959): "Evolution True or False," *Bulletin*, Apr. 1963, 10(7):1–4.

³⁷ Soon after becoming aware of its existence, Yancey made contacts with the ASA that led to each organization sending representatives to the meeting of the other in 1965. See P. H. Yancey, "American Scientific Affiliation," *Bulletin*, Feb. 1965, 12(5):2; "American Scientific Affiliation," *ibid.*, Dec. 1965, 13(3):1; and Yancey, "Albertus Magnus Guild Report of the Executive Secretary 1965," *ibid.*, Jan. 1966, 13(4):2. For a discussion of the organization and development of the ASA see Numbers, *Creationists* (cit. n. 6), pp. 158–181.

³⁸ The *Bulletin of the Albertus Magnus Guild* initially appeared in Feb. 1954, replacing Yancey's original newsletter, *Catholic Science Notes*. The guild first published the *Directory* in 1956; a second edition appeared in 1958, with a supplement one year later. In 1964 the guild published the *Directory*'s third and final edition. The Marquette University Archives contain no copy of the 1956 *Directory*; for some brief remarks on the first edition see Patrick H. Yancey, "Catholic Scientists Join Forces," *America*, 9 Feb. 1957, 96(19):517.

³⁹ "Cardinal Stritch Accepts Honorary Presidency of the Guild," *Bulletin*, 12 Apr. 1954, 1(2):1; and Yancey, *To God through Science*, pp. 139–140, 248–249.



Figure 1. An issue of the Bulletin from 1955. It includes an obituary for Father Pierre Teilhard de Chardin (lower left), whose theological works at that time remained largely unknown.

During the guild's first decade of operation, Yancey at times expressed a degree of satisfaction with what he saw as some Catholic institutions' willingness to place greater emphasis on science education, as evidenced by the gradually improving performance of Catholic school attendees in the NSF's annual fellowship competition.⁴⁰ Whether the

⁴⁰ For documentation of this improvement see P. H. Yancey, "National Science Foundation Fellowships Awarded to Students in Catholic Colleges," *Catholic Sci. Notes*, 14 May 1953, pp. 4-5; Joseph F. Mulligan and



Figure 2. The AMG leadership at the 1962 annual meeting. Pictured from left to right are Hugh Taylor (guild president from 1953 to 1960); Patrick Yancey; John Wright, Bishop of Pittsburgh (guild honorary president from 1959 to 1969); Frederick Rossini, Dean of the College of Science at Notre Dame University (guild president from 1960 to 1965); and Lawrence Baldinger, Associate Dean of the College of Science at Notre Dame University (Editor of the *Bulletin* from 1961 to 1965).

guild's efforts had done much to effect this change or whether it merely benefited from the general discontent among Catholics with Catholic higher education, as well as important structural changes in American scientific research, is difficult to assess.

In the wake of John Tracy Ellis's scathing 1955 article "American Catholics and the Intellectual Life," Catholics' soul-searching over their educational inadequacies became vocal and widespread. As the very development of a group such as the guild testifies, significant Catholic self-criticism had existed prior to the publication of Ellis's piece. But the tone of these earlier Catholic debates over higher education was far more muted than what would follow Ellis's jeremiad. Numerous critical commentaries appeared in the latter half of the 1950s, including influential works by the Rev. Walter J. Ong, S.J. (1912–2003), the Rev. Gustave Weigel, S.J. (1906–1964), and Thomas F. O'Dea (1915–1974), that burst the bubble of apathy still surrounding some Catholic administrators in the matter of scholarship.⁴¹

The arrival of this "great debate" over Catholic higher education occurred in the midst of a remarkable transition in the funding of American scientific research. Before World War II, the major American universities had funded their research primarily through the patronage of private philanthropic foundations, direct federal monies providing only a

James J. Ruddick, "The National Science Foundation Awards for 1954–1955," *Bulletin*, 12 Apr. 1954, 1(2):9–12; Ruddick, "National Science Foundation Awards for 1955–1956," *ibid.*, May 1955, 2(3):5–6; "Secretary's Column," *ibid.*, Apr. 1956, 5(4):2; "Secretary's Column," *ibid.*, Apr. 1959, 6(4):2; "Secretary's Column," *ibid.*, Apr. 1960, 7(4):2; and Yancey, "National Science Foundation Fellowship Awards," *ibid.*, Apr. 1962, 9(7):2–3.

⁴¹ Ellis, "American Catholics and the Intellectual Life" (cit. n. 1). For a discussion of Ellis's article and its impact see Gleason, *Contending with Modernity*, pp. 287–297. On the critical commentary of the late 1950s see Patrick Carey, "Introduction," in *American Catholic Religious Thought: The Shaping of a Theological and Social Tradition*, ed. Carey (Milwaukee, Wis.: Marquette Univ. Press, 2004), pp. 11–100, esp. pp. 98–99; and Massa, *Anti-Catholicism in America* (cit. n. 5), Ch. 8.

small fraction of overall research dollars in most scientific fields. This situation began to change during the war, as the U.S. military turned to the universities to undertake various research efforts. By war's end, the federal government had become the chief financial backer of the nation's scientific research. The already unprecedented level of federal expenditures increased even more following the Soviet Union's 1957 launch of *Sputnik* and the subsequent national panic over the state of American science.⁴²

This fundamental restructuring of research funding proved a force for revolutionary change at several Catholic institutions. Before the emergence of substantial federal patronage, no Catholic schools had access to the kind of private funding for scientific research that had buoyed the major American universities. Most prewar Catholic research efforts were either tied directly to the church's considerable investment in medical education and hospitals or precariously dependent on the entrepreneurial fortunes of their directors—as, for instance, was the case with George Sperti's (1900–1991) Institutum Divi Thomae Foundation in Cincinnati, which was devoted primarily to cancer research.⁴³

By successfully petitioning the government for significant research dollars, schools such as Notre Dame, the Catholic University of America, Georgetown, and the University of Dayton were able greatly to enlarge or in some instances actually to initiate graduate science programs. As Philip Gleason has remarked, “graduate work in Catholic institutions entered a wholly new phase in the postwar era.” In fact, Catholics' enthusiasm for and commitment to science programs had intensified so drastically over the course of the 1950s that by 1959 Yancey found himself in the unfamiliar position of having to rebut “warnings” issued from various Catholic quarters “that ‘science is being overstressed’ and that we should not ‘go over board’ on science.”⁴⁴

Although Yancey believed that the guild had made some progress in achieving its first two goals—improving communication among Catholic scientists and enhancing Catholics' research efforts—he expressed less optimism regarding the third. In private correspondence with a disgruntled member, Yancey admitted that the guild had “fallen down in the objective of relating the Church's teachings to the findings of modern science.”⁴⁵ While Yancey never clearly articulated the source of his own disappointment with the guild's apologetic efforts, I think the AMG's failure in this area ultimately derived from both the organization's heavy involvement with Catholic higher education and the general

⁴² Even prior to World War II the federal government had spent a considerable amount of money on scientific research, but this money had generally funded “applied research in such fields as agricultural sciences, meteorology, geology, and conservation.” Outside of such areas federal patronage was quite limited. See Roger L. Geiger, *To Advance Knowledge: The Growth of American Research Universities* (New York: Oxford Univ. Press, 1986), pp. vii, 140–173, 255–264, on p. 255. On the later role of the federal government see Geiger, *Research and Relevant Knowledge: American Research Universities since World War II* (New York: Oxford Univ. Press, 1993): wartime funding is discussed on pp. viii, 13–35, 58–61, 92–93; post-*Sputnik* funding in Ch. 6, esp. pp. 165–166, 185–186.

⁴³ Lilly, “Research in the Catholic University” (cit. n. 19), pp. 4–5; and Heitmann, “Doing ‘True Science’” (cit. n. 7), pp. 717–721.

⁴⁴ Gleason, *Contending with Modernity*, pp. 215–226, on p. 220; and “Secretary's Column,” *Bulletin*, May 1959, 6(5):2. That Yancey was hardly satisfied with the science situation in Catholic institutions despite the improving attitude of administrators is evident in an article of his that appeared in the same issue of the *Bulletin*. Here Yancey claims that, outside of a few large universities, Catholic institutions continued to have underqualified and underpaid science teaching staffs. As a result of the poor quality of teaching, Yancey says, most students go into practical vocations rather than research science, and those who opt for pure research fare poorly. See Patrick H. Yancey, “Our Commitments and Resources for Scientific Education in Our Liberal Arts Colleges,” *ibid.*, pp. 1–2.

⁴⁵ The disgruntled AMG member was Charles Herzfeld, who is discussed in more detail below. For Yancey's letter to him see Yancey to Charles M. Herzfeld, 13 Nov. 1960, MUA.

intellectual discord that permeated the Catholic community in the latter half of the 1950s and throughout the 1960s.

Yancey had hoped that the guild would create an intellectually sophisticated apologetic for Catholic scientists working in non-Catholic institutions. Discussions of a “philosophico-scientific nature” held at guild meetings or appearing in the pages of the *Bulletin* could, he believed, form the basis for the needed apologetic arguments. The makeup of the guild’s membership frustrated the realization of the kind of defense of Catholicism Yancey envisioned, however.

The majority of the members, as even a cursory glance through the *Directory*’s pages reveals, worked in Catholic institutions where such an apologetic would not prove of any great service (see Tables 1 and 2 and Figure 3).⁴⁶ Developing a defense of Catholic teaching in light of the most recent scientific knowledge no doubt interested the bulk of the AMG membership. Yet for Catholics working in Catholic institutions the intellectual environment was wholly different than that for those working elsewhere, and the kinds of arguments that resonated with those ensconced within the world of Catholic higher education did not necessarily appeal to those in other situations.

To facilitate the process of establishing sound apologetics, Yancey steered the AMG into a working relationship with several Catholic organizations that devoted much of their activity to considering the relationship of religion and science. Such groups included the Institutum Divi Thomae Foundation, the Newman Association of Great Britain, the Scientific Secretariat of Pax Romana, and, most influentially, the Albertus Magnus Lyceum for Natural Science, which was staffed by members of the Dominican House of Philosophy located at River Forest, Illinois.⁴⁷

Table 1 Characteristics of Members Listed in 1958 *Directory* and 1959 *Supplement*

Total Membership 1121 (N)	Percentage of Total Membership	Formal Religious Vows (Percentage within group)
Religious Status		
Formal Religious Vows	39.8	100.0
No Formal Religious Vows	60.2	0.0
Gender		
Male	73.4	28.1
Female	26.6	72.1
Education		
PhDs	46.5	35.3
Masters	27.0	52.1
Graduate Students	13.0	39.7
Bachelors	8.3	34.4
Others	5.2	24.1
Affiliation		
Catholic Educational Institution	56.2	64.9
Non-Catholic Educational Institution	21.8	9.0
Industry	18.5	1.4
Unknown	3.6	30.0

⁴⁶ The membership lists used to construct Tables 1 and 2 were taken from the *Albertus Magnus Guild Directory* (1958), MUA; *Supplement to Directory of the Albertus Magnus Guild* (1959), MUA; and “Directory—1964,” *Bulletin*, Mar. 1964, 11(6):2–30.

⁴⁷ “The Institutum Divi Thomae Foundation,” *Catholic Sci. Notes*, 26 Oct. 1953, pp. 5–6; “Guild News,” *Bulletin*, 25 May 1954, 1(3):1; Patrick H. Yancey, “Pax Romana Congress and Spode House Conference,” *ibid.*, Oct. 1955, 2(4):1–2; “The Albertus Magnus Lyceum,” *ibid.*, p. 3; and “Action on Reports,” *ibid.*, Jan. 1957, 4(1):2.

Table 2 Characteristics of Members Listed in 1964 *Directory*

Total Membership 978 (N)	Percentage of Total Membership	Formal Religious Vows (Percentage within group)
Religious Status		
Formal Religious Vows	44.7	100.0
No Formal Religious Vows	55.3	0.0
Gender		
Male	62.2	28.8
Female	37.8	70.8
Education		
PhDs	50.4	45.2
Masters	28.2	54.3
Graduate Students	6.3	37.1
Bachelors	11.9	26.7
Others	3.2	32.3
Affiliation		
Catholic Educational Institution	58.0	71.3
Non-Catholic Educational Institution	17.9	10.3
Industry	20.7	2.0
Unknown	3.5	32.4

Until the years immediately following the Second Vatican Council, the lyceum, which was heavily infused by the spirit of the Scholastic Revival, dominated the guild's apologetic efforts. The Rev. William H. Kane, O.P. (1901–1970), who founded the organization in 1950, hoped that the lyceum would provide a forum for bringing scientists into dialogue with scholars from various humanistic disciplines such as history, sociology, and especially philosophy (see Figure 4). The ultimate purpose of such dialogue, in Kane's view, was to reestablish the theoretical unity of the natural sciences, which he believed had been lost during "the scientific crisis of the 17th century." For the most part, the lyceum's members consisted of Dominican friars who, like Kane, had advanced degrees in philosophy, one of the sciences, or medicine.⁴⁸

The lyceum's program reflected the tremendous confidence that imbued many involved with the Scholastic Revival, a confidence that Catholic critics in the 1950s began to characterize as "triumphalism" and "hubris." Like other Thomists, the lyceum's members did not consider the philosophy of St. Thomas Aquinas or other medieval scholastics as faultless systems, beyond the need for revision. Rather, they regarded scholasticism as the most complete manifestation of a transcendent *philosophia perennis* that the ancients had given rudimentary formulation and that the lyceum, in the light of modern science, now hoped to express more perfectly.⁴⁹

Yet among Thomistic thinkers the character of the relationship between philosophy and the modern sciences proved a point of contention, and the River Forest Thomists, as those

⁴⁸ William H. Kane, John D. Corcoran, Benedict M. Ashley, and Raymond J. Nogar, *Science in Synthesis: A Dialectical Approach to the Integration of the Physical and Natural Sciences* (River Forest, Ill.: Dominican College of St. Thomas Aquinas, 1953), front matter, pp. 7–17, on p. 4; James A. Weisheipl, O.P., "Introduction: The Dignity of Science," in *The Dignity of Science: Studies in the Philosophy of Science Presented to William Humbert Kane, O.P.*, ed. Weisheipl (Washington, D.C.: Thomist, 1961), pp. xvii–xxxiii; and Michael Browne, O.P., "Letter of the Master General," *Thomist*, Apr. 1961, 34(2):iii–vii. For a retrospective overview of the lyceum's work by one of its participants see Ashley, "The River Forest School and the Philosophy of Nature Today," in *Philosophy and the God of Abraham: Essays in Memory of James A. Weisheipl, O.P.*, ed. R. James Long (Toronto: Pontifical Institute of Mediaeval Studies, 1991), pp. 1–16.

⁴⁹ M. De Wulf, "Neo-Scholasticism," in *The Catholic Encyclopedia*, Vol. 10 (New York: Appleton, 1911), pp. 746–749.

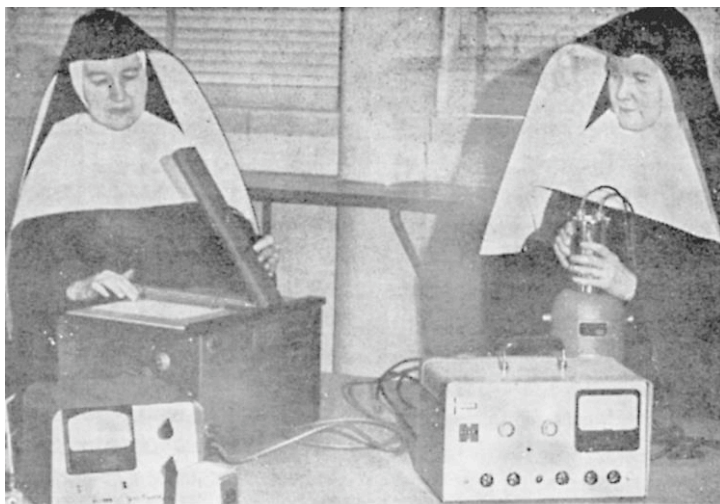


Figure 3. One group of members frequently pictured in the AMG Bulletin was women religious. As here, these women were often shown using scientific instruments.

associated with the lyceum came to be known within Catholic philosophical circles, adopted a somewhat extreme position. Certain Thomists, conceiving the philosophy of nature as an aspect of metaphysics, maintained that philosophy was completely independent of modern scientific developments. Jacques Maritain (1882–1973), arguably the most influential Thomist among American Catholics during the Scholastic Revival, rejected this view because he believed that the philosophy of nature necessarily preceded metaphysics in the order of knowledge. Maritain insisted that the philosophy of nature, while distinct from the modern natural sciences, needed to be constantly informed by them and that, in turn,



Figure 4. A 1962 image of William Kane (right), the founder of the Albertus Magnus Lyceum, with Hugh Taylor.

a properly constructed philosophy of nature would offer important theoretical insights to practicing research scientists.⁵⁰

Although respectful of Maritain and his arguments, the lyceum's Thomists believed that his distinction between a philosophy of nature, concerned chiefly with the ontological content of scientific findings, and the modern sciences, concerned chiefly with empirical data, falsely compartmentalized what was more properly understood to be a unified science into two separate disciplines. The Rev. Raymond J. Nogar, O.P. (1916–1967), a prominent member of the lyceum, summarized the central contention of the River Forest school:

Aristotelian physical theory is a univocal and essentially integrated physical system and formally extends to all physical knowledge however elaborated by highly refined investigative techniques. . . . The general principles of Aristotelian physical science are no longer regarded as philosophic (in the sense of being ontological) whose function is to judge of the validity of the conclusions of contemporary science; they be-

⁵⁰ Raymond J. Nogar, O.P., "Toward a Physical Theory," *New Scholasticism*, Oct. 1951, 25(4):397–438, esp. pp. 424–432; Weisheipl, "Introduction: The Dignity of Science" (cit. n. 48), pp. xxiv–xxviii; John M. Dunaway, *Jacques Maritain* (Boston: Twayne, 1978), Ch. 4; Gerald A. McCool, S.J., *From Unity to Pluralism: The Internal Evolution of Thomism* (New York: Fordham Univ. Press, 1989), pp. 136–139; and Ashley, "River Forest School" (cit. n. 48), pp. 3–6.

come dynamic directives for further application of investigative technique, vitally in touch with the very details of physical science.⁵¹

Whereas Maritain suggested that a scientifically informed Thomistic philosophy of nature provided certain “directive principles” for modern scientific theory, the lyceum’s adherents went much further, arguing that many of the problems plaguing contemporary scientific thought simply could not be overcome unless scientists adopted an Aristotelian theoretical frame to conduct their work. In short, they claimed that their philosophy was indispensable not only to a proper understanding of science but also to its practice.⁵²

The lyceum’s Thomists considered their own “qualitative” or “physical” approach to scientific theory as far more deserving of the appellation “science” than the exclusively “quantitative” theorizing of most modern scientists. In the Aristotelian tradition of natural philosophy to which the lyceum was devoted, “science” referred, as Kane pointed out, to “knowledge of the reasons or causes of things” that is both “certain” and “necessary.” Unless one discerned, through the use of discursive reason and intuition, a natural being’s “essence”—that is, its “nature” and “form”—and the “four causes” that explain its functioning and purpose, then, argued Kane, one’s scientific knowledge remained deficient.⁵³ The mathematical and mechanistic models that drove modern scientific thinking, the lyceum’s members believed, introduced—often needlessly—a level of abstraction from the human mind’s original sense perceptions that could produce only “hypothetical” and “contingent” knowledge.⁵⁴

Not all Catholic scientists warmly greeted the lyceum’s attempt to appropriate and reshape modern scientific knowledge within “the established Christian synthesis of traditional knowledge.”⁵⁵ Those attending the lyceum’s 1952 summer session acknowledged, at least implicitly, that some scientists questioned the value of addressing theoretical problems using neoscholastic philosophy, which—however popular with Catholics and their church’s hierarchy—had won the allegiance of only a small minority of modern philos-

⁵¹ Nogar, “Toward a Physical Theory,” pp. 436–437 (quotation), 426–427. See also William H. Kane, O.P., “Natural Philosophy and Science,” *Bulletin*, Dec. 1956, 3(5):3; Kane, *Some Comments on the Relations of the Sciences and Philosophy* (Washington, D.C.: Catholic Univ. America, 1952), pp. 4–9; and Ashley, “River Forest School,” pp. 6–7. In denying any formal distinction between the philosophy of nature and the modern sciences the lyceum looked to Fr. Aniceto Fernandez-Alonso, O.P. (d. 1981), as their intellectual inspiration. See Weisheipl, “Introduction: The Dignity of Science,” pp. xxviii–xxx.

⁵² Jacques Maritain, quoted in Dunaway, *Jacques Maritain* (cit. n. 50), p. 58. See also Kane *et al.*, *Science in Synthesis* (cit. n. 48), pp. 203–259. For a brief discussion of the debates within Thomism over how philosophy and modern science interact that endorses Maritain’s position rather than that of the River Forest Thomists see Joseph J. Sikora, “Philosophy of Nature and Natural Science from a Thomist Viewpoint,” *Thomist*, July 1957, 20(3):330–348. See also Vincent E. Smith’s summary of the various Thomistic positions in *Science and Philosophy* (Milwaukee, Wis.: Bruce, 1965), pp. 188–190; and Ernan McMullin’s discussion of the entire spectrum of philosophies of nature being considered in the 1960s in “Philosophies of Nature,” *New Scholast.*, 1969, 43:29–74.

⁵³ William H. Kane, O.P., “The Nature and Extent of Philosophy of Nature,” *Thomist*, Apr. 1944, 2(2):204–232, on pp. 207–208; Kane *et al.*, *Science in Synthesis*, pp. 76–79; Kane, “The Naturalistic Approach to Modern Science through Motion and Matter,” *Thomist*, Apr. 1956, 19(7):219–231, esp. pp. 222–224; and Kane, “Natural Philosophy and Science” (cit. n. 51), p. 3. For a useful introduction to Aristotle’s natural science see R. J. Hankinson, “Philosophy of Science,” in *The Cambridge Companion to Aristotle*, ed. Jonathan Barnes (Cambridge: Cambridge Univ. Press, 1995), pp. 109–139.

⁵⁴ Kane, “Nature and Extent of Philosophy of Nature,” pp. 207–210, 222–226; Kane, “Naturalistic Approach to Modern Science,” pp. 222, 231; Kane, “Natural Philosophy and Science,” p. 3; and Kane *et al.*, *Science in Synthesis*, pp. 74–76, 80–83, 201–203.

⁵⁵ The phrase “the established Christian synthesis of traditional knowledge” is taken from William A. Wallace, O.P., “Catholics and the Science Explosion,” *Catholic World*, Nov. 1964, 200:109–115. Wallace had treated many of the same themes that appeared in this article earlier in a sermon delivered to the Albertus Magnus Lyceum; see Wallace, “Science, Technology, and God,” *Bulletin*, Nov. 1961, 9(2):1–3.

ophers. During the session lyceum leaders felt compelled to refute the proposition that “religious bias . . . would seem to make the Lyceum’s discussions as suspect as would be those conducted on a scientific topic by a group of Marxists under Communist party directives.” Indeed, the lyceum’s firm commitment to a single philosophical school left adherents open to the charge that they merely upbraided modern scientific theory for its apparent conflicts with their own preconceived Aristotelian notions rather than engaging authentic theoretical difficulties. As Charles M. Herzfeld (b. 1926), a Catholic physicist who worked as an assistant director for the National Bureau of Standards, complained in a 1959 *Commonweal* article, the lyceum’s kind of scholasticism “makes a corpse out of science, leaving science no real autonomy, no method of its own, no spirit and, really, no name.”⁵⁶

Yancey and the AMG leadership had intended the guild’s philosophical discussions not only to buttress the faith of Catholic scientists working in secular institutions but also to allow these same scientists to “carry on an active ‘intellectual apostolate.’” In respect to such controversial areas of scientific research as nuclear power or weapons, human overpopulation, and genetic engineering, they urged Catholic scientists to undertake “Catholic Action” by advocating policies and research programs consistent with Christian morality.⁵⁷ Unfortunately, the guild’s kind of apologetics, a product of the intellectual world of Catholic higher education, had a quite limited appeal for Catholics working in secular institutions.

Consider the case of Charles Herzfeld, quoted above. A University of Chicago–trained physicist who not only served the National Bureau of Standards but also, shortly after his association with the AMG, was an administrator for the U.S. government’s Advanced Research Projects Agency, Herzfeld seemed an ideal candidate to carry on the guild’s form of Catholic Action. Yet he resigned from the AMG in October 1960, in part because he felt isolated in a group where science teachers from “small Catholic institutions” predominated and the few active research scientists were mostly persons much older than he. In addition, however, he expressed to Yancey his dissatisfaction with the guild’s policy of treating “the serious problem of the relation of science and Religion in [an] . . . extremely narrow [way].” Believing “the ‘River Forest’ approach” of relating the church’s teachings to the problems of modern science merely “propaganda for a particular point of view,” he found it of little use in his professional work. “Let me say unequivocally, and in complete simplicity of heart,” he stated bluntly in his letter of resignation, “that there is nothing in the Bulletin . . . which has the slightest relevance to the situation I am in, or which helps me in the process of discussion and dialogue which I am attempting. . . . I must say, reluctantly, that the Guild is not for me.”⁵⁸

⁵⁶ Kane *et al.*, *Science in Synthesis* (cit. n. 48), p. 28; and Charles M. Herzfeld, “Science and the Church,” *Commonweal*, 22 May 1959, 70(8):198–201, on p. 200. To the best of my knowledge, Karl Herzfeld and Charles Herzfeld are not related.

⁵⁷ Patrick H. Yancey, “Secretary’s Column,” *Bulletin*, Oct. 1957, 4(4):2. For more on the concept of an “intellectual apostolate” see Hugh Taylor, “The Apostolate in the Professions,” *ibid.*, Mar. 1955, 2(2):1, 2, 5; and Taylor, “The Young Graduate—From University to Life,” *ibid.*, Oct. 1955, 2(4):4–5. Regarding Catholic Action see, e.g., Peter R. Hodgson, “Moral Responsibility: The Catholic Scientist and His Work,” *ibid.*, Jan. 1956, 3(1):4; and Wallace, “Catholics and the Science Explosion” (cit. n. 55).

⁵⁸ Herzfeld to Yancey, undated; Yancey to Herzfeld, 5 Jan. 1960; Herzfeld to Yancey, 29 Oct. 1960; Yancey to Herzfeld, 13 Nov. 1960; and Herzfeld to Yancey, 15 Dec. 1960: MUA. For Herzfeld’s association with the Advanced Research Projects Agency see “Dr. Charles Herzfeld Appointed as Project Defender Coordinator,” *Aviation Week and Space Technology*, 2 Oct. 1961, 75(14):34.

THE END OF THE SCIENCE CRISIS AND THE AMG

During the 1960s the American Catholic Church experienced a period of unprecedented intellectual turmoil that proved fatal to the guild, which declined with astonishing speed. In 1963, after a decade of steady growth, the AMG leadership attempted several reforms—such as increased fees and additional staff support—to ensure their organization's long-term viability.⁵⁹ Despite these measures, the guild steadily hemorrhaged members in the years following the Second Vatican Council (1962–1965). By the end of the decade, the AMG's officers recognized that no reforms could preserve the guild; the necessary interest among Catholic scientists no longer existed. Throughout its final years, Yancey himself struggled valiantly to continue the society he had founded, but in vain. When Father Yancey, suffering from the effects of a paralytic stroke, died in 1969, the AMG died with him.

The guild waned, at least in part, because the Catholic scientific weakness that had contributed to the sense of crisis was dissipating. Catholic institutions, although still underproductive in the sciences relative to non-Catholic ones, were gradually improving their science departments, as the data on NSF fellowships suggested. Even more important than this institutional progress, the growth in Catholics' participation in the sciences at non-Catholic schools seemed to put the lie to the claim of Catholicism's inherent hostility to science. By 1970, Catholics made up one out of every five American graduate students and took up scientific careers at least as frequently as Protestants.⁶⁰ While such Catholic achievement undoubtedly made the AMG's goals appear less urgent, the dramatic intellectual reorientation of American Catholic higher education that the "great debate" effected made them look utterly irrelevant.

Yancey had sought to form the guild in order to increase the quantity and quality of scientific research performed by Catholics, and he pursued this goal with a larger aim in mind: apologetics. Founded during the Scholastic Revival's final years of ascendancy within the American church, the AMG partook fully of the revival's countercultural outlook, its hostility to "secular modernity." The guild's leaders wished to demonstrate to their co-religionists as well as to those antagonistic to Catholicism that scholars grounded in the "Christian philosophy" were capable of producing work equal to that of their worldly counterparts. They urged their members to participate as fully as possible in the regular science societies but to reject the spiritually unsound worldviews prevailing in them, advocating a "Catholic" worldview instead. Catholic scientists were to be in the "secular" world without being of it.

The guild's guarded interaction with the professional science societies in a sense mirrored that of Catholic higher education in general with the broader spectrum of American colleges and universities. Since the 1920s Catholic schools had come more and more to resemble non-Catholic ones organizationally, a process that accelerated greatly after World War II. But Catholic educators, who pursued institutional modernization in order to accomplish their own particular religious goals, had never accepted the rationale for the

⁵⁹ Frederick D. Rossini, "Lines from the President," *Bulletin*, May 1962, 9(8):1–2; Rossini, "Lines from the President," *ibid.*, Oct. 1964, 12(1):1, 4; Rossini, "Lines from the President," *ibid.*, Nov. 1964, 12(2):1–2; Patrick H. Yancey, S.J., "Report of the Executive Secretary 1964," *ibid.*, Jan. 1965, 12(4):2–3; Rossini, "Lines from the President," *ibid.*, Feb. 1965, 12(5):1; and Yancey, *To God through Science*, p. 338.

⁶⁰ Massa, *Anti-Catholicism in America* (cit. n. 5), p. 139; and Daniel J. Kevles, *The Physicists: The History of a Scientific Community in Modern America* (Cambridge, Mass.: Harvard Univ. Press, 1995), p. 388. On the NSF fellowship data see note 40, above.

modern university that prevailed among their non-Catholic colleagues.⁶¹ In fact, a chasm, manifested most obviously in the different roles assigned to research in non-Catholic as opposed to Catholic institutions, separated the self-understanding of most non-Catholic educators from that of their Catholic counterparts.

From the earliest years of the university movement in the late nineteenth century, the administrators of America's leading universities, none of which were Catholic, had unrereservedly embraced scientific research as one of the fundamental missions of their institutions. By the middle decades of the twentieth century, non-Catholic educational leaders had come to prize scientific research not only because of science's prestige in American society, or the funds successful science programs could acquire, but also because the pursuit of scientific knowledge was a goal eminently suited to their universities, which they regarded as pluralistic institutions open, at least theoretically, to every member of American society. Regardless of creed, all Americans could, they believed, welcome the dispassionate and unrestrained empirical investigation of natural phenomena as a public good.⁶²

Most Catholic administrators, however—at least until the sudden upsurge in Catholic self-questioning that followed the publication of Ellis's piece—viewed scientific research as at best of secondary importance to their schools. They had no desire to develop pluralistic institutions in service to the American public at large, and as a result science lacked the ideological appeal for them that it offered many non-Catholic educators. The fundamental mission of Catholic higher education was to provide future Catholic professionals with a sound religious and moral formation, to endow students with a uniquely Catholic outlook. In order to achieve this unabashedly sectarian mission, the construction of accredited science departments and the training of qualified science instructors became absolutely essential. Catholic science education thus began as an effort to address a practical need.

As the number of Catholic science programs rapidly expanded in the 1920s and 1930s, some of the scientists and educators involved with them began to express displeasure with the lack of attention given to research as an end in itself. Such dissatisfaction indicated that a research ethos of sorts, which displayed itself in such groups as the CRTS and the AMG, had developed among Catholic science educators.⁶³

Yet for most of these educators, and certainly for the whole of the guild's leadership, the desire to expand research never produced a spirit of opposition to the dominant religious mission of Catholic higher education. In a manner not unlike that of Robert M. Hutchins (1899–1977) of the University of Chicago, and similar critics within American education, Catholic science educators deplored the dominant tendency in American universities to isolate scientific research from the humanities and denude it of all reference to transcendent principles. The comments of the Rev. James A. Weisheipl, O.P. (1923–1984), a science historian and member of the Albertus Magnus Lyceum, on the movement in American science education toward a more narrowly technical pedagogical approach following the launch of *Sputnik* are revealing of the general attitude in guild circles:

⁶¹ See note 15, above.

⁶² Laurence R. Veysey, *The Emergence of the American University* (Chicago: Univ. Chicago Press, 1965), pp. 173–179, 256, 441; Marsden, *Soul of the American University* (cit. n. 6), pp. 296–301, 388–394, 400–404; and Reuben, *Making of the Modern University* (cit. n. 9), pp. 61–87.

⁶³ For the interesting, yet in some ways untypical, case study of Maclewane's work with the Jesuit Seismological Association and the research ethos it fostered see Geschwind, "Embracing Science and Research" (cit. n. 7), pp. 42–49.

The panic instilled by Sputnik I almost obliterated the vision and hope of wiser educators: the molding of a human being, whether he be a theoretician or a technician. Before Sputnik I many educators realized the inherent danger to society and to the individual of excessive specialization, which neglects history, literature, culture, sound philosophy, religion and even ordinary grammar. These educators tried to give potential scientists an appreciation of the real dignity of science through the history of science, the philosophy of science, or a study of the Great Books of mankind.⁶⁴

At the time Yancey founded the guild, probably the vast majority of Catholic science educators continued to believe in the supreme importance of Thomistic philosophy to the curriculum. The perennial philosophy supplied the spiritual grounding that all Catholics needed—even those who wished to become scientists.

When the “great debate” moved, as it quickly did, from a critique of the quality of Catholic scholarship to a critique of Thomistic hegemony within Catholic education, the AMG rapidly descended into intellectual confusion. The notion that Thomistic education itself might have been the root cause of Catholic weakness in scholarship was entirely foreign to the original thinking of the guild’s leadership, and such charges, when raised, divided its members.

In January 1959 an article by Walter J. Ong, one of the chief participants in Catholicism’s internal debates over scholarship, ran in the pages of the *Bulletin*, generating a response suggestive of the growing tensions within the AMG. In his piece, “The Catholic Church’s Interest in Knowledge and Research,” Ong insisted that, in order to cultivate knowledge more successfully or even properly to understand its relevance for the church, American Catholics needed to alter their approach to knowledge in a fundamental way. In his view, the Scholastic Revival’s foundational belief that medieval Catholicism’s intellectual synthesis held the key to solving modern philosophical problems was basically wrong.⁶⁵

Contrary to what Thomism implied, knowledge, argued Ong, does not consist of a static system that can simply be passed on from one generation of Catholics to the next. Echoing themes from the writings of the French Jesuit Pierre Teilhard de Chardin (1881–1955), he contended that American Catholic thinkers needed to realize the implications of the nineteenth-century “discovery of the fact of cosmic and intellectual evolution.” He wrote, “We know that the universe is in some sense developing, growing on the natural spiritual level.” Since God is ultimately the author of this development, Catholics have a “duty” to learn about it, facilitate it, and consider its significance for Catholic theology and philosophy. As Ong argued elsewhere, fulfilling this intellectual duty required Catholics to become more receptive to the authentic aspects of modern thought, however unacceptably tainted with “relativism” and “subjectivism” the overall cast of that thought might be. Rather than the “nostalgia” of the Scholastic Revival, he insisted, Catholicism needed to acquire a “technological humanism” capable of grasping the importance of the historical development of knowledge, and particularly scientific knowledge, to humanity’s spiritual condition.⁶⁶

⁶⁴ Weisheipl, “Introduction: The Dignity of Science” (cit. n. 48), p. xviii. More generally, see Marsden, *Soul of the American University* (cit. n. 6), pp. 375–380; and George E. DeBoer, *A History of Ideas in Science Education* (New York: Teachers College Press, 1991), Chs. 7, 8, esp. pp. 146–147.

⁶⁵ Walter J. Ong, S.J., “The Catholic Church’s Interest in Knowledge and Research,” *Bulletin*, Jan. 1959, 6(1):3–4.

⁶⁶ Ong, “Catholic Church’s Interest in Knowledge and Research,” pp. 3–4; and Walter J. Ong, S.J., *Frontiers in American Catholicism* (New York: Macmillan, 1957), pp. 102–103, 119.

Shortly after the appearance of Ong's article, the correspondence section of the *Bulletin* included a highly critical rejoinder by the Rev. Pierre Conway, O.P. (1915–2006), an educator sympathetic to the lyceum's philosophical outlook. Conway ridiculed Ong's sanguine confidence in "the inevitability of intellectual progress," a view he found irreconcilable with the obvious indifference if not outright hostility of modern philosophy to religion. He also noted that Ong "[cited] no authoritative statements from the Church . . . in support of any of his views" and that his disparagement of scholasticism clearly opposed the modern papacy's own endorsement of that philosophical tradition.⁶⁷

Evidently Conway was not the only *Bulletin* reader to have a strongly negative reaction to Ong's piece. In an unusual move, Yancey, who frequently expressed his desire to see the guild's newsletter used as a vehicle for intellectual discussion, inserted the announcement, at the conclusion of Ong's reply to Conway: "*This controversy is closed.*"⁶⁸ One suspects that he could see little purpose in drawing out a debate in which the two sides were so plainly talking past one another.

By the mid-1960s enthusiasm for Thomistic philosophy was on its way to becoming a minority sentiment among American Catholic intellectuals.⁶⁹ Textbook Thomism's stale philosophical platitudes and the eagerness with which some partisans of Thomism condemned opposing philosophical viewpoints as heretical departures from official church teaching fueled the charges of "formalism" and "authoritarianism" that now abounded against that philosophy.⁷⁰ Finding neoscholasticism more of an obstacle than an aid to addressing contemporary intellectual problems, many Catholics, encouraged by the Second Vatican Council's apparent acceptance of modernity, increasingly looked to enrich Catholic intellectual life by turning to sources outside of scholasticism and even outside of the church itself. Initially this turn against Thomism fed unbridled enthusiasm for the evolutionary mysticism of Teilhard, but in the end no single philosophical school assumed the position of dominance that Thomism once held over the American Catholic mind.⁷¹

For American Catholic higher education, the new irenic atmosphere of the 1960s ultimately led to an abandonment of its Thomistic curricula and the adoption of a research ethos largely indistinguishable from the one reigning at non-Catholic institutions. For the guild itself, this same atmosphere first produced ideological incoherence and eventually led to dissolution. Lacking the intellectual anchor of Thomism, the guild no longer had a clear philosophical position from which it could assist Catholic scientists' moral decision

⁶⁷ Pierre Conway, O.P., "Correspondence," *Bulletin*, Apr. 1959, 6(4):4. For evidence of Conway's sympathy with the lyceum see Benedict M. Ashley and Conway, *The Liberal Arts in St. Thomas Aquinas* (Washington, D.C.: Thomist, 1959); and Conway, *Principles of Education: A Thomistic Approach* (Washington, D.C.: Thomist, 1960).

⁶⁸ Ong, "Correspondence," *Bulletin*, Apr. 1959, 6(4):4.

⁶⁹ Halsey, *Survival of American Innocence* (cit. n. 13), p. 139.

⁷⁰ Thomas O'Dea's sociological analysis of Catholic intellectual life probably did the most to give these terms of abuse their currency. In the conclusion of his study, O'Dea listed five "basic characteristics" of the Catholic intellectual sphere that had contributed to Catholic intellectuals' sorry performance: "formalism," "authoritarianism," "clericalism," "moralism," and "defensiveness." See Thomas F. O'Dea, *American Catholic Dilemma* (New York: Sheed & Ward, 1958), Ch. 7.

⁷¹ Halsey, *Survival of American Innocence* (cit. n. 13), p. 176. For evidence of enthusiasm for Teilhard within the guild see Charles G. Wilber, "Pierre Teilhard de Chardin: A Biologist's Appraisal," *Bulletin*, Dec. 1963, 11(3):1–5, 11(4):1, 8–11; John D. Dwyer, "Evolution and Father Teilhard," *ibid.*, Dec. 1967, 15(3):1, 3; and Yancey, *To God through Science*, p. 309. For a particularly relevant and important Thomistic response to Teilhard's theology see the following works by the lyceum's Raymond J. Nogar, O.P.: "Toward an Improved Dialogue between Science and Theology," *Bulletin*, Feb. 1960, 7(2):1–3; "From the Fact of Evolution to the Philosophy of Evolutionism," *Thomist*, July 1961, 24(3):463–501; and *The Wisdom of Evolution: An Exploration into the Facts of Evolution in Relation to Christian Philosophy* (Garden City, N.Y.: Doubleday, 1963).

making, reconcile the teachings of the church with modern science, or pursue the lyceum's more ambitious goal of reforming the scientific enterprise from a Catholic perspective. Just as fatal to the guild as its intellectual difficulties was its loss of the Scholastic Revival's countercultural verve. Many of the guild's members no longer believed that Catholic scientists had a viewpoint substantially different from that of their "secular" colleagues that needed to be defended or advocated.⁷²

No single episode more clearly demonstrates the intellectual confusion that was penetrating the guild than the 1963 decision by its leaders, subsequently ratified by the membership, to change the wording of its three chief purposes as listed in its constitution. The original suggestion for the change had come from Bishop John J. Wright (1909–1979), a well-known intellectual among American Catholics, who since 1959 had served as the guild's honorary president. Influenced by the more irenic approach to modernity then being promoted at the Second Vatican Council, Wright believed it appropriate to alter the guild's three goals so that everywhere the words "Catholic scientists" appeared should instead simply read "Members." Explicitly opening the guild to all scientists, regardless of creed, was intended to defuse the charge of intellectual isolation and "ghettoism" being hurled at the AMG by some critics; however, it had the more obvious effect of highlighting the organization's growing loss of purpose. Practically the only goal the guild retained that could not be pursued in a regular science society was that of relating the church's teachings to the findings of science—and why anyone other than a "Catholic scientist" would be interested in this goal was a mystery left unanswered.⁷³

The Albertus Magnus Guild, though short lived, provides historians with an important case study for understanding the development of Catholic science education and the relationship between the American Catholic Church and the sciences. Because the guild existed during a period of tremendous change for both the American church and its institutions of higher education, those who interacted with it, whether as supporters or detractors, often had occasion to articulate opinions about Catholics' engagement with the sciences that in less turbulent times might have gone unsaid. How representative the guild's viewpoint truly was of Catholics working in the sciences during the mid-twentieth century is a question that we will be able to answer only with additional studies of the Catholic institutions and individuals involved with the sciences during this period.⁷⁴

Although Yancey and other AMG leaders maintained that religious belief should have

⁷² The 1965 remarks of Lawrence H. Baldinger, an associate dean of Notre Dame's College of Science who was then serving as the *Bulletin's* editor, are telling as to the changing mood among Catholic scientists. After noting that interest in guild activities at the 1964 AAAS meeting had dropped off considerably from that expressed in previous years, Baldinger confessed that "the aloofness of many Catholic scientists, both in the laity as well as in the religious groups, toward the Albertus Magnus Guild is disturbing." See "Editor's Column," *Bulletin*, Jan. 1965, 12(4):2.

⁷³ Frederick D. Rossini, "Lines from the President," *Bulletin*, Nov. 1963, 9(2):1. The guild's chief goals, now expanded to four in number, were as follows: "1. To serve as a means of contact among its Members, through Chapter meetings, national conventions, and the *Bulletin*; 2. To promote productive scholarship and appropriate participation in scientific activities by its Members; 3. To assist its Members in relating the findings of science to the teachings of the Church; 4. To promote the appropriate coupling of the findings of science with the needs of mankind throughout the world as made evident by the application of the natural law of God." See *ibid.*, p. 5. The fourth goal appears to have been added in an attempt to make the guild more comprehensible as an ecumenical organization. Non-Catholic members could help the guild advocate scientific work and uses of that work consistent with the natural law, which Thomism held to be evident to all human minds, even without the assistance of revelation.

⁷⁴ For instance, detailed historical treatments of major Catholic centers of scientific research, such as Notre Dame, Georgetown, or St. Louis University, or of important Catholic intellectual organizations, such as the international group Pax Romana, would very much help to contextualize the AMG case study.

no bearing on the practice of science in the laboratory—that in this sense there was no “Catholic science”—they did insist that “Catholic philosophy” should provide a guide for placing moral limits on the work of Catholic scientists and even in some sense direct their critical engagement with scientific theory. Despite the internal revolution that took place in the American church during the 1960s, the guild’s employment of scholastic philosophy helps illuminate some of the present debates among Catholic scientists over such controversial matters as human genetic engineering, stem cell research, and the intelligent design movement. Many Catholic scientists continue to look to natural philosophy to establish the limits of science—and in the case of intelligent design even to shape scientific theory—yet the authentic character of “Catholic philosophy” is a matter on which American Catholics no longer maintain a clear consensus.⁷⁵

⁷⁵ In 2005, a *New York Times* editorial by Christoph Cardinal Schönborn, archbishop of Vienna, intensified debates among Catholics over the validity of “intelligent design,” a theory that claims that science can demonstrate that evolution is not undirected or purposeless. Many readers of the editorial, Catholics and non-Catholics alike, interpreted Schönborn’s comments as endorsing intelligent design. Whether or not the cardinal intended to support this particular theory, the argument of his editorial clearly indicates his belief that neo-Darwinist evolutionary theories conflict with Catholic natural philosophy. For details on the intelligent design debate among Catholic intellectuals and scientists see Ronald Numbers’s concise summary in *The Creationists: From Scientific Creationism to Intelligent Design*, expanded ed. (Cambridge, Mass.: Harvard Univ. Press, 2006), pp. 395–396. Using natural law arguments, the Catholic hierarchy has taken a very fervent stand against the moral legitimacy of human embryonic stem cell research. At least some Catholic scientists in America and Europe have openly defied their church’s clerical leadership. For a discussion of the stem cell debate by a Catholic scientist who is sympathetic to the hierarchy’s position see Kevin T. Fitzgerald, S.J., “Human Embryonic Stem Cell Research: Ethics in the Face of Uncertainty,” in *God and the Embryo: Religious Voices on Stem Cells and Cloning*, ed. Brent Waters and Ronald Cole-Turner (Washington, D.C.: Georgetown Univ. Press, 2003), pp. 131–140.