

**Academic and Architectural
Modernization for Development:
Financial and Technical Assistance
to the University of Concepción,
Chile, 1956–1968**

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Abstract

The following research is part of my ongoing dissertation project, which examines the planning, design, and construction of university campuses vis-à-vis the intensification of mining and oil extraction in South America between 1945 and 1975. In this report, I offer a brief overview of the technical and financial assistance that the Ford Foundation (FF), the Rockefeller Foundation (RF), and the UN Special Fund (UNSF) gave to one of my case studies, the Universidad de Concepción (UdeC), located in mineral-rich Chile. Multiple holdings at the Rockefeller Archive Center (RAC) reveal that these organizations provided significant aid to the UdeC between 1956 and 1968—a critical period during which the technical and financial assistance programs of the US became entangled with a national developmentalist agenda that tied scientific and engineering education to economic development. The RAC holdings I explore are extremely useful in understanding the geopolitical and economic context that shaped these aid programs, the UdeC’s modernization efforts, and the agendas of the multiple actors involved in this process. The textual and visual documents I analyze also underscore the critical role that modern architecture played in all of this as an enabler of the academic reform and the economic transformation of the region, and as a persuasive signifier of “development.”

During the 1950s and 1960s, the technical and financial assistance that the Rockefeller Foundation (RF) and the Ford Foundation (FF) gave to the Universidad de Concepción (UdeC) converged with Chilean governmental programs that assigned an outsized role to scientific and engineering education in economic development. A report to the FF prepared by professors from the Institute of Agriculture of the University of Minnesota demonstrates that between 1957 and 1962—the initial years of RF and FF aid to the UdeC—the Chilean State increased exponentially its spending in agriculture and mining, the two pillars of the country’s economy.¹ Concurrently, the government increased its support of both national and private universities; and its funding of the UdeC more than quadrupled.² The UdeC also received money from the “Fund for University Construction and Research,” which the Chilean National Congress established through Law 11,575. This fund allowed seven select Chilean universities to build, furnish, and equip experimental stations, laboratories, and institutes of scientific and technological research.³ In part, this law was an effort to further boost Chile’s extractive activities—especially large-copper mining—and in part, it was an effort to promote industrialization.⁴ As the law clearly states, the ultimate goal of these research and education facilities should be “to improve the productivity of agriculture, industry, and mining and to promote prospecting and the rational exploitation of the country’s natural resources...”⁵

RF aid to the UdeC focused primarily on its School of Agriculture and Livestock in Chillán, which was part of a governmental project designed to improve agricultural productivity. The Rockefeller Foundation Records (RFR) provide insights into the interest that the US government had in these particular Chilean efforts during the Cold War. The Chilean Ministry of Agriculture wanted to increase the number of agricultural engineers to meet the country’s needs.⁶ In January 1951, the US government began to provide technical assistance to the ministry through the *Departamento Técnico Inter-Americano de Cooperación Agrícola* (DTICA).⁷ In September 1954, DTICA established the Plan Chillán project in cooperation with the UdeC, the University of Chile, and the Food and Agriculture Organization of the United Nations (FAO). Described by the

University of Minnesota (UM) professors as an “extensive experiment in agricultural extension, training, and education,” the Plan Chillán sought to make research and technological advances in agriculture reach Chilean farms by training supporting technicians, farmers, and farm laborers. In December of the same year, the UdeC founded its School of Agriculture and Livestock (or School of Agronomy) at Chillán, which would become the “core” of a national agricultural education and training center.⁸ The University of California (UC) would help the UdeC organize the school under the sponsorship of the International Cooperation Administration (ICA).⁹

RF support for the UdeC-Chillán school seems to have begun at the behest of the US government. In early October 1956, Albion Patterson, the representative of the Point Four Program in Chile, asked the RF to consider giving a small travel grant to José Suárez Fanjul, the dean of the school. Suárez was to accompany UdeC President David Stitchkin, whom ICA had invited to visit the UC and “other private and government organizations,” including the FF and the RF.¹⁰ A few days after, Lyall Peterson, program officer of the Institute of Inter-American Affairs’s Mission to Chile, wrote to a RF official asking for “courtesies” for Stitchkin and Suárez during their visit.¹¹ One month later, the RF approved the travel grant.¹²

The RF aid was used to improve the School of Agriculture’s new facilities by providing them with critical supplies, equipment, and study materials. Some of the RF grants were approved even *before* the school had a space in which to function. Declaring himself aware of the RF’s interest in “contributing to the improvement of the production of food in Latin America,” Suárez wrote to J. George Harrar in late November 1956 to request assistance to establish the school.¹³ In late December, the RF approved US\$ 10,000 grant (GA AGR 5669) to equip its laboratories of soils, plant pathology, economic entomology, and animal nutrition.¹⁴ In the next two years, the RF gave two additional grants totaling US\$ 18,000 (GA AGR 58119 & GA AGR 5706), which the school used to purchase laboratory equipment, supplies, and books and specialized periodicals for its library.¹⁵ Yet, the school did not even have a site until April 1958, when the government ceded the Fundo Tres Higueras.¹⁶ In 1958, the

school began construction work to adapt this agricultural estate with funds from the USAID program in Chile.¹⁷ Some of the laboratory and library material that the RF donated arrived to Chillán in October 1958, when the construction of laboratories and greenhouses was still underway.¹⁸ Additionally, in 1962, the RF gave the school a large grant of US\$85,000 (RF62065) to purchase “field and laboratory equipment, a greenhouse, and library materials.”¹⁹ These philanthropic efforts would simultaneously benefit the RF’s own “agronomists in wheat and forage,” who would take advantage of the new facilities.²⁰

Several photographs in the records of the Rockefeller Foundation depict the modern spaces for learning and agricultural research that the UdeC completed with aid from the RF. The UdeC probably sent these photographs to prove it had spent the funds appropriately.²¹ One striking photograph emphasizes the modernity of one of the new laboratory buildings.²² The streamlined building floats effortlessly over a landscape of wildflowers, as if it had conquered the native landscape with its scientific prowess. Photographs of the library show well-illuminated rooms furnished with floor-to-ceiling shelving, well stocked with carefully arranged books and periodicals.²³ These images demonstrate that the students are already getting benefits from the RF donations, as they are shown perusing the many resources now available to them or sitting by tables, immersed in focused reading. Another photograph records expert consulting—Dr. L. D. Leach, a visiting professor from the University of California, sits in front of a microscope at the Laboratory of Vegetal Pathology.²⁴ Most of the photographs emphasize the use of modern laboratory and field equipment in research and experimental work, such as the one that shows members of the Office of Special Studies threshing a wheat crop with a large machine.²⁵

The Ford Foundation concentrated instead on the threefold modernization program that the UdeC implemented in Concepción, which involved radical academic, administrative, and architectural reforms, and began with the reorganization of science teaching. Between 1960 and 1968, the FF gave the UdeC a total of \$1,533,000 for this purpose.²⁶ Not long after Stitchkin returned from the US in late 1956, the UdeC commissioned UNESCO expert Rudolph Atcon to craft an academic reform plan.²⁷ Atcon proposed an “integrated”

university based on four Central Institutes of Science (CIS)—Chemistry, Mathematics, Biology, and Physics. The UdeC Honorable Board of Directors (HBD) and University Council promptly approved Atcon’s proposal, creating the CIS in May 1959.²⁸

FF aid was instrumental in helping the UdeC implement its modernizing agenda and in getting the CIS well established.²⁹ Although both ICA and UNESCO had provided technical assistance to the UdeC to support Atcon’s planning work, the UdeC needed additional financial and technical support to implement it.³⁰ The FF gave two related grants to the UdeC: Grant 60-213 (Phase I) and Grant 64-442 (Phase II).³¹ Grant 60-213, approved on April 29, 1960, gave the UdeC US\$500,000 to begin its “extensive academic and administrative reforms.”³² In the academic field, this amounted to establishing and developing the CIS.³³

As with the RF, the US government may have influenced the FF’s initial decision to grant aid to the UdeC. Christian Herter, the US secretary of state, knew about and was interested in the UdeC’s modernization efforts.³⁴ In September 1959, Louis G. Sleeper, the university projects coordinator of the US Operations Mission to Chile (USOM), wrote to Alfred C. Wolf, the FF program director for Latin America and the Caribbean, to inform him about the financial and technical assistance that the US government was providing to seven Chilean universities as part of the Technological Development Project, which had the same economic goals as Law 11,575.³⁵ It is worth mentioning here that the US deployed this type of assistance during the Cold War period to stave off communism and strengthen its geopolitical position.³⁶

Most of FF Grant 60-213 was devoted to technical assistance and the training of UdeC faculty and students. The advisors that the FF sent to the UdeC orchestrated the recruitment of several professors from US universities to guide the institution’s academic reform.³⁷ Bringing visiting professors represented additional expenses for the university, which typically financed their stay.³⁸ Grant 60-213 also covered sending UdeC professors abroad for specialized training; ³⁹ however, it initially prioritized the recruitment of visiting

professors.⁴⁰ After Frank Verbrugge, the associate dean of the UM Institute of Technology, questioned this in September 1963, the FF reallocated the funds to increase the amount available for UdeC faculty training and to introduce a fellowship program for promising incoming students.⁴¹ In the end, most of the funds—US\$ 225,895.89—were spent on scholarships for UdeC faculty and students, followed by US\$ 134,696.90 for visiting professors and consultants.⁴² Thanks to Grant 60-213, more than thirty UdeC professors received training abroad and eight visiting professors came, two of which served as CIS directors.⁴³

Also in April 1964, the FF increased its support of the UdeC with Grant 64-442. In September 1963, Verbrugge had also advocated for the assignment of a “sponsoring university” to help the UdeC.⁴⁴ In March 1964, the UM sent a mission to Concepción.⁴⁵ Verbrugge and the rest of his team proposed a “cooperative program” that resulted in Grant 64-442, which would begin in August 1964 and run for three years.⁴⁶ Grant 64-442 gave an additional US\$ 782,600 to continue Phase I and help the UdeC improve its “public services.”⁴⁷ The grant covered scholarships to UdeC faculty and staff for training abroad, visiting professors from the UM, and assistance with the purchase of equipment and books.⁴⁸ It also covered the reorganization of the UdeC’s central administration and the establishment of new central institutes in the social sciences and humanities.⁴⁹ However, its most celebrated aspect was the establishment of a centralized library system.⁵⁰

Several FFR holdings demonstrate that the UdeC was also aggressively seeking aid to expand and modernize its engineering program during this period, which was of great interest to multiple foreign and domestic actors. In late December 1960, the UN Special Fund (UNSF) granted US\$ 1,052,127 “for buildings and engineering development.”⁵¹ This grant reflected the multilateral organization’s more “pragmatic” approach to “development problems,” which restricted aid to applied engineering in lieu of basic science.⁵² The UdeC, which was very invested in the reorganization of its engineering programs, matched the grant with US\$ 833,571.⁵³ By 1968, the university’s engineering programs had

received additional funding that brought the total amount of foreign aid to US\$2,716,100.⁵⁴

The expansion and modernization of the UdeC's chemistry and engineering programs would also serve the Chilean government's developmentalist economic agenda well. It would provide a specialized labor force and expert consulting to both public and private companies. In late 1959, Jorge Alessandri Rodríguez, the president of the Republic, advocated for the UdeC with Paul Hoffmann, the director of the UNSF, while reassuring Stitchkin and telling him that he considered the university's modernization important for the "development of Chile."⁵⁵ The reorganization of chemistry and engineering teaching at the UdeC is linked to the opening of the Huachipato Steel Plant in the nearby port of Talcahuano in 1950. The state-owned steelworks fit very well the government's paradigm of industrialization by taking advantage of the country's abundant raw materials, in this case, iron ore and coal.⁵⁶ However, Chile lacked the variety of skilled technicians and engineers needed to run the plant.⁵⁷ At this time, engineering at the UdeC was "all chemical engineering."⁵⁸ The university responded to this situation by making several changes. In 1950—the same year that Huachipato opened—the HBD decided to erect the Chemical Technologies Building, a laboratory building that would house the Institute of Technological Research (ITR).⁵⁹ This institute would offer consulting services to individuals, private companies, and governmental organizations while training students in subjects important to industry.⁶⁰ Furthermore, in 1956 the UdeC created the Polytechnic Institute to "serve the industries of the region," and decided to expand its School of Chemical Engineering to offer training in mechanical, civil, and mining engineering.⁶¹ The "pragmatic" UNSF grant would bolster these efforts by helping with the development of the ITR and the Department of Mechanical Engineering.⁶² However, even the FF-supported CIS—which were devoted to basic science—would become useful, since they would provide "horizontal instruction" to the professional schools.⁶³ By 1968, both the steelworks and the expanded university had helped to transform the Greater Concepción Region into a developmentalist growth pole specialized in steel and petrochemicals.⁶⁴

Several holdings in the RFR and FFR reveal the critical role that the university's architectural reform played in all of this. The UdeC leadership considered that having modern, functional, and well-equipped buildings was critical to the success of both the academic reform and the developmentalist economic agenda that underpinned it.⁶⁵ The CIS needed "separate" facilities from those of the professional schools.⁶⁶ In early 1957, the UdeC hired renowned Chilean architect Emilio Duhart Harosteguy to design a new master plan to expand the university-city, which he finished in 1958. In addition to erecting the Chemical Technologies Building (1952–1959), the UdeC built two new buildings, also designed by Duhart—the Central Institute of Chemistry and the School of Engineering (1958–1961). By attaching the Central Institute of Chemistry to the existing building of the School of Chemical Engineering, Duhart created a huge multi-volume complex that housed three of the central institutes, the Institutes of Chemistry, Mathematics, and Physics.⁶⁷ In addition, the UdeC erected the Mechanical Technologies Building (1961–1968), which provided laboratories and classrooms for the new engineering departments, and the Central Library (1967–1971).

Just as the RF did in the case of the Chillán school, the FF and the UNSF did not fund the UdeC's architectural reform directly.⁶⁸ Rather, the sponsoring organizations helped to make the architecture operational by financing the purchase of essential scientific equipment and/or study material. The final financial report of Grant 60-213 shows that the FF donated US\$ 96,897.00 for library materials and services and US\$ 42,510.21 for laboratory and teaching equipment.⁶⁹ With these funds, the UdeC was able to purchase major items such as nuclear counting equipment and an infrared spectrometer for the Central Institute of Chemistry.⁷⁰ By 1963, the Institute had instructional chemistry laboratories that were, in Verbrugge's opinion, "excellent" and "superior" to those existing in many US undergraduate programs.⁷¹ Similarly, the UdeC used a large part of the UNSF grant to acquire equipment for the Mechanical Technologies Building.⁷² By accepting these grants, the UdeC committed itself to big economic investments, since it had to pay for the construction of most of these buildings.⁷³

Several photographs in the FFR and RFR collections provide a visual record of the architectural development of the Concepción campus. These images underscore the important role that architecture played during the application to and the implementation of the aid programs. The university likely sent these images to prove that it was worthy of receiving aid. One group of photographs depicts the older side of the campus, which architect Karl H. Brunner designed in 1931 as the “first university-city” of Latin America.⁷⁴ These images present the campus as a peaceful, ordered environment conducive to learning and reflection. They show its boulevards, shaped by rationalist buildings and mature trees, and offer glimpses of outdoor art pieces that served as markers of legacy and prestige—the allegorical bas-relief that decorates the Arch of Medicine and the classicist sculptures that populate the gardens. Several photographs feature prominently the white belltower, which was inspired by UC-Berkeley’s Sather Tower.⁷⁵ For a US audience, this would have begged comparisons with and perhaps suggested a certain kinship to the well-known US institution. The ensemble of architectural, landscape, and artistic elements recorded in these photographs projected the image that the UdeC was a reputable, well-established institution.

Other photographs in the RFR and FFR collections focus on the modern architecture of the university-city. They seem to argue that the university was spending the grant funds in an appropriate manner and was fulfilling its obligation of getting the campus physically ready to support the new academic activities. A remarkable photographic album that Stitchkin gave to Harrar in June 1961 juxtaposes the spaces and elements of the traditional and the modern campus, underscoring the institution’s extraordinary architectural evolution.⁷⁶ A group of photographs highlights the construction of staff and student housing, which was critical for the university’s expansion.⁷⁷ One image offers a glimpse of the recently completed Chemical Technologies Building and the steel skeletons of the Central Institute of Chemistry and School of Engineering, still under construction.⁷⁸ Other photographs show the interior of the new buildings with the learning equipment already in use.⁷⁹ The photographs of the Central Institute of Chemistry laboratories are especially significant, given that this building was destroyed in 2010.⁸⁰ A few of these photographs are also valuable

as samples of the work of photographer Maria Stallforth, whom the UdeC hired in 1959 very likely to bolster its grant applications.⁸¹ Certainly, all these photographs presented the modern architecture of the campus as a marker of “progress.” Wolf certainly perceived its importance when he listed the fact that the CIS buildings were coming along as one of the factors that made the UdeC worthy of receiving FF aid.⁸²

To conclude, the RFR and FFR provide extensive textual and visual documentation that sheds light on the UdeC’s modernization efforts in the 1950s and 1960s, the geopolitical and economic context that shaped them, and the—sometimes divergent—agendas of the multiple actors involved in this process. Furthermore, these holdings underscore the critical role that modern architecture played in all of this as an enabler of the academic reform and the regional economic transformation, as well as a persuasive signifier of “development.” The inclusion of photographs in the collections also demonstrates the importance of photography as a medium to support grant application and reporting. Although the written narratives certainly provided a myriad facts and details, a single image could facilitate instant grasp to those members of the sponsoring institutions who had not been able to visit the UdeC facilities in person. Because of their reputation as indexical prints of reality, these photographs were perhaps more difficult to dismiss than written accounts. Read together, all these textual and visual documents paint a clear picture of the radical turn towards the scientific and the technological that the institution took in 1956, with the hope of becoming a leading higher-education institution that would help Chile insert itself into the so-called developed world.

Note: All translations to English from Spanish documents are my own, unless otherwise noted.

¹ Government spending in agriculture grew from 1.1% in 1957 to 3.2% in 1962, and spending in mining from 0.1% in 1957 to 1.7% in 1962. S.O. Berg, L.E. Hanson, W.P. Martin, “Chilean Agriculture: A Report on Chilean Agriculture and Agricultural Education to the Ford Foundation,” Nov. 1963, p. 131, Box 4, Ford Foundation Records (hereafter cited as FFR), International Division, Latin America and the Caribbean, Jamaica, and Mexico City Field Office Files, Series III, Rockefeller Archive Center (hereafter cited as RAC). Chile’s binary economy has been based on agriculture and a strong mining export sector. See Table 1.2 in: Luis Bértola and

José Antonio Ocampo, *The Economic Development of Latin America since Independence*, First edition (Oxford: Oxford University Press, 2012), 13.

² State funding of the UdeC increased from 693,429 escudos in 1958 to 3,201,465 escudos in 1962. Berg et al, “Chilean Agriculture,” p. 59, 132, box 4, FFR, International Division, Latin America and the Caribbean, Jamaica, and Mexico City Field Office Files, Series III, RAC.

³ Law 11,575 stipulated that the Fund for University Construction and Research would receive 0.5% of all of Chile’s direct and indirect taxes, customs, and export duties for 20 years (1956–1976). Ministerio de Hacienda (Chile), “Ley 11575,” August 13, 1954, Biblioteca del Congreso Nacional de Chile (online), <https://www.bcn.cl/leychile/navegar?idNorma=26714>, accessed September 12, 2022.

⁴ Since the mid-nineteenth century, Chile had been heavily dependent on copper exports. Between 1945 and 1965, the subsidiaries of two US-based companies—Anaconda Copper Mining Company and Kennecott Copper Corporation—generated 6–8% of the country’s gross income, 15–30% of its tax income, and 50–60% of its exports. Eric N. Baklanoff, “International Taxation and Mineral Development: The Political Economy of Chile’s ‘La Gran Minería de Cobre,’” *Proceedings of the Annual Conference on Taxation under the Auspices of the National Tax Association* 58 (1965): 328, 331–32; By the mid-1970s, mining produced 12%–15% of the gross national product and represented almost 90% of the foreign trade. Alexander Sutulov, *Chilean Mining* (Santiago, Chile: Mining and Metallurgical Research Center, 1978), 141.

⁵ Ministerio de Hacienda (Chile), “Ley 11575,” August 13, 1954, Biblioteca del Congreso Nacional de Chile (online), <https://www.bcn.cl/leychile/navegar?idNorma=26714>, accessed August 18, 2022.

⁶ José Suárez to J. George Harrar, November 26, 1956, box 26, folder 223, Rockefeller Foundation Records (hereafter cited as RFR), Projects, SG 1.2, Series 300, Subseries 309, RAC.

⁷ Berg et al, “Chilean Agriculture,” p. 32, box 4, FFR, International Division, Latin America and the Caribbean, Jamaica, and Mexico City Field Office Files, Series III, RAC.

⁸ “Actas del Honorable Directorio,” Universidad de Concepción (Minutes of the Honorable Board of Directors of the University of Concepción, hereafter cited as AHD-UdeC), January 6 and 29, 1958 sessions, Archivo de la Vicerrectoría, Universidad de Concepción (hereafter cited as AV-UdeC); Berg et al, “Chilean Agriculture,” p. 32, box 4, FFR, International Division, Latin America and the Caribbean, Jamaica, and Mexico City Field Office Files, Series III, RAC. The UdeC-Chillán school would focus on agronomy, animal husbandry, farm mechanization, agricultural economics, and farm management. José Suárez to J. George Harrar, November 26, 1956, box 26, folder 223, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

⁹ Lyall Peterson to Joseph Rupert, October 8, 1956, box 8, folder 52, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

¹⁰ Kenneth Wernimont to Joseph A. Rupert, October 2, 1956, and Lyall Peterson to Joseph Rupert, October 8, 1956, box 8, folder 52, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC. According to the itinerary attached to the latter document, the trip was to take place between October 14 and November 18, 1956. Stitchkin and Suárez must have visited the RF between November 8–17, during their stay in New York. It was Patterson who relayed ICA’s invitation to Stitchkin. AHD-UdeC, October 3, 1956, AV-UdeC.

¹¹ Lyall Peterson to Joseph Rupert, October 8, 1956, box 8, folder 52, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC. According to the itinerary attached to this letter, Suárez and Stitchkin would have traveled to the US between October 14 and November 18 and would have visited the RF and the FF during their stay in New York between November 8 and 17.

¹² This travel grant, which the RF approved on November 8, 1956, amounted to US\$ 450. Rockefeller Foundation, “GA AGR 5605, Allocation No. 3. Agriculture–Education,” November 8, 1956, box 8, folder 52, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

¹³ José Suárez to J. George Harrar, November 26, 1956, box 26, folder 223, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

¹⁴ Rockefeller Foundation, “GA AGR 5669, Grant in Aid to the University of Concepcion, Chile, for the use of the Faculty of Agronomy in purchasing laboratory equipment and supplies,” December 28, 1956, box 26, folder 223, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

¹⁵ Rockefeller Foundation, “TF 62371, University of Concepción Faculty of Agronomy,” June 22, 1962, box 26, folder 223, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC; John J. McKelvey to José Suárez F., April 4, 1957, José Suárez F. to John J. McKelvey, April 17, 1957, and William A. Heins to José Suárez F., May 6, 1957, box 26, folder 228, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

¹⁶ AHD-UdeC, April 7, 1958 session, AV-UdeC.

¹⁷ Rockefeller Foundation, “TF 62371, University of Concepción Faculty of Agronomy,” June 22, 1962, box 26, folder 223, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC; AHD-UdeC, June 16, 1958 session, AV-UdeC.

¹⁸ José Suárez Fanjul to Joseph Rupert, October 24, 1958, box 26, folder 228, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

¹⁹ Rockefeller Foundation, “TF 62371, University of Concepción Faculty of Agronomy,” June 22, 1962, box 26, folder 223, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC; AHD-UdeC, June 16, 1958 session, AV-UdeC.

²⁰ Joseph A. Rupert to J. George Harrar, January 18, 1957, box 26, folder 228, RFR, Projects, SG 1.2, Series 300, Subseries 309, RAC.

²¹ The captions of these photographs, which are in Spanish, suggest they were sent by the UdeC.

²² “Laboratorios de la Escuela de Agronomía en Chillán,” n.d., folder 1542, box 72, RFR, Photographs, Series 309, RAC.

²³ See for example the photographs of the library in folder 1549, box 72, RFR, Photographs, Series 309, and in folder 281, box 6, RFR, General Correspondence, Photographs, RG 2, 1958-1990, Series 309, RAC.

²⁴ “Dr. L. D. Leach, profesor visitante, Universidad de California, en el Laboratorio de Patología Vegetal,” n.d., folder 1549, box 72, RFR, Photographs, Series 309, RAC.

²⁵ “Trilla de ensayos de trigo: Trabajo de la Oficina de Estudios Especiales,” n.d., folder 1549, box 72, RFR, Photographs, Series 309, RAC.

²⁶ Reuben Frodin to John P. Netherton, memorandum, October 9, 1968, reel 2616, section “University Of Concepcion (06000213),” FFR, Grants U-Z, RAC.

²⁷ Jaime García Molina, *El campus de la Universidad de Concepción: Su desarrollo urbanístico y arquitectónico* (Concepción, Chile: Ed. Univ., 1994), 8, 71.

²⁸ [UdeC], “Ford Foundation Grant to Basic Science Institutes of the University of Concepción: Final Report,” n.d. [ca. 1967], and Nita Rous Manitzas, “University of Concepción, Reorganization of Science and Mathematics Programs (60-213) – Progress Report as of May 31, 1964,” June 11, 1964, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

²⁹ J. R. Whinnery to Reuben Frodin, September 25, 1968, “Conclusions and Recommendations,” report attached to letter from Simon Gonzalez to Reuben Frodin, September 20, 1968, and [UdeC], “Ford Foundation Grant to Basic Science Institutes of the University of Concepción: Final Report,” n.d. [ca. 1967], reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC; Frank Verbrugge, “The Central Institutes of Science at the University of Concepción: A progress report (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

³⁰ UNESCO provided Atcon’s services and ICA sent an expert on science education from the National Academy of Sciences plus a team of four US professors. Alfred C. Wolf, memorandum on the University of Concepción’s reorganization of science and mathematics Programs, Feb. 17, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC; Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

³¹ Reuben Frodin to John P. Netherton, memorandum, October 9, 1968, reel 2616, section “University Of Concepcion (06000213),” FFR, Grants U-Z, RAC.

³² Ford Foundation, “Program Action No. 60-213,” May 10, 1960, and “Conclusions and Recommendations,” report attached to letter from Simon González to Reuben Frodin, September 20, 1968, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. Although Grant 60-213 was originally intended to last three-years, in August 1961 the FF extended it until May 9, 1964. This was in consideration of the earthquakes of May 1960, which had devastated the UdeC’s campuses and had delayed the implementation of the CIS program. David Stitchkin B. to Mr. Nicely, August 4, 1961, request of grant extension, and Robert S. Wickham to Rector David Stitchkin B., August 22, 1961, notification of grant extension, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. In May 1964, since only US\$ 357,000 had been disbursed and the UdeC had “reassessed its needs,” the FF agreed to modify the grant and further extend it until May 10, 1966. Ignacio González Ginouves to Harry Wilhelm, Dec. 5, 1963, and Ford Foundation, “Modification in Terms of Program Action No. 60-213 (Modification No. 744),” May 11, 1964, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

³³ Secretary of the Ford Foundation to David Stitchkin B., May 10, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

³⁴ Stitchkin was surprised to find out that Herter knew about the UdeC’s plans during a conversation they had in Santiago in early 1960. Second letter from David Stitchkin B. to Alfred

C. Wolf, March 3, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

³⁵ Louis G. Sleeper to Alfred C. Wolf, memorandum on the Technological Development Project, Sept. 16, 1959, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

³⁶ Gustavo Esteva, “Development,” in *The Development Dictionary a Guide to Knowledge as Power*, ed. Wolfgang Sachs (New York: Zed Books, 2010), 1–3.

³⁷ For example, DeForest L. Trautman, FF Program Associate in science and engineering, proposed to hire professor Lewis Buck, the President of the University of Pittsburgh’s Department of Mechanical Engineering, to advise on the organization and curriculum of an analogous program at the UdeC. César Fighetti to DeForest L. Trautman, August 12, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. Trautman’s role in the FF is listed in: Ford Foundation, “The Ford Foundation Annual Report | October 1, 1959–September 30, 1960” (New York, 1960), <https://www.fordfoundation.org/media/2421/1960-annual-report.pdf>. In 1964, the UdeC hired Trautman as a consultant to help reorganize studies in engineering in connection with a grant it received from the UN Special Fund in December 1960. AHD-UdeC, December 21, 1960 and May 20, 1964 sessions, AV-UdeC.

³⁸ In early 1960, the UdeC began renting an entire floor of a building located on the city’s main square to provide furnished apartments to the visiting professors. David Stitchkin B. to Alfred C. Wolf, March 3, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. The FF declined to finance Buck’s stay in Concepción. DeForest Trautman to Hugo Trucco, August 31, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

³⁹ “Conclusions and Recommendations,” report attached to letter from Simon González to Reuben Frodin, September 20, 1968, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁴⁰ About half of the grant, or US\$ 250,000, was allocated to this purpose, yet only US\$ 60,000 was earmarked for sending UdeC faculty abroad. Harry E. Wilhelm to Mr. Verne S. Atwater, “Request for modification of grant, University of Concepción, Sciences and Mathematics (60-213),” memorandum, April 7, 1964, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁴¹ Verbrugge observed that the grant did not provide sufficient funds for advanced training for the UdeC faculty. Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC. In April 1964, the FF increased the amount for UdeC faculty training to US\$ 208,000. Harry E. Wilhelm to Mr. Verne S. Atwater, “Request for modification of grant, University of Concepción, Sciences and Mathematics (60-213),” memorandum, April 7, 1964, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁴² General Treasurer’s Office, UdeC, “Final Financial Report,” April 3, 1970, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁴³ Dr. Lewis Butler (from Alfred University) was the Director of the Central Institute of Mathematics until 1963, and Dr. Robert Howard (from the University of Oklahoma) was the Director of the Central Institute of Physics from 1962 to 1964. [UdeC], “Ford Foundation Grant

to Basic Science Institutes of the University of Concepción: Final Report,” n.d. (ca. 1967), reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁴⁴ Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁴⁵ This mission was integrated by Verbrugge, Will M. Myers, Dean of International Programs, and Errett Weir McDiarmid, Professor of Library Science. Francis M. Boddy, James M. Kingsley, E. W. McDiarmid, and H. T. Morse, “Report of visit to the University of Concepcion, Chile (Reports 000110),” January 1965, box 6, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁴⁶ Fernando Rodríguez Alonso and Charles W. Harrington, “The University of Concepción Library: Progress Made During the Years of the University of Minnesota-University of Concepcion Cooperative Program, 1964-1968 (Reports 007894),” August 15, 1968, box 338, FFR, Catalogued Reports, Reports 6262-9286, RAC. Verbrugge, Myers, and McDiarmid proposed a cooperative program to “strengthen the facilities and curricula, both in Chile and in the United States, through fellows exchange, scholarship training for Chilean faculty, and seminars for Chilean graduate students in the United States.” According to them, the program would also help the UM develop its Latin American Studies department. Will M. Myers, Frank Verbrugge, and Erret McDiarmid, “University of Concepción: A Report and Tentative Proposal to the Ford Foundation from the University of Minnesota (Reports 000068),” April 8, 1964, box 4, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁴⁷ Fernando Rodríguez Alonso and Charles W. Harrington, “The University of Concepción Library: Progress Made During the Years of the University of Minnesota-University of Concepcion Cooperative Program, 1964-1968 (Reports 007894),” August 15, 1968, box 338, FFR, Catalogued Reports, Reports 6262-9286, RAC.

⁴⁸ Will M. Myers, Frank Verbrugge, and Emet McDiarmid, “University of Concepción: A Report and Tentative Proposal to the Ford Foundation from the University of Minnesota (Reports 000068),” April 8, 1964, box 4, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁴⁹ Reuben Frodin to John P. Netherton, memorandum, October 9, 1968, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. It was the new UdeC President, Ignacio González Ginouvés, who pushed for the new central institutes of humanities and the social sciences. Report “Conclusions and Recommendations,” attached to letter from Simon González to Reuben Frodin, September 20, 1968, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. However, not everyone agreed with this endeavor. Stitchkin—who would reelected President in 1968—felt that González had mistakenly rushed into this. Reuben Frodin to John P. Netherton, memorandum, October 9, 1968, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC. Verbrugge thought that success with the CIS was a prerequisite to expansion. Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC. Since by April 1964, the reports about the progress with the CIS were very positive, the UM and the UdeC moved forward with the plan. Harry E. Wilhelm to Mr. Verne S. Atwater, “Request for modification of grant, University of Concepción, Sciences and Mathematics (60-213),” memorandum, April 7, 1964, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁵⁰ The UM library consultants worked to end the preexisting “chaotic pattern of operations and service” and assisted with the inventory, cataloguing, and classification of holdings. Francis

M. Boddy, James M. Kingsley, E. W. McDiarmid, and H. T. Morse, "Report of visit to the University of Concepcion, Chile (Report 000110)," January 1965, box 6, FFR, Catalogued Reports, Reports 1-3254, RAC. The establishment of the centralized library system was considered a huge success; see for example Reuben Frodin to John P. Netherton, memorandum, October 9, 1968, and George Sutija to John Netherton, memorandum, May 15, 1970, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC and Reel 2616).

⁵¹ AHD-UdeC, December 21, 1960 session, AV-UdeC; J. R. Whinnery to Reuben Frodin, report on each of the Central Institutes of Science, September 25, 1968, and Reuben Frodin to John P. Netherton, memorandum, October 9, 1968, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁵² The UdeC had applied to the UNSF for assistance in establishing the CIS in 1959. However, the UNSF had rejected its application. It would not support basic science because its grants were restricted to the "promotion of technical skills related to development problems." Alfred C. Wolf, memorandum on the visit with Vice Chancellor Hugo Trucco of the University of Concepcion on December 3, 1959, December 21, 1959, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC. However, the UNSF encouraged the UdeC to submit an application for its engineering program. Alfred C. Wolf, memorandum on the Visit with Vice Chancellor Hugo Trucco of the University of Concepcion on December 3, 1959, December 21, 1959, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC. The UdeC then turned to the FF for aid with the CIS, while actively pursuing the engineering grant from the Fund.

⁵³ J. R. Whinnery to Reuben Frodin, report on each of the Central Institutes of Science, September 25, 1968, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁵⁴ J. R. Whinnery to Reuben Frodin, report on each of the Central Institutes of Science, September 25, 1968, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁵⁵ Alfred C. Wolf, memorandum on the visit with Vice Chancellor Hugo Trucco of the University of Concepcion on December 3, 1959, December 21, 1959, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC; AHD-UdeC, December 9, 1959 session, AV-UdeC.

⁵⁶ The steelworks operated with the iron ore that a subsidiary of the Bethlehem Steel Corporation extracted from its mines in northern Chile, and with coal extracted from the nearby mines of Lota and Schwager. Bethlehem Steel supplied all the iron ore that Huachipato used during its first 21 years of operation. Augusto Millán Urzúa, *Historia de la minería del hierro en Chile* (Santiago, Chile: Editorial Universitaria, 1999), 104, 126; Sixty-five percent of the domestic coal that Huachipato used came from the Lota and Schwager mines, which were located 30 and 26 miles away from the plant, respectively. Joseph H Butler, "Manufacturing in the Concepción Region of Chile: Present Position and Prospects for Future Development," PhD dissertation, Foreign Field Research Program, Sponsored by the Office of Naval Research (Washington, DC: National Academy of Sciences - National Research Council, 1960), 20.

⁵⁷ In fact, the Compañía de Acero del Pacífico (CAP), the state company that managed and operated Huachipato, had to hire approximately 130 US engineers and technicians to operate the plant during its initial years. Butler, "Manufacturing in the Concepción Region of Chile," 18.

The Second National Convention of Metallurgical Industry (October 24-26, 1952) identified the lack of skilled workers in the metallurgical industry an “acute” problem. “Acta Oficial del Honorable Consejo Universitario de la the Universidad Técnica del Estado” (Minutes of the Honorable University Council of the State Technical University), November 14, 1956 session, Archivo Central de la Universidad de Santiago de Chile.

⁵⁸ DeForest L. Trautman, memorandum on the visit by Dr. David Stitchkin, rector of the University of Concepción, Chile, May 20, 1960, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁵⁹ García Molina, *El Campus*, 66.

⁶⁰ Beginning 1959, the ITR would train students in unitary operations and processes, industrial chemistry, metallurgy, mechanical preparation of minerals, fossil fuels technology, wood technology, agrarian industry, and electrochemistry. AHD-UdeC, July 8, 1959 session, AV-UdeC.

⁶¹ AHD-UdeC, January 28, 1956, July 4, 1956, and January 28, 1957 sessions, AV-UdeC.

⁶² AHD-UdeC, December 9, 1959 session, AV-UdeC.

⁶³ Alfred C. Wolf, memorandum on the interview with Rector Stitchkin on the current status of the University of Concepcion, Feb. 23, 1960, reel 2616, section “University Of Concepcion (06000213),” FFR, Grants U-Z, RAC. In fact, the School of Engineering was “a major user of the Science Institute courses.” Report by J. R. Whinnery, attached to his letter to Reuben Frodin of Sept. 25, 1968, reel 2616, section “University of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁶⁴ Huachipato stimulated the establishment of plants that manufactured cement, ferroalloys, wire, carbides, steel tubes, and metal profiles in its surroundings. By the late 1960s, the Empresa Nacional del Petróleo (ENAP) had established a petrochemical complex, which included a refinery and a sodium chloride plant. César Burotto and Dirección de Planificación del Desarrollo Urbano, Ministerio de Vivienda y Urbanismo (Chile), “Planeamiento Urbano En La Intercomuna de Concepción,” *AUCA* 13 (1968): 63, 67.

⁶⁵ As Verbrugge’s 1963 report makes clear, one of the main reasons for which the university had created the CIS was to “provide facilities which could more adequately meet the changing demands for trained man power within the country.” Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁶⁶ Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁶⁷ Frank Verbrugge, “The Central Institutes of Science at the University of Concepción (Reports 000286),” September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁶⁸ When Stitchkin asked Wolf if the foundation would consider funding the construction of the central library, Wolf responded in the negative, making “the usual disclaimer about financial support to construction.” Alfred C. Wolf, memorandum on the interview held with Rector Stitchkin about the current status of the University of Concepción, Feb. 23, 1960, reel 2616, section “University Of Concepcion (06000213),” FFR, Grants U-Z, RAC.

⁶⁹ General Treasurer's Office, UdeC, "Final Financial Report," April 3, 1970, reel 2616, section "University of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁷⁰ Nita Rous Manitzas, "University of Concepción, reorganization of science and mathematics programs (60-213) – progress report as of May 31, 1964," memorandum, June 11, 1964, reel 2616, section "University of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁷¹ Frank Verbrugge, "The Central Institutes of Science at the University of Concepción (Reports 000286)," September 1963, box 16, FFR, Catalogued Reports, Reports 1-3254, RAC.

⁷² AHD-UdeC, March 21, 1962 session, AV-UdeC; J. R. Whinnery to Reuben Frodin, report on each of the Central Institutes of Science, September 25, 1968, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁷³ For example, in March 1962, Stitchkin reminded the HBD that because of the UN Special Fund donation, the UdeC had a "serious commitment" to build the Mechanical Technologies Building. He also mentions the Central Library as another building commitment. AHD-UdeC, March 21, 1962. The UdeC spent US\$452,000 to construct the Mechanical Technologies Building. J. R. Whinnery to Reuben Frodin, report on each of the Central Institutes of Science, September 25, 1968, reel 2616, section "University Of Concepcion (06000213)," FFR, Grants U-Z, RAC.

⁷⁴ Karl H. Brunner von Lehenstein, *Manual de urbanismo*, vol. 2 (Bogotá: Imprenta Municipal, 1940), 184. This group of photographs is contained in folder 282, box 7, RFR, General Correspondence, Photographs, RG 2, 1958-1990, Series 309: Chile, RAC.

⁷⁵ Founding UdeC President Enrique Molina Garmendia (1871-1964) had insisted that the university-city include a bell tower very similar to Berkeley's Sather Tower, which had impressed him during his 1918–1919 trip to the US. García Molina, *El Campus*, 8, 10, 38.

⁷⁶ [UdeC], "Universidad de Concepción (Chile): Fotografías," unpublished photographic album, n.d. [ca. 1960], 1541, box 71, RFR, photographs, series 100-1000, Series 309: Chile, RAC.

⁷⁷ The UdeC built houses for auxiliary staff outside of campus in the former agricultural estate it owned in Andalién and cabins and colleges on campus to house female and male students separately. See the captioned photographs in folder 1542, box 72, RFR, Photographs, Series 100-1000, Series 309: Chile, RAC.

⁷⁸ "En primer plano, aspecto del Hogar Central de Estudiantes," n.d. [ca. 1959], folder 1542, box 72, RFR, Photographs, Series 100-1000, Series 309: Chile, RAC.

⁷⁹ There are several photographs that record these interior spaces in: [UdeC], "Universidad de Concepción (Chile): Fotografías," unpublished photographic album, n.d. [ca. 1960], 1541, box 71, RFR, photographs, series 100-1000, Series 309: Chile, RAC; and folders 1602 and 1603, box 93, FFR, Photographs, Series 3: General, Program, and Project Photographs, Subseries 3-10: Overseas Development, RAC.

⁸⁰ On February 27, 2010, a strong earthquake started a fire that destroyed the Central Institute of Chemistry. "Mineduc suspende las clases: Incendio y explosiones en UdeC," *El Sur* (Concepción, Chile), February 28, 2010.

⁸¹ A few photographs in folder 1602, box 93, FFR, Photographs, Series 3: General, Program, and Project Photographs, Subseries 3-10: Overseas Development bear Stallforth's seal on the

back. According to the Archivo Fotográfico de la Universidad de Concepción (AFUDEC), Stallforth worked for the UdeC between 1959 and 1966. AFUDEC, “Unidad documental simple 0989 - Sala Taller, <http://152.74.16.165/index.php/0989>, accessed September 12, 2022. This was precisely the period in which the UdeC was requesting aid from and reporting back to the RF, FF, and UNSF. Perhaps Atcon, the UNESCO expert, was behind her hiring. It was him who in October 1959 proposed to establish the university’s Photographic Service under Stallforth’s leadership and to raise her salary in consideration of the “highly satisfactory work” she had been doing for the university. AHD-UdeC, October 29, 1959 session, AV-UdeC.

⁸² Alfred C. Wolf, memorandum on the interview held with Rector Stitchkin about the current status of the University of Concepción, Feb. 23, 1960, reel 2616, section “University Of Concepcion (06000213),” FFR, Grants U-Z, RAC.