Chemical and Analytical Development

Early Talent Program
The Chemical and Analytical Development (CHAD) Early Talent Program is a unique opportunity to collect first experience of applied chemistry in the pharmaceutical industry. It will not only enable you to transfer your theoretical know-how into practice but also to grow your internal network by working on different assignments and rotating through different functional areas. You will gain a wide perspective and solid foundations in Chemical and Analytical Development to build your future career.

Thomas Heinz  
Global Head Chemical R&D

The CHAD Early Talent Program will enable you to gain insights into the manufacturing world of small-molecule Active Pharmaceutical Ingredients (APIs) and its related career opportunities. Through cross-functional projects in different areas, you will not only be introduced to manufacturing processes but also to related Good Manufacturing Practice (GMP) regulations and requirements, an essential prerequisite for supplying drug substance to be administered to patients in clinical trials.

Andreas Knell  
Global Head Drug Substance Supply

“The Chemical and Analytical Development (CHAD) Early Talent Program is an opportunity to discover the global functions of chemical research and development and drug substance supply within Novartis. The program consists of different rotation assignments within CHAD over a period of 24 months.”
Mission of Chemical and Analytical Development

“In CHAD we aim to advance our process and analytical development as well as manufacturing capabilities through state-of-the-art technologies and methodologies to optimally support the Novartis project portfolio. We drive scientific and operational excellence through collaboration in teams, a culture of exchange, targeted training and development, and through continuous learning.”

As a central function within Novartis Technical Research and Development, we are supporting development projects from early drug discovery until commercialization. Throughout this process we are cooperating with all relevant development functions, e.g. drug product development, analytical development, Regulatory CMC as well as with the Novartis research and the commercial production organization.

The Chemical and Analytical Development organization has two organizational pillars, namely the Chemical Research and Development Unit and the Drug Substance Supply Unit. These two global units represent our main responsibilities of developing and implementing processes for Active Pharmaceutical Ingredients (API) manufacture and quality control as well as delivering drug substance supplies for clinical trials and technical development.

During the design of processes and systems for the manufacture of APIs our scientists follow guiding principles considering environment, economy, safety, and society which help us to fulfill our social responsibilities.

In CHAD we cooperate with a global network of universities and research organizations to implement cutting-edge science and technologies for synthesizing and manufacturing drug substances.
The CHAD Early Talent Program

This 24 months program will enable the participants to gain practical experience and to get introduced to manufacturing processes and related Good Manufacturing Practice (GMP). Rotations through different groups within CHAD Basel, and work in cross-functional projects and matrix teams will provide a comprehensive overview on drug development within Novartis.

Overall the program will provide a solid foundation for your future career in the pharmaceutical industry.

Activities covered by the CHAD Early talent program:

Chemical synthesis development
• Design and develop chemical steps at lab scale
• Get insights into scale-up and process transfer
• Ensure health safety and environment aspects are implemented in your projects
• Implement new technologies if applicable
• Shape your project documentation skills

Analytical development
• Support analytical method development & method validation for development projects
• Get insights into Process Analytical Technology applications during development
• Support implementation of new analytical technologies where applicable

Drug Substance Supply
• Get insights into GMP manufacture of drug substance for clinical trials
• Support project teams during process handover and equipment selection
• Learn the basic principles of GMP documentation
• Interact with Quality Assurance

Innovation Report
• Compile a scientific report on a relevant innovation topic with potential portfolio applicability in a group with the other program participants
• This will give you the opportunity to build up additional expertise while shaping your presentation and writing skills while being coached from an experienced Novartis scientist

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<th>Months 1 - 8</th>
<th>Months 9 - 12</th>
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<td>Synthesis Development</td>
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Comments from CHAD members and customers on the program

This program is designed to help graduates gaining an understanding of drug development processes and to help them identify in which area they best can apply their skills and aspirations. The opportunity to work in three different areas of chemical development, i.e. synthesis development, analytics and manufacturing, offers a good overview of the drug development processes and allows participants to start building up a personal network within Novartis.

Klaus-Peter Moll
Head of Operations and Strategy CHAD

Remembering my time at universities, the studies were very much focused on careers in academia and limited opportunities existed to see practical applications of the acquired knowledge in the industry. I am excited to see that we provide now on a systematic basis the chance for graduates to gain insights into the pharmaceutical industry and thereby also creating an enhanced access to young talents which is key for the future success of the company.

Martin Spormann
Chemical Development Unit Head

Innovation is a key value at Novartis. In everything we do, we strive to bring innovative medicines to patients. Candidates can be part of this adventure and will see how manifold innovation can be – from big game changing ideas to small innovations which improve daily routines.

Thierry Schlama
Chemical Innovation Board Leader

The CHAD Early Talent Program is a unique learning opportunity both from a personal and professional perspective. It will allow participants to apply their education in an innovative, dynamic, diverse and global environment. Working with some of the best chemists in the pharmaceutical industry and profit from their coaching is in my opinion a perfect start into a real-life work environment after university.

Jennifer Verdugo
CHAD Human Resource Business partner
The development of scalable robust manufacturing processes for small molecule drug substances is one of the key tasks in CHAD. Our work starts when we take over the molecular structure from our colleagues in research.

We develop the final synthetic route for commercial manufacturing, and consider aspects like quality, safety, efficiency as well as the impact on the environment. In a second step we develop and optimize the final manufacturing process that will be handed over to the commercial manufacturing department.

The development of analytical methods for quality monitoring is equally important and conducted by analytical experts within our department.

Chemical and analytical development requires to combine many aspects and disciplines and collaboration is therefore essential to our success.

Candidates of the Early Talent Program have the opportunity to be part of this development process from first trials at laboratory scale to kilogram scale manufacturing in our pilot plant.

**Michael Parmentier**  
CHAD internship coordinator

The launch of a new product on the market and the corresponding routine production within the commercial manufacturing plants is the ultimate goal of each Novartis development project.

To ensure a smooth hand-over from the development units to commercial manufacturing, we have to work closely with our colleagues from CHAD.

All the knowledge, information and experience collected during the development and scale-up of every reaction step is crucial for a seamless transfer into the final large scale production for commercial purposes.

The Early Talent program is a great opportunity to gain experience into the scale-up and development of drug substance, which will further stimulate the interest into the world of commercial manufacturing for the candidates of this exciting program.

**Michael Wessels**  
Chemical Operations Process Unit Head
Qualification and requirements

You are recognized for your skills in your field of expertise and you have a strong interest in chemical development and drug substance manufacturing.

Candidates who recently completed their Master studies or PhD are welcome to apply to the CHAD Early Talent Program.

**CHAD Early Talent Program**

- Master studies in Chemistry or Chemical Engineering
- Preferentially, a completed PhD
- Proficient in utilization of special tools/equipment, lab automation tools
- Good knowledge of software and computer tools, e.g. MS Office
- Fluency in English; additional languages, e.g. German or French are welcome
- Ready to expand own knowledge, open minded with an international outlook
- Strong interpersonal skills, i.e. can demonstrate ability to communicate well with people from a variety of backgrounds/Cultures and at different hierarchy levels inside and outside the company

**How to apply**

To apply please access the Novartis career website at “http://www.novartis.com/” www.novartis.com/careers, search for the keyword “CHAD Early Talent” and submit your application online.